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**PSYCHOLOGY AND SCIENTIFIC METHODS**



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# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY

AND

## SCIENTIFIC METHODS

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# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### DO THINGS EXIST?

AT first sight nothing could seem more obvious than that things, individual blocks, exist. In fact that *things* exist as individual and distinct has seemed far clearer to common sense than that *minds* are individual. We only have to recollect that Aristotle found mind (active *nous*) impersonal and universal, while the body, with the functions depending upon it, seemed to furnish the individual substrate, and that Thomas Aquinas makes the body the principle of individuation, without which human souls, like the angels, would merge into the genus. It is unnecessary to say that philosophy has changed front in this respect, and finds it comparatively easy to recognize the individuality of minds, while the independence and individuality of things has well-nigh disappeared in the general continuum.

There have been several motives for this attitude towards the reality of things. It is hardly necessary to mention that of temperamental mysticism, which will always seek reality in haziness and away from distinctions. Our going into a trance or going to sleep does obliterate plurality so far as we are concerned. But while it does away with the *significance* of distinctions for the dreamer, does it also do away with the *existence* of distinctions? I do not believe so. I can not help feeling that we are wiser when we are awake than when we are asleep, and that reality is such as we must take it in our systematic conduct. I would rather trust the tried-out distinctions of common sense and science than the dreamy confluence of mysticism.

Our antipathy to distinctions, however, may not be due merely to temperamental laziness. It may be due to conceptual difficulties. Thus the difficulties of conceiving plural things and their interactions in space lead Lotze to conceive the universe as a polyphonic unity—an "esthetic unity of purpose in the world which, as in some work of art, combines with convincing justice things which in their isolation would seem incoherent and scarcely to stand in any relation to one



another at all.'"<sup>1</sup> Bradley, in a similar way, having found the problem of relations and of motion insuperable on his abstract basis of procedure, has recourse to an esthetic absolute where the plurality of things and their ceaseless struggle is at rest. I can not see, however, how we are justified in reading plurality out of the world because its existence interferes with our ready-made concepts. New concepts, perhaps the electrical definition of physical atoms, may make it easier to see how a world of relatively stable things may coexist and interact. In the meantime, if we must acknowledge diversity of things for purposes of conduct, we must hold that they have some distinct reality, even while we are perfecting our conceptual models. In any case, thought must wait upon facts. Where we find symphonic unity of system, there we must of course acknowledge it. But when the facts do not warrant such intimate unity, we have no right to read it into them on the basis of *a priori* conceptions. Even within our own individual history, we are far from finding a closely woven purposive unity. We are the creatures largely of habits and instincts. We must provisionally acknowledge different types of continuity of which unity of purpose is only one.

The intellectualist's condemnation of things owes its convincingness to certain deep-rooted prejudices. One of these prejudices is that individuality means indivisibility, and conversely that what can be divided into parts can not be individual. The substance of Spinoza and the atoms of Democritus are alike indivisible. This difficulty of indecomposability would of course equally influence our view of psychic unities. We would have to deny the reality of the self, because it is complex and capable of analysis. The art-object would fall to pieces the moment we analyzed it. Hence you have either a heap of pieces on the one hand or a mystical, undifferentiated unity on the other. Now, what we must do here is to face the problem honestly and cast out prejudice. We can as a matter of fact recognize a self or a work of art as a unity if the complexity converges in a direction or towards a purpose. If in the organic or inorganic thing we can recognize a common impulse or movement, we must recognize the thing as one, even though it is complex and physically divisible.

This prejudice is closely connected with another—the vice of abstraction, useful though abstraction is in its own place in the economy of thought. This prejudice consists in emphasizing the disjunctive function of the mind and in ignoring the conjunctive. Thus it is regarded as self-evident that the disparate qualities—the creatures of linguistic substantiation—exist; but their interpenetration, their coexistence in the one thing, is regarded as the insuperable

<sup>1</sup> "Metaphysics," English translation, Vol. II., p. 60.

problem. And it is insuperable, if you take the disparate abstractions for granted and try to compound a thing out of them. But this is starting at the wrong end of the process. We must go back to the concrete object. While our thought can abstract qualities, these qualities do not exist first as abstract entities and then compound themselves. They are ways of taking things in concrete contexts. If we can discriminate distinctions within this object, it is quite true that we must regard such distinctions as real. But if we must take the distinctions as coexisting, interpenetrating, flowing into each other, cohering in one pattern and movement, it is also true that they can so interpenetrate and coexist. Our conjunctive way of taking the object of experience needs no more justification than our disjunctive or analytic way. If the distinctions *do* coexist and interpenetrate, they *can* do so. We do not make the transitions or unities, any more than the discreteness, in taking account of them. And Berkeley is quite right in maintaining that no additional entity, no substance or *x*, can simplify the fact, which is given with the qualities, viz., that they interpenetrate and persist. To trace these coexistences and transitions of the facts of experience is the business of science, quite as much as that of the analysis of properties.

It is strange that the unity of the thing should have caused so much trouble, while most philosophers have been willing to take the diversity within the thing for granted. I can not see why one is not as mysterious or as clear as the other. If you assume that a thing is mere abstract unity, it is true that no logic could get diversity out of it. If, again, you start with a collection of independent, disparate qualities, it will no doubt be impossible to get any unity into it. The simpler way is to proceed empirically and not to make absurd assumptions. If we can distinguish diversity of function, then, of course, there is diversity. If diversity of function, on the other hand, makes a thing go to pieces, if the only transitions possible are those of identity of property, then we should at least be as consistent as the father of intellectualism, Parmenides, and with him rule out all diversity as inconceivable, leaving the residuum of the homogeneous block of being.

Another intellectualist prejudice of which we must rid ourselves is the assumption that an individual, in order to be distinct, must distinguish itself. On this basis, only self-conscious individuals could exist, and they only so long as they are self-conscious. We ourselves would vanish as individuals the moment we go to sleep or when our interest becomes absorbed in the objective situation. I do not believe this a valid assumption. Neither the existence nor the significance of an individual need depend upon self-discrimination. We have individual *significance* so long as any experience distinguishes us,



whether awake or asleep. And the *existence* of an individual is in no wise dependent upon being distinguished. A thing may exist as individual a million years before it is distinguished. It is individual not because it distinguishes itself or we distinguish it, but because, when we do take account of it, we must *treat it* as distinct for the purpose in question.

Nor is it necessary to regard self-subsistence or independence as the condition of reality. If only the self-subsistent were real, then only an indivisible whole, as Spinoza maintains, could be real. Now, it is quite true that the parts must, somehow, hang together. At least the physical world hangs together by its gravitational threads. But such hanging together need not prevent a certain individual play of the parts. The earth hangs together with the solar system, but that does not prevent the earth from having its own motion and history. For finite purposes at least, it is convenient to take reality piecemeal. And reality has parts and distinctions just in so far as it lends itself to such individual taking, however much the parts may cohere with a larger pattern. It is such pluralism which makes practical adjustment and scientific sorting and identification relevant. The parts or aspects are real, if we must meet them as real. And the recognition of the character and reality of the part may, for the purpose in question, be more essential than the reality of the whole.

It is not necessary, on the other hand, in order to recognize the plurality of the world, to fall into the opposite intellectualist abstraction, that of absolutely independent plural entities such as the old-fashioned atoms or monads. Such an assumption is necessarily suicidal, for since such entities could not make any difference to each other or to any perceiving subject, it becomes impossible to speak of them as having properties or even to prove their existence. Even zero must be part of a thought context in order to be considered as existing. Things are as independent and impenetrable as we must take them. They may exist, as we have seen, independent of our cognitive context. They may come and go, so far as our awareness is concerned, without prejudice to their existence. But in some context they must hang. I can not conceive of individuals as outside of any context at all, as making no difference to other individuals, for it is through such difference to other individuals, and in the last analysis to human nature, that we conceive of an individual as existing at all. I can see only the possibility of a relative pluralism—pluralism with its rough edges, its overlapping identities—both from the existential and the cognitive side. No center liveth unto itself, in the isolated sense of Leibnitz's monad. But such relative pluralism prevents in any case the blank monotony of eleatic being. And while the parts hang with each other, they must be considered

as real as the whole. The whole has no reality abstracted from just such parts. If the parts are relative to the whole, the whole is no less relative to the parts. If we emphasize that individuals exist and have significance only in contexts, it is well not to forget that they *do* exist within the contexts, social or physical, and can be identified in the variety of contexts into which they enter.

Another and more serious kind of objection has been raised against the reality of things from the Heraclitean point of view, represented so brilliantly at the present time by Professor Bergson. If the universe is an absolute flux, making sections in the stream of change and calling them things must be a purely artificial attitude—an illusion due to our gross sense perception at best and justified only by its convenience for practical purposes. To quote a recent statement of Bergson's: "I regard the whole parceling out of things as relative to our faculty of perception. Our senses, adjusted to the material world, trace there lines of division which exist as directions, carved out for our future action. It is our contingent action which is reflected back in matter, as in a mirror, when our eyes perceive objects with well-marked contours, and distinguish them one from the other."<sup>2</sup> Things, therefore, have no real existence. They are due merely to our practical purposes. The real world is one of absolute fluency, where the past is drawn up into the moving flow. Not extension, but interpenetration; not repetition, but absolute novelty and growth; not qualities, but change, characterizes the real world, the key to which must be found in our own stream of consciousness. This real world can be grasped, not by the intellect, but by intuition, which gives us the real flow, as contrasted with the stereotyped copy of the intellect. And how do we come to speak of things at all, then? By means of the intellect we form a space image of the real process. This image is like the cinematographic copy of moving figures. It is a static picture of spatially spread out and recorded changes which we substitute for the real duration. But while the latter is characterized by interpenetration and indivisibility, the former is characterized by extension and divisibility. Science decomposes the objects of sense still further into molecules and atoms and centers of force, but these pictures of science have no more reality than the perceptual things. They are merely contrivances to deal with the world of flux.

Such, in brief, is the view of Bergson, and it certainly carries with it a great deal of truth. Our purposes are indispensable in the significant differentiation of our world; and sometimes, no doubt, our marking the world off into parts is as artificial as the astronomer's longitudes and latitudes and his names for constellations. The world,

<sup>2</sup> This JOURNAL, Vol. VII., No. 14, pp. 386 and 287.



too, from our finite point of view at any rate, is a world where novelty and growth play an important part. I can not admit, however, that the new Heracliteanism gives us the whole truth.

In the first place, we must be suspicious of all absolutistic formulas. Absolute flux is as impossible of proof as absolute identity. Bergson and Parmenides alike must found their philosophy on intuition and conviction. I prefer the more modest pragmatic way of taking the world.<sup>3</sup> This means to take the facts at their face value. If there seems to be change and novelty, then, in so far, we must own it, whether our novelty is a retracing of an absolute experience or is objectively creative. Knowledge, whatever claims to absoluteness we may make, is after all our finite human version of reality; and we have access to no other. And for us change and novelty are real facts. But while we must recognize novelty and interpenetration as facts of our experience, it is also true that we must recognize a certain amount of constancy. And this constancy can not be due merely to language and space objectification. There must, on the one hand, be constancy in our meanings, our inner purposes; and they are real processes. And there must, on the other, be constancy on the part of the processes referred to. Else constancy on the part of our symbols would not avail. Suppose we had a world where everything flowed but the symbols: in such a world we could not recognize or use the symbols as the same. There could be no such thing as intellect in such a world, because it too would have to change. And even if memories and concepts dipped into such a world from another universe, they would be utterly useless where nothing repeats itself. The intellect is an agency for prediction; and what we must be able to predict is the real world of processes. Mind and things must conspire to have science. Even in the cinematograph, you have the constancy of the pictures and of the machinery which repeats them; and they are part of the real world.

Nor is it true of things, any more than of selves, that our marking them off from their context is purely arbitrary. It is difficult enough in either case; and we can not pull them, root and all, without pulling a good deal of the context with them. When we come to define what we mean by Cæsar, we find that he is very much entangled with the past out of which he grew, with the age in which he struggled, and with the results and opinions of his labors ever since. Yet for all that he is a well-marked character which we can understand and appreciate. So with the thing—the organic individual, like the tree, or the inorganic individual, like the stone or the crystal. In any case, they are individual, when we must deal with them as such;

<sup>3</sup> My attitude to pragmatism I have explained in "Truth and Reality," Macmillan, 1911, especially in Chapters IX. and X.

not when we mark them off arbitrarily, as in the case of the rainbow. And this is true though the individual is complex; though it may consist of many interpenetrating impulses, all traveling at diverse paces.

When we come to *define* what we mean by the individuality of a thing, the problem waxes more difficult. Psychology gives us but scant help. As a matter of fact, it has tended to unfit us for the proper attitude to reality through its subjectivistic tendency. What we intend when we speak of a thing or act on a thing is not a fusion of sensations, together with the suggested sensory and ideational complex. This is merely an account of the process of *becoming aware* of things and not an account of the reality of things. Things *can* make sensible differences to our organism, but they are not constituted by our perception. They must be taken as preexisting in their own contexts, prior to such sensory discrimination on our part, else our instincts would not be adjusted to them; they could fulfil no interest or need on the part of our will. The sensory differences, for practical purposes, exist primarily as signs or guides suggesting further control and use. The sight sensations, in the case of the infant, suggest the motor reaction of active touch, which in turn suggests the reflexes of eating.

What, then, individuates things? First of all, from the point of view of significance, they are individuated, as we have seen, by the purposes which select them and which they fulfil. They would have no individual *significance* except as thus differentiated in our cognitive experience. The thing must embody a will. Aristotle was quite right in saying that we can not treat the thing as a mere collection. We can not regard the word as a mere collection of letters, in so far as it is an individual word. "We must seek the cause by reason of which the matter is some definite thing."<sup>4</sup> For Aristotle this means finding the final cause of the thing. In artificial things like the word or the work of art, it is quite plain that we must find the idea which is expressed. Can we also find such an objective idea in natural things? No, we can not *find* it there. We must be satisfied if it has such distinctness of character and history as to fulfil a specific purpose of ours, whether it sustains the relation of a work of art to a more comprehensive experience or not.

It does not follow, however, that things are created or "faked" by thus being taken over into our cognitive context. The selection and acknowledgment is forced, not arbitrary. The thing must suggest an own center of energy. It must roll out from the larger field of experience, forcing attention to its own movement and identity. Our cognitive meaning, so far from constituting things, must tally

<sup>4</sup>"Metaphysics," Bk. VII., Ch. XVII., 1.



with the things—terminate in our perceptions of them—in order to be valid. If the thing is real, it can not be infinitely divisible, *i. e.*, the form of the thing can not be merely of our own choosing. To be accorded objective existence, the thing must be acknowledged as having its own impulse, its own history, its own pattern of parts, which our ideas must copy sufficiently for identification and prediction. And the thing may have to be acknowledged as having such character and history, whether as old as the sun or as evanescent as the cloudlet.

Can we identify such things in our experience? In the case of the organic thing, we seem to have a natural unity, comparable to that which we have in the case of the unity of the ego, even though the former is not a significant unity. There is a history which embodies a certain end or has a certain direction. To be sure, organisms may sometimes be divided without destroying their life; and the lower organisms do propagate their existence by spontaneous division. But the cell seems to be even here a fairly definite entity. The unicellular organisms have an individual immortality which is only limited by external accident.

When we come to inorganic things, the problem is difficult. On the analogy of geometrical quantity it has sometimes been held that physical things are infinitely divisible. Interesting antinomies have been invented from Zeno down by playing between the mathematical and the physical conception of quantity. But we must not confuse mathematical divisibility with physical divisibility. Empirically, what we call things are, on the one hand, capable of being taken as individuals. On the other hand, it is possible to distinguish parts. Do we come to a limit in our division where we have to deal with a final natural unity? We do for practical purposes at least. The molecule seems like a distinct stopping-place, however hypothetical, if we would preserve the character of the compound. And in recent years interesting experiments have been made by Rutherford and others to prove the real existence of the atom. These experiments can not be ruled out by any *a priori* theory as regards infinite divisibility. The atom in turn seems to be a holding company for energies which under certain conditions can act individually. A smaller unit, the electron, it is maintained, must be assumed to account for such phenomena as radioactivity. The negative electric charge seems like a natural unit. Is it final? We can not say. All we can say is that we have had no need so far of assuming a smaller unit. There certainly is no evidence for infinite divisibility. Furthermore, because units do not have absolute permanency and are themselves complex, that does not gainsay their individual reality, while we can take them



as individual. The chair is an individual while we can use it as a chair, however complex and unstable its structure.

It will be seen that we have adopted the instrumental method in dealing with the reality of the thing. Unlike the self, the thing has no meaning or value that we can share with it. We must judge it, therefore, by the ways in which we must take it in realizing *our* purposes; and we must hold that its reality is precisely what we must take it as in the service of our specific will. Let us now try to sum up the pragmatic significance of the thing. In the first place, we have seen that we can not speak of things unless we have persistent identity—identity both in the purposes which take the things and in the objective processes which are taken. Unless we can take the same processes over again and thus predict their reoccurrence, we can not speak of things. In a world of absolute flux, not even the illusion of a thing could arise. This persistence or possibility of identification of certain processes is the pragmatic significance of substance, whatever fleeting changes we may have to ignore in our conceptual taking of reality. As the thing is capable of existing in many contexts, and as it may have different reactions in different contexts, the idea of potential energy arises. The potential, or the core of the thing, is the more of what the thing can do. The air can produce sound. It can also furnish the Kansas dust storm, it can convey oxygen to the lungs, etc. As the contexts are not present, perhaps, for doing all these things at once, we speak of the others as possible reactions—the (for the time being) hidden energy of the thing.

In the second place, these expectancies or ways of taking the thing are social. Things do not merely figure in my individual experience, but they are capable of figuring in any number of experiences in the same immediate way. They fulfil not merely an individual, but a social, purpose. One reason for regarding social experience as more trustworthy is that social experience is less subject to illusions and hallucinations. While this is largely so and therefore furnishes an additional check, illusions and hallucinations may be social for the time being. The illusion of the moving railroad train is as social as any perception. A whole crowd has been known to see a ghost. So being social is not an infallible test of objectivity. As such perceptions, however, do not tally with *further experiences*, they can not be taken as things. Whether we deal with things, therefore, from the point of view of individual or of social experience, our ideas of things can only be proven true as experience leans upon further experience in a consistent way.

It has sometimes been stated that things are objective, because they are objects for several subjects. But this is inverting the true relation. Things are social experiences, because they hang in a con-

text of their own and are not dependent upon individual experience for their existence. Things, moreover, are not the *only* objects of social experience. It is not true that our psychological objects are objects of one subject only as contrasted with things. If so, we could have no psychological sciences. We could never understand each other's meanings or their relations. The fact is that we can share each other's images, concepts, and even emotions and will attitudes, as truly as our sense facts. The oldest sciences man created were sciences of meaning, such as logic, geometry, and ethics. It is absurd, then, to say that mental facts exist for one subject only—are private and unique. It is not their social character which distinguishes things from meanings.

Besides social agreement, we must add, therefore, *sensible* continuity as characteristic of our taking of things. Things are the sensible embodiments of purposes. They have a certain "liveliness" that our meanings as such, however social, do not ordinarily have. They are energies which we must recognize as belonging to a space context of their own, with their own steadiness and order, independent of our meanings. It is not that we, either in our individual or our social capacity, *do* acknowledge things, which makes things objective, but that we *must* acknowledge them, and that we must acknowledge them as having such a sensible character, such motion, such use in the realization of our specific purposes. Our ideas must *terminate* in the sensible things in order to be valid. We may select them in our service, we may spread them out into our classificatory schemes, we may symbolize their relations by our equations; but we can do so successfully only by respecting their own character and relations as revealed in experience. We must believe, moreover, that the *substance* of things is precisely what we must take it as in experience. If radium breaks down and changes into helium, no assumption of inert matter, no postulate of substance, can guarantee its identity. The only key we have to reality is what reality must be taken as in the progressive realization of the purposes of human nature.

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## DISCUSSION

## CONSCIOUSNESS AND BEHAVIOR. A REPLY

“WHAT shall deliver the deliverer?”

Professor Miller asks the question at the end of a “discussion” of my paper on “Mind as an Observable Object.” It is I who am the “deliverer,” but of what a sorry sort will be gathered from the answer Mr. Miller finds to his own question.

What shall deliver the deliverer? Nothing but a taste for real solutions—which is the same as intellectual scruple. Nothing but common sense untired—which is the same as pertinacity in logic. Nothing but looking about us before we advance—sweeping the horizon of our subject—circumspection; that last rule of Descartes’s method, followed as far as human vision can, “to make enumerations so complete and reviews so general that I might be assured that nothing was omitted.”

One would like to have contributed something better than the inspiration of a bad example to sentiments so just.

But Mr. Miller is no unkindly critic. He is good enough to say that some earlier work of mine promised better things—that even now I may have better things in reserve. Perhaps, too, it occurred to Mr. Miller that a twenty-minute paper left me little room for enumerations so complete and reviews so general that I might be assured nothing was omitted. Something in the way of enumeration and review that I had tried before writing quite brought it home to me that sacrifices were demanded. I thought I might begin by passing over the *ungereimte Frage*.

However happy this idea, I know it would have been happier if men stood in closer agreement as to what *meaning* meant. But then the history of philosophy would be the shortest of stories, the love of wisdom would not go long unrequited, thought would lie listless in the pervading calm—and I should have missed a critic of flavor. It did seem to me, though, that some questions were beyond question—as, for example, What should we call that which can have no name?

I know that many with a taste for real solutions have answered, An immediate fact of consciousness. Out of such facts taken together they make a “field,” and out of such fields a world. But what in the world is consciousness? Across these fields, dust of their dust, passes the occasional figure of a fellow being. For his brother-likeness to the owner of the field, this passing figure is given a field of his own—one from which the giver is forever excluded. Straightway the donor grows anxious for his gift. Does the one to whom it has been given really have the thing that has just been given to him? Then where in the world is *his* consciousness?



No one can blame the dwellers in such a world if they cry aloud for deliverance, least of all one who remembers to have lived there and to have been unhappy there—one who might still be unhappily living there had he waited with the others for a deliverer who could work miracles.

Very pleasantly Mr. Miller quotes *à mon intention* the saying of a certain Old Lady: "We must all make a little effort every day to keep sane and to use words in the same senses." Which, being applied, I take to mean that the deliverer Mr. Miller awaits must begin by accepting "consciousness" in the sense those who would be delivered have given to the word. He must make a little effort every day to keep on using the term in this same sense. He must start at the same point and travel the same road, but he shall reach the goal of intelligibility at last without having been downed by any of those contradictions that have been the undoing of all who have so started and so traveled. Then, and only then, shall we know him for the true deliverer by the miracle he has wrought.

Meanwhile, for one who is too impatient to await the impossible, there lies close to hand a suggestion so natural that it can not excite enthusiasm, so simple that it may inspire mockery, and so little in the "same sense" with what has gone before that the Old Lady of Good Counsel would not have it to be sane. It is this: Let us make our way out of a troubled world by the same door where in we went. Did we start with an immediate fact of consciousness and construct a world? Then let us now begin with the world and construct an immediate fact of consciousness.

To be sure, the familiar scenes of the journey in will look altered on the way out, but isn't that rather what we had hoped for? At all events, it is vain to cry paradox at each new episode of the kind. For example, we came to grief by assuming that a man knew his own mind better than anything else and prior to anything else in the world. Somewhere along the way out we should expect to run across the reflection that his own mind is the last thing a man comes to know. "It is so far from self-evident," I had ventured to write, "that each man's mental state is his own indisputable possession, that no one hesitates to confess at times that his neighbor has read him better than he has read himself. . . . No one finds fault with Thackeray for intimating that the old Major is a better judge of Pendennis's feeling for the Fotheringay than is Pendennis himself."

Mr. Miller selects the passage for an illustration of his difficulties.

This is not a question of knowing our feelings, but of knowing how our feelings will develop or continue. To have a feeling and to be acquainted with it are the same thing. If a man does not know whether he is in love, it means that he does not know whether what he actually feels is or is not a sign of a continued disposition to feel and to act such as goes under that name.

And again I had said, continuing the thought, "It is quite as likely that, under certain conditions, I do not know what red is, as that, under other conditions, I do not know what love is."

But "this," comments Mr. Miller, "is not a question whether I am acquainted with my own sensation, but whether I am acquainted with the social name for my sensation."

These are only moments of our progress; but Mr. Miller is right in choosing them to illustrate a difference of view that must go with every step we take together. I wish indeed he had put his first objection a trifle differently. Unless love is of its essence enduring, there was no question of what Pendennis's feeling would develop into, still less would I have chosen Pen as an example of one who did not know whether he was in love. I assumed that we were dealing with a man who was "sure" he was in love—later with a man who was "sure" he saw the color red. Were they right or wrong in their surety? Or rather, has the question, Were they right or wrong? a meaning?

My own position: The question has so much meaning that it takes all the science of all the world to make out whether *A* is in love or whether *B* sees red. In that science *A* and *B* have their little part—they are contributors of undetermined value—but that they have the supreme, the ultimate part seems to me an assumption as little warranted as to suppose that I know better than all the world the nature of the pen I am holding because, forsooth, it is mine. Is it only a matter of the "social name" for the state of mind each surely has? Is it only that this one may err in calling his feeling "love," that one in calling his "red"? Then may they not err in calling their respective feelings by any other names, or by any names at all? And what should we, the philosophers, call that which maybe isn't this and maybe isn't that, but surely is the immediate and certain possession of the one who has it? "What shall we call that which can have no name?" Isn't the shade of Protagoras whispering something about "the last seeming"? Isn't Gorgias nudging my elbow? Isn't Cratylus congratulating himself on having held his peace and but wagged his finger?

However, enough of episodes! The general idea is that we start with a world and construct an immediate fact of consciousness. If this is the problem, we might be expected sooner or later to ask ourselves, What beings of this world do we call conscious, and why do we call them so? Is not this a search for the *meaning* of consciousness? It seemed to me that there must be something peculiar in the behavior of "conscious" beings, the which, if I could discover it, would give me the definition I sought. Their "consciousness" is that trait of the behavior of certain objects which makes me call them conscious; their "life," that trait which makes me call them alive;



their "heat," that trait which makes me call them hot—so I thought one might argue.

Mr. Miller does not complain of me (I think?) for having attempted no more than this statement of an experimental problem. His objection is to the statement itself.

Once more [he asks] the question what leads me to call a man conscious, and the question what consciousness means—is Mr. Singer assuming that they are the same question? Are the nature of a thing and the tokens by which I infer its presence the same? . . .

They are to me the same: I confuse, I identify, the question, What leads me to call a man conscious? with the question, What does consciousness mean? And I detect in myself the same lack of intellectual scruple in other situations. I am inclined to confuse the question, What leads me to call this thing a triangle? with the question, What does triangle mean? Whether it is that I have wearied me of common sense, or that my logic has lost its pertinacity, I can not see why I should treat a conscious being more befoggedly than a triangle. Is making a mystery of them a way of paying tribute to the "higher categories"?

In watching the behavior of beings I call by instinct conscious (the reason for which instinct constitutes my problem) I seem to find grounds for differentiating this part of their behavior into "faculties." Among other qualities, I attribute to them "sensitivity." Part of their action I call reaction; I call it their seeing of a color, their hearing of a sound. As my experience of other minds grows, my knowledge of my own is enriched: I class myself among those who see and hear. Further, I recognize certain behavior as *descriptive*, and notice the way in which descriptive behavior varies with the conditions governing seeing and hearing. All do not see the same thing or see the same thing in the same way. Mr. Miller makes much of this difference of content as a peculiarity—yes, as the very essence—of our notion of consciousness.

The reasons why we say we find something in the world of facts which we call consciousness and which distinguishes itself from a behaving body [Mr. Singer] really does not consider. These reasons are after all simple. . . . Let us try to state the reasons without the terms of personality, self, etc. For example, at a single moment a certain number of objects . . . are in a peculiar sense *together*, while those objects and other objects are not in the same sense together. . . . Of course the easiest way of putting this is to say *I am seeing* the first mentioned combination and *I am not seeing* [the second]. But it is quite easy to avoid making these references to self and its "seeing": it is quite easy to put it in terms of the "objective" facts themselves. These facts have a way of being *together*, some of them, while others are not in this sense together. . . . Groups there are, and breaches between them there are. Consciousness there is, and oblivion there is.

*Ungefähr sagt das der Pfarrer auch*—but with a slightly different meaning! For Mr. Miller concludes:

“Consciousness” here is not behavior; it is, according to usage, either the “field” itself or the relation of conjunction between the components of the field.

It can not be as a concession to my manner of speaking that Mr. Miller would avoid the easiest way of putting things. It is not I who object to such phrases as “*I am seeing the rug*” and “*I am not seeing the window*,” or again “*I am seeing the rug and he is seeing the window*.” As I arrive through observation at the notion of descriptive behavior, discover the way in which this varies with the point of view, I quite come to recognize that I see different things at different times, that I and another see different things at the same time. From this I gradually struggle toward an understanding of what is the same in the thing we so differently see, of the “objective” and the “subjective” factors in every description. I come to discover a subjective factor in my account of the very world with which I started. I come to see that the purely objective world and the purely subjective datum of consciousness are two ideals toward which we endlessly strive, modifying our notions of each as we change our understanding of the other.

Are there not left vestiges of sanity, even of something like common sense, in my simple philosophy? Who has ever been offered an immediate state of consciousness out of which to construct a world? Who has not been forced to start with a world, which it was his given task to *re-construct*? It is only in this process of reconstruction that the concepts of “consciousness” and “object of consciousness” fall out—*they fall out together*, and together they grow apace. To follow the adventures of this pair is, I suspect, to be led deep into the heart of things.

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## A REPLY TO PROFESSOR MCGILVARY'S QUESTIONS

CIRCUMSTANCES connected with the time of the appearance of Professor McGilvary's courteous questions to me (see this JOURNAL for August 17, 1911) prevented my attention to them in proper season. I hope the long lapse of time has not outlawed my reply—such as it is.

His questions were based primarily upon the following quotation from my article in the “James Memorial Volume”: “The so-called action of ‘consciousness’ means simply the organic releases in the way of behavior which are the conditions of awareness and which



also modify its content." If I am not able to answer Professor McGilvary's questions directly, or with respect to the form in which he has put them, it is because these questions, as he formulates them, seem to me to depend upon ignoring the force of the *so-called* prefixed to *action* and the quotation-marks surrounding the word *consciousness*. I meant by these precautions to warn the reader that I was referring to a view for which I disowned responsibility, especially as regards "consciousness." In fact I supposed it would be evident that the *consciousness* of the quotation marks designated precisely a conception which I was engaged in criticizing, and for which I was proffering a substitute. But the form of the questions put to me seems to me (I may misapprehend their import) to depend upon supposing that I accept just what I meant to reject. Naturally, then, the questions imply that I have involved myself in serious inconsistencies.

I quote two passages which afford some overt evidence that my impression is correct. "Although elsewhere in this paper Professor Dewey defined awareness as attention, I presume that in this sentence [the one quoted above] he would mean to include consciousness in its inattentive forms also." And in connection with his next question he says, "Knowledge is one kind of consciousness, presumably." Both of these presumptions are natural on the basis of the notion of consciousness referred to in quotation marks, but I have difficulty in placing them in connection with my own view. Now if I am right in supposing that Professor McGilvary means one thing by consciousness and I mean another, I am somewhat embarrassed in replying to his questions. If I reply in his sense, I shall misrepresent myself; if I reply in mine, I shall probably give additional cause for misunderstanding, as the answers will be read in terms of his sense. Accordingly, I shall try to indicate what my view is, and then state the form his questions would take upon its basis.

My contention was that "consciousness" is an adjective of behavior, a quality attaching to it under certain conditions. When we make a noun of "conscious" and forget that we are dealing (as in the case of other nouns in -ness) with an abstract noun, we are guilty of the same fallacy as if we abstracted red from things and then discussed the relation of redness to things, instead of the relation of red things to other things. Hence (to come to question 1) there is certainly a question as to the relation of conscious behavior, attentive behavior, to other kinds of behavior. But this is *not* a question that can be discussed profitably after it has been misput. If the actual question is as to the rôle of the brain in certain kinds of behavior, the parallelist, automatist, etc., are making answer after they have translated the question into another and artificial form.

So with the second question. My reply (after I have translated the question) is that the aim of knowledge (to which reference was made) is the enrichment and guidance of subsequent behaviors—of all kinds. That conscious behavior grows out of instinctive and habitual (routine) behavior and is the prerequisite of moral, technological, esthetic, etc., behaviors, and that looking at it in this way is the proper way of understanding thinking (“consciousness”) and all that goes with it, may be false positions as matters of fact, but I do not see that such positions involve questions of internal consistency.

The third question reads: “If it is the organic releases that change the environment in the act of knowing, does knowing as distinct from these organic releases make any changes in the environment on its own account?” The question involves the repudiated conception of consciousness, in the distinction it propounds between knowing and behavior. If consciousness be a characteristic quality of one kind of behavior, as distinct from other kinds, Professor McGilvary’s question can not be asked. The only question is as to *what* changes conscious behavior makes as contrasting with other kinds. And my answer is that just given: the changes that conduce to direction of subsequent action and to enrichment of their meanings.

The fourth question reads in one of its forms: “Once distinguish between consciousness and organic releases, what justification have we for asserting that knowledge can be only of the *effects* of the conditions of knowledge?” Here again, the distinguishing holds with the meaning that Professor McGilvary obviously attributes to “consciousness,” but not upon my meaning. Translated into my own terms, the question would read: “What reasons have we for thinking that knowing (attentive) behavior comes after certain other kinds?” And I quite agree with my questioner that this question is to be studied “just as we study anything else.” And considering the number of times that an “instrumental” theory of knowing has been attacked on the ground that it narrows its consideration to the functions of knowledge, it is an interesting variation to find it intimated that it declines to extend its view to take them in.<sup>1</sup> To me—though probably not to those who criticize it—this suggests that the instrumental theory is trying to date knowing, to place it with respect both to its generating conditions and its consequences—or functions.

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<sup>1</sup>“If knowledge be distinct from its conditions, should we not study it as we study anything else, not confining ourselves entirely to the functions of its conditions, but extending our view to take in any possible functions it may itself have?”



## REVIEWS AND ABSTRACTS OF LITERATURE

*Some Problems of Philosophy.* WILLIAM JAMES. New York: Longmans, Green, and Company. 1911. Pp. xii + 231.

This last book of Professor James has been prepared for the press by Dr. H. M. Kallen from two unfinished and unrevised manuscripts left by the author. The first chapter treats of the nature of philosophy, its value, and the objections urged against it. "Philosophy, beginning in wonder, . . . is able to fancy everything different from what it is. It sees the familiar as if it were strange, and the strange as if it were familiar. It rouses us from our native dogmatic slumber and breaks up our caked prejudices. Historically it has always been a sort of fecundation of four different human interests, science, poetry, religion, and logic, by one another" (p. 7). To the objections that philosophy has been dogmatic and unpractical Professor James replies that while this has, in a measure, been so in the past, there is no reason why it should continue so. "One can not see why, if such a policy should appear advisable, philosophy might not end by forswearing all dogmatism whatever, and become as hypothetical in her manners as the most empirical science of them all" (p. 26). As for the objection that philosophy has made no progress, we are reminded that "if every step forward which philosophy makes . . . gets accredited to science, the residuum of unanswered problems will alone remain to constitute the domain of philosophy, and will alone bear her name" (pp. 22-23).

Chapter II. enumerates certain typical problems of metaphysics the discussion of which is to occupy the remainder of the book. Some of them are: "What are 'thoughts' and what are 'things'? What do we mean when we say 'truth'? Is there a common stuff out of which all facts are made? How comes there to be a world at all? Is unity or diversity more fundamental?" (pp. 29-30). Chapter III. deals with the problem of being. Has what exists come into being piecemeal, as the empiricist inclines to believe, or has it always been in its completeness a totality, as the rationalist holds? We can not say: "For all of us alike, fact forms a datum . . . which we can not explain or get behind. It makes itself somehow, and our business is far more with its What than with its Whence or Why" (p. 46).

Chapters IV., V., and VI. discuss percept and concept. The author expounds with even more than his usual clearness and force the position adopted in "A Pluralistic Universe." "The great difference between percepts and concepts is that percepts are continuous and concepts are discrete" (p. 48). "For rationalistic writers conceptual knowledge was not only the more noble knowledge, but it originated independently of all perceptual particulars" (p. 55). "To this ultra-rationalistic opinion the empiricist contention that *the significance of concepts consists always in their relation to perceptual particulars* has been opposed" (p. 57). Needless to say, for the author it is the perceptual flux of particulars that has the primary reality. "The flux can never be superseded. We must carry it with us to the bitter end of our cognitive business, keeping it in

the midst of the translation even when the latter proves illuminating, and falling back on it alone when the translation gives out. 'The insuperability of sensation' would be a short expression of my thesis. To prove it I must show (1) that concepts are secondary formations, inadequate, and only ministerial; and (2) that they falsify as well as omit, and make the flux impossible to understand" (p. 79).

Chapter VII. deals with the One and the Many. "The alternative here is known as that between pluralism and monism. It is the most pregnant of all the dilemmas of philosophy. . . . Does reality exist distributively? or collectively?—in the shape of *eaches*, *everys*, *anys*, *eithers*? or only in the shape of an *all* or *whole*? . . . Pluralism stands for the distributive, monism for the collective form of being" (p. 114). The author then proceeds to explain further the nature of pluralism and to defend it from the misrepresentations of its monistic critics. Various types of monism are noted and the attempt is made to show the natural affinity of monism for rationalism and of pluralism for empiricism. A rationalistic pluralist of the type of Professor Howison would, of course, dissent from the view that pluralism is essentially empiristic.

Chapter VIII. treats of the implications and consequences of monism and pluralism, and in Chapter IX. the most momentous of these implications, the problem of novelty, is introduced and discussed in its several aspects through the remainder of the book. The perceptual life gives overwhelming testimony to the existence of novelty, and that testimony would be convincing were it not that novelty seems to conflict with the principle of continuity of which science is so fond. "With the notion that the constitution of things is continuous and not discrete, that of a divisibility *ad infinitum* is inseparably bound up. This infinite divisibility of some facts coupled with the infinite expansibility of others (space, time, and number) has given rise to one of the most obstinate of philosophy's dialectic problems. Let me take up, in as simple a way as I am able to, the *problem of the infinite*" (pp. 155-6).

The paradoxes involved in the infinite as set forth by Zeno and by Kant are then presented, and to the Kantian antinomies (or rather to the first two of them) the author replies with what is virtually a defense of the "antithesis." A "standing infinite" (as distinguished from a "growing infinite," *i. e.*, from the infinity of a series in process of completion) can be thought of either distributively or collectively, and it is self-contradictory only when thought of collectively. "When we say that 'any,' 'each,' or 'every' one of Kant's conditions must be fulfilled, we are therefore on impeccable ground, even though the conditions should form a series as endless as that of the whole numbers, to which we are forever able to add one. But if we say that 'all' must be fulfilled and imagine 'all' to signify a sum harvested and gathered in, and represented by a number, we not only make a requirement utterly uncalled for . . . but we create puzzles . . . that may require, to get rid of them again, hypotheses as violent as Kant's idealism" (p. 163). "If now we turn from static to growing forms of being, we find ourselves confronted by much more serious difficulties. Zeno's and Kant's dialectic holds good wherever,



before an end can be reached, a succession of terms, endless by definition, must needs have been *successively* counted out. . . . That Achilles should occupy *in succession* 'all' the points in a single continuous inch of space is as inadmissible a conception as that he should count the series of whole numbers 1, 2, 3, 4, etc., to infinity and reach an end" (pp. 170-1). In the solution, based upon the "new infinite," offered by Mr. B. Russell, the author can find no satisfaction. He gives in this connection a critical analysis of the new infinite and its claim to override the whole-part axiom, which is to the reviewer one of the most interesting parts of the book. The essence of the criticism is perhaps best expressed in the following: "Because any point whatever in an imaginary inch is now conceivable as being matched by some point in a quarter inch or half inch, this numerical 'similarity' of the different *quanta*, taken pointwise, is treated as if it signified that half inches, quarter inches, and inches are mathematically identical things anyhow, and that their differences are things which we may scientifically neglect" (p. 179). And after carefully examining Mr. Russell's remedy for the Achilles puzzle, which "lies in noting that the sets of points in question [constituting the respective distances traversed by Achilles and by the tortoise] are conceived as being infinitely numerous in both paths, and that where infinite multitudes are in question, to say that the whole is greater than the part is false" (p. 180), the author concludes that "either we must stomach logical contradiction . . . or we must admit that the limit is reached in these successive cases by finite and perceptible units of approach—drops, buds, steps, or whatever we please to term them, of change, coming wholly when they do come, or coming not at all" (p. 185). In short, Professor James divides the problems of the infinite into two classes: (1) those that pertain to the "standing infinite," (2) those that pertain to the "growing infinite." The first class of problems, exemplified in the first two antinomies, he solves by accepting the position of Kant's "Antithesis." The second class of problems, illustrated in Zeno's "Achilles" and, perhaps, by the last two of the Kantian antinomies, he solves by accepting the finitist position of the "thesis." This dual division of the infinity problems with the correspondingly diverse solutions offered for them, puts the whole matter in a new and interesting light.

In the last chapter the problem of causation is taken up. We get our idea of cause from the perceptual experience of our own activity-situations. Our desires seem to be genuinely creative of novelties in the world. And yet observation and reflection prevent our accepting the perceptual revelation at its face value. For between our conscious activities and the effects which they appear to produce, there intervenes a whole series of physiological and physical events which conceptual science must recognize as genuine links in the causal chain. This failure of the perceptual view "has led to the denial of efficient causation and to the substitution for it of the bare descriptive notion of uniform sequence among events. Thus intellectualist philosophy once more has had to butcher our perceptual life in order to make it 'comprehensible'" (p. 218).

The book closes with the following passage: "If we took these [activ-

ity] experiences as the type of what causation is, we should have to ascribe to cases of causation outside of our own life, to physical cases also, an inwardly experiential nature. In other words, we should have to espouse a so-called 'pan-psyhic' philosophy. This complication, and the fact that hidden brain-events appear to be 'closer' effects than those which consciousness directly aims at, lead us to interrupt the subject here provisionally. Our main result, up to this point, has been the contrast between the perceptual and the intellectualist treatment of it" (p. 218).

It can not but be keenly disappointing to the reader that this uncompleted book should stop just at the threshold of the treatment of the more specifically metaphysical and cosmological problems mentioned in the passage just quoted. It is to be hoped that it may be possible to publish, if only in the form of scattered notes and memoranda, some of Professor James's final conclusions on such subjects as the relation of mind and brain.

Considered as an introductory text in philosophy, this book has in a high degree that quality which I think, more than any other, explains the charm of James's work—the quality of making the reader feel as he reads that he is himself participating in the creative thinking of the author. James speaks here as he has always spoken, not as a master commanding us to accept a completed system of knowledge, but rather as a lover of wisdom who invites us to join with him in the search for truth.

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*An Introductory Psychology.* MELBOURNE STUART READ. Boston: Ginn & Co. 1911. Pp. viii + 309.

In this volume Professor Read presents the results of psychological investigation as seen by the teacher. It is written obviously and admittedly for the most part at second hand, from text-books rather than from original investigations. It selects from the current literature the facts that bear upon the daily life of the student and applies them to an understanding of the ordinary mental operations. In the attainment of this end it may be said to be highly successful.

The chapters cover the usual material in the introductory texts, including a chapter on the nervous system. In the arrangement there is some departure from the usual order which makes necessary anticipation in one chapter of material that is to be discussed in detail in another. Thus attention is treated after perception and the simple affective processes and imagination, including ideational types, after memory. In each case many of the principles involved in the earlier treatment are discussed in full later. A change in arrangement would make the treatment more consistent and concise.

On the whole the selection of material is very good. The statements are accurate and up-to-date. The aim of the book and the character of the reader for whom it was intended naturally make the style somewhat diffuse. There is also rather more about psychology relatively to actual state-



ments of psychological fact than in the ordinary text-book, but that, too, is to be expected and will probably make the book more acceptable to the reader for whom it is intended.

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## JOURNALS AND NEW BOOKS

RIVISTA DI FILOSOFIA. April, 1911. *Sul concetto di verità* (pp. 161-170): B. VARISCO. - Rational truth varies according to a psycho-historical process; absolute truth, determined essentially as such, demands a theistic basis. *Ordine giuridico ed ordine pubblico* (pp. 170-196): ALESSANDRO LEVI. - The concept of public order functions as a political limit of subjective rights. *Il subcosciente* (pp. 197-206): ROBERTO AS-SAGIOLI. - Proposes a stricter terminology to distinguish between the sub-conscious proper, co-conscious or dissociated psychic activity, and latent consciousness. *La valutazione* (pp. 207-216): LUIGI VALLI. - Valuation is not a simple affective-volitional relation between subject and object, but a real or supposed constancy and uniformity of many such relations towards the same object. *E il Buddhismo una religione o una filosofia?* (pp. 217-222): CARLO FORMICHI. - Northern Buddhism reduces itself to a system of ethics based on radical pessimism, and therefore should be considered a philosophy rather than a religion. *Il pluralismo moderno e il monismo* (pp. 223-236): ALESSANDRO CHIAPPELLI. - Modern pluralism, with its absolute heterogeneity, does not account for the monistic tendency found in recent science, nor the necessary integration demanded by the spiritual principle of neo-Hegelianism. *Il contenuto morale della libertà nel nostro tempo* (pp. 237-281): GIUSEPPE TAROZZI. - The moral content of liberty is nowadays checked by unmoral economic freedom and by excessive individualism; it is increased by the growth of altruism and fraternity. *I concetti di fine e di norma in etica* (pp. 282-292): GIOVANNI VIDARI. - Ends and norms have not a constitutive but a heuristic function in ethics. *L'errore* (pp. 293-306): F. C. S. SCHILLER. - Truth is a logical and error an illogical mode of evaluating a conscious situation. (The above papers were presented at the recent International Congress of Philosophy at Bologna.) *Della filosofia del diritto in Italia dalla fine del secolo XVIII alla fine del secolo XIX* (pp. 307-335): F. F. GUELFI.

RIVISTA DI FILOSOFIA. May-June, 1911. *Estema idea logismo* (pp. 337-360): ROBERTO ARDIGO. - A positivistic discussion of the psychic as a possible world after the analogy of nervous activity. *La filosofia italiana al Congresso di Bologna* (pp. 361-366): FEDERIGO ENRIQUES. - Argues that there is a veritable Italian philosophy and that it is not a mere adaptation of foreign thought. *Dio e l'anima* (pp. 367-386): B. VARISCO. - God and the soul are not mere functions of thought, but realities. *La rinascita dell'Hegel e la filosofia perenne* (pp. 387-401): PAOLA



ROTTA. — The renewed interest in Hegel (through Croce, Hibben, Royce, Enriques) shows his system to be the single alternative to the traditional philosophy of transcendence between God and the world. *La filosofia che non vissero* (pp. 402–419): LUIGI VALLI — Discusses three ways to reconcile the ideal and the real—practical, theoretical, mystical. *Infinito e indefinito in Cartesio* (pp. 420–427): ROBERTO MENASCI. — Shows that Descartes considered the world infinite, not indefinite. *Per l'io di Cartesio e di tutti* (pp. 428–432): L. MICHELANGELO BILLIA. — The ego of Descartes is not the grammatical subject, but the psychical self. *Bibliografia filosofica italiana (1910). Recensioni e cenni. Notizie. Atti della Società Filosofica Italiana* (offers the programme of the fourth International Congress of Philosophy at Bologna, at which Professors Fullerton and Creighton were elected commissioners).

Amendola, Giovanni. Maine de Biran: quattro lezioni tenute alla biblioteca filosofica di Firenze nei giorni 14, 17, 21 e 24 Gennaio, 1911. Florence: Casa editrice italiana di A. Quattrini. 1911. Pp. 123.

Blight, Stanley M. *The Desire for Qualities*. London: Henry Frowde. 1911. Pp. xii + 322. 2s.

Botti, Luigi. *L'infinito*. Genoa: A. F. Formigini. 1912. Pp. 529. Lire 6.

Herter, Christian A. *Biological Aspects of Human Problems*. New York: The Macmillan Company. 1911. Pp. xvi + 344. \$1.50.

Wheeler, Charles Kirkland. *Critique of Pure Kant*. Boston: The Arakelyan Press. 1911. Pp. 298. \$1.50.

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## NOTES AND NEWS

THE New York Academy of Sciences and its affiliated societies held their annual dinner, Monday evening, December 18, at the Hotel Endicott. After the dinner, the annual meeting of the academy was held, at the conclusion of which the address of the retiring president, Professor Franz Boas, entitled, "The History of the American Race," was read by the recording secretary, after which Mr. George Borup, a graduate student at Yale University, related a few of his most interesting experiences in connection with Admiral Peary's North Polar Expedition of 1908–09. According to the report of the recording secretary, the Academy held eight business meetings and twenty-seven sectional meetings during the year ending November 30, 1911, at which sixty-one stated papers were presented, classified under eight branches of science, and two public lectures were given at the American Museum of Natural History to the members of the Academy and its affiliated societies and their friends. The academy now has on its rolls 502 active members, including in this number 19 associate members; 120 fellows, 90 life members and 11 patrons, aside from the three members who were elected to fellowship at the meeting. The annual election resulted in the choice of the following

officers for the year 1912: President, Emerson McMillin; vice-presidents, J. Edmund Woodman, Frederick A. Lucas, Charles Lane Poor, R. S. Woodworth; corresponding secretary, Henry E. Crampton; recording secretary, Edmund Otis Hovey; treasurer, Charles F. Cox; librarian, Ralph W. Tower; editor, Edmund Otis Hovey; councillors (to serve three years), Charles P. Berkey and Clark Wissler; members of the finance committee, Emerson McMillin, Frederic S. Lee, and George F. Kunz.

IN accordance with announcements already published, the American Philosophical Association held its eleventh annual meeting at Harvard University, December 27 to 29. There were five sessions, all of which were marked by a full attendance and vigorous discussion. Wednesday evening the Association was entertained at a reception at the Harvard Union. The retiring president, Professor Woodbridge, read his address on "Evolution" on Thursday evening, after which occurred the annual smoker of the Association at the Colonial Club. At the business meeting on Thursday afternoon, it was voted to continue the Committee on Discussion. Officers for the ensuing year were elected as follows: president, Professor Frank Thilly, of Cornell University; vice-president, Professor Norman Kemp Smith, of Princeton University; new members of the Executive Committee, Mr. W. B. Pitkin, of Columbia University, and Professor E. A. Singer, of the University of Pennsylvania. The place of the next meeting of the Association was left to the Executive Committee with power.

THE twentieth annual meeting of the American Psychological Association, held at Washington, December 27 to 29, was more than usually successful from the standpoints of both attendance and interest. The conference on psychology and medical education brought together a number of eminent psychiatrists and psychologists; and while few if any problems were settled, many issues were raised and the pressing need of attention to them was made plainly apparent. The Association authorized the organization of a committee on psychology in its relations with medical education, and President Seashore appointed to this committee Professor W. D. Scott, Professor E. E. Southard, and Professor J. B. Watson. Professor E. L. Thorndike was elected president for the ensuing year. The new members of the Council, to serve for three years, are Professor Margaret F. Washburn and Professor Max Meyer.

DR. G. STANLEY HALL, president of Clark University, delivered the address at the inauguration of Dr. George E. Myers, principal of the State Manual Training Normal School at Pittsburg, Kansas. The subject of the address was "Educational Efficiency."

PROFESSOR JOSEPH JASTROW, of the University of Wisconsin, gave a public lecture, entitled "On the Trail of the Subconscious," at the University on December 4, under the auspices of the University Association for Research and Phi Beta Kappa.

DR. ALEXANDER F. CHAMBERLAIN, hitherto assistant professor, has been promoted to a full professorship in anthropology at Clark University.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE AIMS AND METHODS OF INTRODUCTION COURSES A QUESTIONNAIRE

IN this age, when nearly every discipline has achieved its own particular pedagogy and has become self-conscious and, in a measure, revised in terms of educational method, philosophy has almost escaped. Whether it is because philosophy is not among the high school disciplines, or because it is not popular enough, or because its canons are regarded as all its own and mysteriously apart, it is at any rate true that the pedagogical series yet lacks a "How to Study and Teach Philosophy" to match the history and mathematics methodologies.

It may be that it will do philosophy no earthly good to come to pedagogical self-consciousness; but there is only one way to find out—unless one has a truly shameless aprioristic conscience. And it is with philosophy as it is with most other subjects: the more elementary courses present the most harassing problems and are worthy of first attention. Of these elementary courses, the one that most obtrudes itself, because of its frankly experimental character, is the course whose purpose is avowedly and exclusively introductory. Whether a special course of this sort should be given at all is still a mooted question; and that the aims and methods of such a course are still highly problematical is evidenced by the increasing number of text-books for such courses, each one written largely under the impression that the others are unsatisfactory. Here, at least, is a problem upon which educational method must have its say: it is enlightened pedagogy alone that is to decide whether such a course should be given and what shall be the method of its presentation. Such philosophic pedagogy will be the product mainly of the reflective experience of numbers of teachers. It is important that we know just what that experience is.

Last year the Western Philosophical Association at its spring meeting devoted a special session to the consideration of the aims and



methods of introduction courses in philosophy.<sup>1</sup> Unusual interest was aroused in the problems raised, and it was unanimously decided to pursue the subject further through an investigation which would aim to enlist the active cooperation of a considerable number of teachers of philosophy in representative colleges and universities of this country. For this investigation a committee was appointed.<sup>2</sup> A questionnaire was prepared, through which it was hoped to obtain light with regard to the prevalence of courses specifically introductory, their precise aims, and their methods, both formal and contentual; besides which any other suggestions concerning the pedagogy of introduction courses were invited.

The results of this investigation proved to be thoroughly worth while. Replies were received from most of the leading colleges and universities—from thirty-five institutions in all, twelve of which were state universities. As a rule, the questions were answered in careful detail; and suggestions beyond the answers to specific questions were often appended. The committee concluded its work with a brief report to the Association at its meeting last December. Since then, however, those who had been members of this committee agreed that it might be profitable for some one to go over the replies carefully, with a view to a digest which might be of essential interest to teachers of philosophy in general. This task was handed over to the writer, who herewith presents the results of his review, together with such comments as have seemed to him worth while.

#### I. PREVALENCE OF COURSES IN THE INTRODUCTION TO PHILOSOPHY

More than two thirds of the departments represented in the replies offer a special course in the introduction to philosophy. The omission of the course is not restricted to the smaller colleges; thus, one is led to conclude that its omission is not merely a matter of economy, but of principle. For instance, no course under this specific title is offered at Harvard, Yale, Minnesota, California, or Stanford. Five of the departments that omit the course express themselves as doubtful concerning the advisability of offering it. Two departments have discontinued the course, one because it seemed the least important in a crowded curriculum, and one because it had not proved a successful method. A member of this latter department writes: "It is not and in my judgment never can be a satisfactory method of introducing a student to the subject."

<sup>1</sup> See "The Tenth Annual Meeting of the Western Philosophical Association," reported by Bernard C. Ewer, in this JOURNAL, Vol. VII., pp. 426-428.

<sup>2</sup> This committee consisted of Messrs. Bernard C. Ewer, Edgar L. Hinman, and the writer.

Of course all the institutions represented have introductory courses of some kind. For instance, the chairman of the division of philosophy in one of our most important universities writes that the division offers no single course in the introduction to philosophy, and that it virtually accepts the principle that it is better to provide different methods of approach that may suit men with different interests and equipment. The usual elementary courses serve this purpose.

The important facts to note are that less than one third of the departments represented do not offer a special course in the introduction to philosophy; that the majority of those that fail to offer it express no conviction against it; that of the few that do, only one has tried it; and that nearly all those that omit it make attempts to introduce the student in some other specific and systematic way, a summary account of which will be given later under a discussion of methods.

## II. THE AIM OF A COURSE IN THE INTRODUCTION TO PHILOSOPHY

The answers reveal three main aims: first, the introduction of the student to philosophic thinking of his own; second, to the problems of philosophy; third, to the historic systems. A small number (eight) think the three aims equally fundamental. Two of these think that the order of the fulfilling of these aims should be three, two, one, in the above enumeration. Few are willing to omit any one of these aims, and these few omit the introduction to historic systems, save, in some cases, as a means. Only one makes this latter aim primary. Among the rest, opinion is about evenly divided between the first and second aims as fundamental, with a slight tendency to emphasize philosophic thinking of the student's own. To quote a particularly thoughtful reply from a department in one of our best New England colleges: "I feel strongly that the courses should aim above all else to make *thinkers* out of the men, to make them men able and anxious to think their way through knotty problems, and to give them a desire to get at the truth and an open-mindedness towards any evidence bearing on the problems, and if they get these things, it is a matter of secondary importance *what* they know of philosophy (*i. e.*, how much)—for time will remedy that lack of quantity—and also what philosophy they believe; for success in attaining the results just mentioned as desirable will guarantee the quality of their product."

Of those who emphasize the aim as the introducing of the student to the problems of philosophy, a number lay stress upon the problems "as they present themselves to thinkers to-day" or "in relation to present-day attitudes and tendencies."



One reply adds an aim not named above: the preparation of the student to enter into the spirit of the great literatures.

### III. THE PREFERABLE METHOD FOR INTRODUCING STUDENTS TO PHILOSOPHY

There are six chief methods suggested, which will be discussed in the order of their preference.

1. *Through the History of Philosophy.*—A majority (twenty-four) name the history of philosophy as an indispensable part of the means whereby the student shall be introduced to philosophy, and all but three of these emphasize it as of chief importance. Thirteen of the twenty-four consider the history of philosophy an all-sufficient method, the rest preferring to supplement it in various ways, the way most frequently mentioned being the discussion of the special philosophical problems for their own sakes—especially the problems of the present day, which saves the student from a sense of remoteness and, in some degree, meets the objection of one who writes that he does not prefer the history of philosophy as a method because “it is too likely to detach the student from the problems of present-day civilization.”

Some of the departments that prefer the historical method are among those that were recorded above as having no special course in the introduction to philosophy. A member of a department of this sort, with definite objections to a special introduction course, strongly defends the historical method thus: “Assuming that the proper introductory course is the historical one, it should teach the student to do some philosophical thinking on his own account, and to get possession of himself through familiarizing himself with the fundamental categories of thought as these have emerged in the course of the development of philosophy. I am firmly convinced, as the result of my own experience, that no other way of approach can equal the historical in accomplishing these purposes. The aim is of course never simply to present views that others have held at a certain time, but always to awaken and stimulate the student’s own powers of reflection by helping him to live through the historical movement. Any independent introduction is sure to be partial and one-sided. It is not possible entirely to escape from this danger even by means of the historical course, but at least the student has a better opportunity to get a first-hand acquaintance with the different points of view which have together contributed to bring philosophy to its present stage.”

Some replies emphasize the fact that the vast majority of students come to the study of philosophy with no realization of its prob-

lems. These problems have to be made real, and the history of their actual rise is indispensable for this purpose. That the history may genuinely accomplish this result, it is suggested that the main aim should be to present the more fundamental advances made toward a theory of the world and life in such a way that they seem progressive answers or approximations, rather than mere speculations. One, who has made a signal success of the historical mode of introduction, advises that it is an excellent principle to lay down at the beginning of such a course that the views represented by the historical philosophers were absolutely convincing to those who held them, and that until one is able to feel the plausibility of the doctrines presented, he is in no position to criticize them. "All this means of course that the older philosophies live on in contemporaneous thinking, and that no view, however crude, fails to find its counterpart in the thinking of each one who is undertaking to get possession of himself."

It is almost the unanimous opinion of those who favor the historical method that generous use should be made of the sources: in this connection, the texts of Descartes, Locke, and Berkeley are most frequently mentioned as of special value to the beginner.

The few who advance reasons against the historical method agree in insisting that the history of philosophy should follow and not precede a somewhat systematic treatment of the problems of philosophy. It is objected that unless this is done the student is "too raw" to grasp the significance of the history, which, at any rate, is more valuable to him after he has come face to face with some of the problems for himself.

This leads us to a consideration of the method next in favor.

2. *Through the Problems of Philosophy Considered in Themselves.*—While only six consider the discussion of the problems of philosophy an all-sufficient introduction, it is most frequently mentioned as auxiliary to other methods, especially the historical. One, who favors the historical method for the less mature, is convinced that to those who are equal to it, it proves more stimulating than the historical courses. There is a general insistence that the problems shall be presented in connection with present-day issues and solutions, and that they should first emerge through a Socratic questioning of the student's own attitudes toward life.<sup>8</sup> As a typical reply puts it: "Introduce the student to philosophy through his stock on hand. Begin where the students are and grow into philosophy with them. Drag the problems out of them; they are already infected."

3. *Through Science: Its Generalizations and Presuppositions.*—No one considers this, taken by itself, a good mode of approach for

<sup>8</sup> See article on "Hegel's Conception of an Introduction to Philosophy," by J. W. Hudson, in this JOURNAL, Vol. VI., pp. 345 ff.



the average class, although some think it commendable for students with specifically scientific preparation. Nevertheless, as many as twelve deem it a valuable auxiliary method. The advantages most stressed include that of enabling the teacher to show the inevitableness of the philosophic task and at the same time to distinguish this task in aim and method from that of the sciences. Another merit of the approach through an examination of the presuppositions of science is felt to be the opening of an attractive and easy way to the problems of epistemology.

The objections to this method are more outspoken and specific than to any of the others discussed. They group themselves into four main criticisms. First, it is alleged that students are not at the outset interested in the presuppositions of science; second, their knowledge of the sciences is too limited, except in isolated cases: for the special student in the sciences, who would be qualified, rarely cares anything about philosophy; third, the problems aroused by science soon suffer from abstractness; fourth, to quote the reply of a noted psychologist and authority on the mind of the youth, "This is the very worst method, for it brings precocity and conceit."

4. *Through Literature.*—While only one reply mentions as a purpose the introduction of the student to the great literatures, a little over a third lay some stress upon it as a valuable means among others, especially if used judiciously and discriminatingly. Its specific use, according to several, is to relate the history of philosophy to the total life of a people; according to others, its value is in furnishing material and food for thought along the line of special problems under discussion. One reply mentions as being of worth for introductory purposes a course on philosophical ideas in the English literature of the nineteenth century, starting with Pope for a background. This reply adds that the vast advantage is that the topics mean something to the student at once; moreover, they furnish access to any philosophical question one may care to raise, and the problems need not be carried out any further than the class can stand. The writer of this reply, however, considers such a course as merely auxiliary.

Several feel that the introduction through the great literatures can best be made in conjunction with the history of philosophy. One reply, representative of this conviction, is of such interest and worth that I quote from it at length:

The best "find" in the history of philosophy for me is to begin with Oriental literatures, with enough copies of some of the best things in the departmental library, so that the students can browse and make selections of things they like in their notes. The order used is: Confucius, Mencius, Lao Tse, the Vedas, Brahmanas Upanishads (the six systems, cursorily, in outline), Buddhism, Persia,



Egypt. Then, later, in its proper place, Hebrew literature and Jesus. Among the advantages are: a world-view; the possible historic setting of some of the Greek conceptions; a larger conception of the continuity of life and thought; and, most of all, an escape once for all from the false notion that "philosophy" consists in a lot of "systems" just. Philosophy has certainly drawn more historically, and does still, from ethics, poetry, religion, and the like than from science and logic. Philosophy is man's attempt to formulate to himself his sense of worth (scientific, social, moral, esthetic), or his appreciation of meaning, or feeling of reality, and it is better and easier for students to catch first the verities in the great literatures of philosophy that are struggling to get themselves said, and then to formulate them into systematic statements so far as possible. It is a shame to have students break their heads over conceptions and systems and imagine that is philosophy the first thing. It is a piece of good luck if they get through it all with a taste left for philosophy.

A representative of one of our larger philosophy departments, who thinks that most modern "introductions" are written primarily for future special students of philosophy, and that they are apt to be too technical for the average student, expresses the desire for a source-book of good literary material. With many others who have had practical experience with the problem, he feels that the difficulty is that most of our philosophy is not simple and interesting enough ("not literature enough") for the beginning student; while most literature is not philosophic enough—or is so diffuse that a beginner loses sight of the philosophical problem.

Apart from the objection on the part of some that literature is "too thin" to introduce to philosophy with much success, the difficulty is raised that most of those who affect literature seem to be usually devoid of philosophic interest. Another still more important objection is that while it is easy to get students to take literary courses in philosophy, they do not produce any adequate preparation for more advanced work.

One's total impression after reading the replies under this head is that we have not paid enough attention to the use of the great literatures as an auxiliary mode of introduction to evaluate it adequately, and that here is a field in which some one might do some really needful intensive work with regard to both sources and methods.

5. *Through Kulturgeschichte*.—Several, who prefer a historical approach, do not care to narrow the student to the history of technical philosophy, but wish vitally to relate that history to *Kulturgeschichte*, i. e., the evolution of science, morality, art, religion, and political life,—in short, the history of institutions. This is to prevent the student from getting the impression that, either historically or systematically, "philosophy is simply a clever and surprising species of intellectual gymnastics performed *in vacuo*," and also

to lead him to philosophy through familiar highways. Some, who do not prefer the history of philosophy at all, or only secondarily, as a mode of introduction, nevertheless are convinced that philosophy can best be made to emerge from a consideration of the metaphysical implications of the history of institutions. Some very thoughtful replies were received on this somewhat untried method—replies that lead one to feel that, in the right hands, it would be highly successful, at least in a supplementary way. In order to give a more detailed idea of this method, I quote from the reply of one who has tried it and made a success of it in connection with the history of philosophy proper:

This introductory course should deal with the "natural" systems of peoples and ages rather than with the "artificial" systems developed by exceptional historic thinkers. A recent article in the JOURNAL<sup>4</sup> describes what I try to make my general history of philosophy—a history of the ideals of peoples, their origin and significance (a) to the peoples themselves and (b) to succeeding ages and peoples, especially to us. I always encourage the point of view of *people*, and even take up their problems for systematic discussion so far as the class seem inclined to it and time permits. In general, the relation of philosophical movements to the life of the times which produced them needs emphasis in an introductory course more than the content (conceptual or doctrinal) of the movements themselves. I agree with you that the philosophy involved in history is the best subject-matter for this introductory course, and have pursued it to such an extent in the past that the historical department has sometimes asked what I'm teaching my students! I emphasize everything bearing on the history of institutions and social organization—science in relation to industry, political organization, law, social customs and standards of moral judgment, the medieval church, educational devices and methods, historical events such as the wars with Philip, the conquests of Alexander, the fall of Rome with barbarian invasions, the rise and significance of the Holy Roman Empire, etc., using all the information students gather from other courses—so far as possible.<sup>5</sup>

6. *Through the Religious Interest.*—The experience of several leads them to believe that the best way to a realization of the meaning of philosophy is through the religious interest. Through this, they find, is best reached the life and thinking of the majority. Of the six who mention this mode of approach, none rely upon it alone. Five combine it with the historic, scientific, and literary approaches. One finds that "comparing the religious with the scientific point of view creates thinking and forces the student to see the necessity for intelligent opinion."

7. *Other Methods.*—Two other modes of approach are named. Three mention logic without comment and one expresses a preference

<sup>4</sup>"An Introduction to Philosophy through the Philosophy in History," by J. W. Hudson, in this JOURNAL, Vol. VII., pp. 569 ff.

<sup>5</sup>See also "The Aims of an Introductory Course in Philosophy," by Edgar L. Hinman, in this JOURNAL, Vol. VII., pp. 561 ff., an article in general sympathy with the above method.



for the problems of sociology as revealing the necessity for a rational basis, and epistemology as showing the possibility and character of such a basis. Three mention psychology as a desirable prerequisite for the introductory course. Several feel that the mode of approach depends very largely upon the teacher, or upon the character of the students, or upon both.

An attempt was made by the writer to discover whether those who agree concerning the true aim of an introduction course tend toward any agreement in method. No such tendency was discernible, except in the instance of those who find that all the aims named are to be reckoned with, in which case the question of ends and means was merely relative and a matter of emphasis solely.

#### IV. THE USE OF A TEXT-BOOK IN INTRODUCTION COURSES

Only seven of the thirty-five who replied deem a text-book undesirable, and only three of these would rely wholly upon lectures and discussions. The other four prefer assigned readings from carefully selected sources. One writer objects to the use of a single text on the ground that it supplies the student with answers, so that he does not do the thinking for himself that is essential to *his* philosophizing. One department of a well-known eastern university writes that it uses none of the elementary text-books written especially for the classroom.

Those who do rely wholly upon lectures and discussions feel that a book of any sort gets in the way of the student's own thinking, one suggestion being that the student's own experience is a sufficient text to yield him a modicum of first-hand philosophic thinking.

But the conviction of the majority is unequivocally in favor of some kind of text, a conviction which, in general, is based upon the feeling that immature students in philosophy need a basis for discussion or "center of operations"; that young students are used to quite definite tasks and require them; and that the text best directs the task and steadies the student's work. One reason given in defense of a text is that students are helped by models to imitate critically. A number insist that the text should be used only in connection with sources. Many suggest (what has fortunately become a truism) that the text-book be used as a basis not of mere recitation but of active discussion.

It is interesting to note that while the majority are in favor of the use of a text-book, over one third of these complain that they have found none that is satisfactory, although they have tried a number of the more popular introductions. The criticisms are not



explicit enough to be of any final value. Some think the current text-books too technical; others regard them as "not intelligible and concrete enough." One reply suggests what is probably very near the truth: that, on account of the nature of the course, each teacher would have to write his own text-book if he wishes one thoroughly satisfactory to himself. One teacher practically follows this suggestion by conducting the course through the aid of a syllabus in the form of questions, which aims to bring the student in contact with the sources, to guide his reading, and to prepare him to assist in class discussion by suggesting problems.

#### V. CONCLUSION

First of all, the result of this questionnaire should not be taken for more than it purports to be—the more or less off-hand contribution of thirty-five teachers of philosophy to a problem so little discussed as yet that few have attained to critical convictions on the subject. Yet, while the answers give results that obviously are not final, they are of immense suggestive value both for those to whom the introduction course is a real problem and for those who wish a basis for further investigation. We have not yet fully realized how much might be gained for philosophy by the active and intelligent cooperation of its teachers, although our journals and associations are gradually awakening us to the new demands and opportunities of conference.

There are two points upon which most of the replies agree, no matter what the emphasis of aim or method: one point relates to a pedagogical principle and the other to what philosophy should be made to mean to the student. First, most emphasize the imperative need of getting at the student's point of view and of making philosophy emerge from that, instead of from any external *ipsissima verba*. To this end, much emphasis is laid upon generous and wisely directed discussion, the subjects of which shall be the problems of the class—always these rather than those of the teacher. To this same end, we are warned against "talking over the heads of our hearers" and are told that the one thing needful pedagogically is close personal intercourse between the student and the instructor, in order to get at each man's mind and to stimulate him to the formation of a critical opinion of his own. Second, the replies emphasize the fact that philosophy shall be so taught that we shall avoid the danger of making it seem what too often it does seem—a thing of futility, an empty speculation. The problems of philosophy are to be made real, and for this purpose it is well constantly to refer to the vital issues of the present. Thus will philosophy be made a living thing

and assume its rightful place as part of the inmost life of him who is so fortunate as to find it.

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### THE NEW REALISM AND THE OLD<sup>1</sup>

THE problems of philosophy fall naturally into four groups: (1) Problems of knowing; (2) problems of being; (3) problems of acting; (4) problems of feeling. The subjects with which these problems deal comprise, respectively, epistemology, metaphysics, ethics, and esthetics. Epistemology is itself concerned with two fairly distinct types of problems: (1) the functional problem of the criteria of truth and the way of attaining it; (2) the structural problem of the nature of knowledge and the relation of the knower to the known. Discussion of the functional problem of epistemology has given us such doctrines and attitudes as mysticism, rationalism, empiricism, and pragmatism, which are so many theories as to how we should get our knowledge and how we should test its truth. Discussion of the second or structural problem of epistemology has given us the doctrines of naïve realism, of dualistic realism, and of subjectivism, which are so many theories as to the nature of the relation of a knower to the objects known. These three epistemological theories, or rather types of theory (for there are, as we shall see, several variations of each), may be discussed pretty much on their own merits and in relative independence not only of metaphysical, ethical, and esthetical issues, but even of the epistemological problems of the methodological or functional kind. In this paper I shall undertake to define the theories of naïve realism, dualism, and subjectivism, as they appear to me, and to show how the difficulties inherent in the first theory have led to the adoption of the second, and how that has been given up for the third, the futility of which, in its turn, has led to a revival of the first.

The theory of naïve realism is the most primitive of the theories under discussion. It conceives of objects as directly presented to consciousness and being precisely what they appear to be. Nothing intervenes between the knower and the world external to him. Objects are not represented in consciousness by ideas; they are themselves directly presented. This theory makes no distinction between seeming and being; things *are* just what they *seem*. Consciousness is thought of as analogous to a light which shines out through the

<sup>1</sup> Read at the tenth annual meeting of the American Philosophical Association, December, 1910.



sense organs, illuminating the world outside the knower. There is in this naïve view a complete disregard of the personal equation and of the elaborate mechanism underlying sense perception. In a world in which there was no such thing as error, this theory of the knowledge relation would remain unchallenged; but with the discovery of error and illusion comes perplexity. Dreams are probably the earliest phenomena of error to arouse the primitive mind from its dogmatic realism. How can a man lie asleep in his bed and at the same time travel to distant places and converse with those who are dead? How can the events of the dream be reconciled with the events of waking experience? The first method of dealing with this type of error is to divide the real world into two realms, equally objective and equally external, but the one visible, tangible, and regular, the other more or less invisible, mysterious, and capricious. The soul after death, and sometimes during sleep, can enter the second of these realms. The objectified dreamland of the child and the ghostland of the savage are the outcome of the first effort of natural realism to cope with the problem of error. It is easy to see, however, that this doubling up of the world of existing objects will only explain a very limited number of dream experiences, while to the errors of waking experience it is obviously inapplicable. Whenever, for example, the dream is concerned with the same events as those already experienced in waking life, there can be no question of appealing to a shadow world. Unreal events that are in conflict with the experience of one's fellows, and even with one's own more inclusive experience, must be banished completely from the external world. Where, then, shall they be located? What is more reasonable than to locate them inside the person who experiences them? for it is only upon him that the unreal object produces any effect. The objects of our dreams and our fancies, and of illusions generally, are held to exist only "in the mind." They are like feelings and desires in being directly experienced only by a single mind. Thus the soul, already held to be the mysterious principle of life, and endowed with peculiar properties, transcending ordinary physical things, is further enriched by being made the habitat of the multitudinous hosts of non-existent objects. Still further reflection on the phenomena of error leads to the discovery of the element of relativity in all knowledge, and finally to the realization that no external happening can be perceived until after it has ceased to exist. The events we perceive as present are always past, for in order that anything may be perceived it must send energy of some kind to our sense organs, and by the time the energy reaches us the phase of existence which gave rise to it has passed away. To this universal and necessary temporal aberration of per-



ceived objects is added an almost equally universal spatial aberration. For all objects that move relatively to the observer are perceived not where they are when perceived, but, at best, where they were when the stimulus issued from them. Not only may some of the stars which we see shining each night have ceased to shine years before we were born, but even the sun which we see at a certain place in the sky is there no longer. The present sun, the only sun that now exists, we never see. It fills the space that to us appears empty. Its distance from what we see as the sun is measured by the distance through which the earth has turned on its axis in the eight minutes which it has taken the sun's light to reach our eye. And in addition to these spatial and temporal aberrations of perception we know that what we perceive will depend not only upon the nature of the object but on the nature of the medium through which its energies have passed on their way to our organism; and also upon the condition of our sense organs and brain. Finally, we have every reason to believe that whenever the brain is stimulated in the same way in which it is normally stimulated by an object, we shall experience that object even though it is in no sense existentially present. These many undeniable facts prove that error is no trivial and exceptional phenomenon, but the normal, necessary, and universal taint from which every perceptual experience must suffer.

It is such considerations as these that have led to the abandonment of naïve realism in favor of the second theory of the nature of knowledge. According to this second theory, which is exemplified in the philosophies of Descartes and Locke, the mind never perceives anything external to itself. It can perceive only its own ideas or states. But as it seems impossible to account for the order in which these ideas occur by appealing to the mind in which they occur, it is held to be permissible and even necessary to infer a world of external objects resembling to a greater or less extent the effects, or ideas, which they produce in us. What we perceive is now held to be only a picture of what really exists. Consciousness is no longer thought of as analogous to a light which directly illumines the extra-organic world, but rather as a painter's canvas or a photographic plate on which objects in themselves imperceptible are represented. The great advantage of the second or picture theory is that it fully accounts for error and illusion; the disadvantage of it is that it appears to account for nothing else. The only external world is one that we can never experience, the only world that we can have any experience of is the internal world of ideas. When we attempt to justify the situation by appealing to inference as the guarantee of this unexperienceable externality, we are met by the difficulty that the world we infer can only be made of the matter of experience, *i. e.*,

can only be made up of mental pictures in new combinations. An inferred object is always a perceptible object, one that could be in some sense experienced, and, as we have seen, the only things that according to this view can be experienced are our mental states. Moreover, the world in which all our interests are centered is the world of experienced objects. Even if, *per impossibile*, we could justify the belief in a world beyond that which we could experience, it would be but a barren achievement, for such a world would contain none of the things that we see and feel. Such a so-called real world would be more alien to us and more thoroughly queer than were the ghostland or dreamland which, as we remember, the primitive realist sought to use as a home for certain of the unrealities of life.

It seems very natural at such a juncture to try the experiment of leaving out this world of extra-mental objects, and contenting ourselves with a world in which there exist only minds and their states. This is the third theory, the theory of subjectivism. According to it, there can be no object without a subject, no existence without a consciousness of it. To be, is to be perceived. The world of objects capable of existing independently of a knower (the belief in which united the natural realist and the dualistic realist) is now rejected. This third theory agrees with the first theory in being epistemologically monistic, *i. e.*, in holding to the presentative rather than to the representative theory of perception, for, according to the first theory, whatever is perceived must exist, and according to the present theory whatever exists must be perceived. Naïve realism subsumed the perceived as a species under the genus existent. Subjectivism subsumes the existent as a species under the genus perceived. But while the third theory has these affiliations with the first theory, it agrees with the second theory in regarding all perceived objects as mental states—ideas inhering in the mind that knows them and as inseparable from that mind as any accident is from the substance that owns it.

Subjectivism has many forms, or rather, many degrees. It occurs in its first and most conservative form in the philosophy of Berkeley. Descartes and Locke, and other upholders of the dualistic epistemology, had already gone beyond the requirements of the picture theory in respect to the secondary qualities of objects. Not content with the doctrine that these qualities as they existed in objects could only be inferred, they had denied them even the inferential status which they accorded to primary qualities. The secondary qualities that we perceive are not even copies of what exists externally. They are the cloudy effects produced in the mind by combinations of primary qualities, and they resemble unreal objects in that they are *merely* subjective. The chief ground for this element of subjectivism in the



systems of dualistic realism immediately preceding Berkeley, was the belief that relativity to the percipient implied subjectivity. As the secondary qualities showed this relativity, they were condemned as subjective. Now it was the easiest thing in the world for Berkeley to show that an equal or even greater relativity pertained to the primary qualities. The perceived form, size, and solidity of an object depend quite as much upon the relation of the percipient to the object as do its color and temperature. If it be axiomatic that whatever is relative to the perceiver exists only as an idea, why, then, the primary qualities which were all that remained of the physical world could be reduced to mere ideas. But just here Berkeley brought his reasoning to an abrupt stop. He refused to recognize that (1) the *relations between* ideas or the order in which they are given to us, and (2) the *other minds* that are known, are quite as relative to the knower as are the primary and secondary qualities of the physical world. I can know other minds only in so far as I have experience of them, and to infer their independent existence involves just as much and just as little of the process of objectifying and hypostatizing my own ideas as to infer the independent existence of physical objects. Berkeley avoided this obvious result of his own logic by using the word "notion" to describe the knowledge of those things that did not depend for their existence on the fact that they were known. If you had an *idea* of a thing—say of your neighbor's body—then that thing existed only as a mental state. But if you had a *notion* of a thing—say of your neighbor's mind—then that thing was quite capable of existing independently of your knowing it. Considering the vigorous eloquence with which Berkeley inveighed against the tendency of philosophers to substitute words for thoughts, it is pathetic that he should himself have furnished such a striking example of that very fallacy. In later times Clifford and Pearson did not hesitate to avail themselves of a quite similar linguistic device for escaping the solipsistic conclusion of a consistent subjectivism. The distinction between the physical *objects* which as "constructs" exist only in the consciousness of the knower and *other minds* which as "ejects" can be known without being in any way dependent on the knower, is essentially the same both in its meaning and in its futility as the Berkeleian distinction of idea and notion. For the issue between realism and subjectivism does not arise from a psycho-centric predicament—a difficulty of conceiving of objects apart from any consciousness—but rather from the much more radical "ego-centric predicament"—the difficulty of conceiving known things to exist independently of my knowing them. And the poignancy of the predicament is quite independent of the nature of the



object itself, whether that be a physical thing like my neighbor's body, or a psychical thing like my neighbor's mind.

Some part of this difficulty Hume saw and endeavored to meet in his proof that the spiritual substances of Berkeley were themselves mere ideas; but Hume's position is itself subject to two criticisms: First, it does not escape the ego-centric predicament—for it is as difficult to explain how one "bundle of perceptions" can have any knowledge of the other equally real "bundle of perceptions" as to explain how one "spirit" can have knowledge of other "spirits." Second, the Humean doctrine suffers from an additional difficulty peculiar to itself, in that by destroying the conception of the mind as a "substance," it made meaningless the quite correlative conception of perceived objects as mental "states." If there is no substance there can not be any states or accidents, and there ceases to be any sense in regarding the things that are known as dependent upon or inseparable from a knower.<sup>2</sup>

Passing on to that form of subjectivism developed by Kant, we may note three points: (1) A step back toward dualism, in that he dallies with, even if he does not actually embrace, the dualistic notion of a *ding-an-sich*, a reality outside and beyond the realm of experienced objects which serves as their cause or ground. (2) A step in advance of the subjectivism of Berkeley and Hume, in that Kant reduces to the subjective status not merely the *facts* of nature but also her *laws*, so far, at least, as they are based upon the forms of space and time and upon the categories. (3) There appears in the Kantian system a wholly new feature which is destined to figure prominently in later systems. I mean the dualistic conception of the knower, as himself a twofold being, transcendental and empirical. It is the transcendental or noumenal self that gives laws to nature, and that owns the experienced objects as its states. The empirical or phenomenal self, on the other hand, is simply one object among others, and enjoys no special primacy in its relation to the world of which it is a part.<sup>3</sup>

The post-Kantian philosophies deal with the three points just mentioned in the following ways: (1) The retrograde feature of Kant's doctrine—the belief in the *ding-an-sich*—is abandoned. (2) The step in advance—the legislative power conferred by Kant upon the self as knower—is accepted and enlarged to the point of viewing consciousness as the source not only of the *a priori* forms of relation, but of all relations whatsoever. (3) The doctrine of the dual self is

<sup>2</sup>For elaboration and proof of this, see the article by the author entitled "A Neglected Point in Hume's Philosophy," *Philosophical Review*, January, 1905.

<sup>3</sup>Cf. what Kant called his refutation of (Berkeleyan) idealism.

extended to the point of identifying in one absolute self the plurality of transcendental selves held to by Kant, with the result that our various empirical selves and the objects of their experience are all regarded as the manifestations or fragments of a single perfect, all-inclusive, and eternal self. But it is not hard to see that this new dualism of the finite and the absolute self involves the same difficulties as those which we found in the Cartesian dualism of conscious state and physical object. For either the experience of the fragment embraces the experiences of the absolute or it does not. If the former, then the absolute becomes knowable, to be sure, but only at the cost of losing its absoluteness and being reduced to a mere "state" of the alleged fragment. The existence of the absolute will then depend upon the fact that it is known by its own fragments, and each fragmentary self will have to assume that its own experience constitutes the entire universe—which is solipsism. If the other horn of the dilemma be chosen and the independent reality of the absolute is insisted upon, then it is at the cost of making the absolute unknowable, of reducing it to the status of the unexperienceable external world of the dualistic realist. The dilemma itself is the inevitable consequence of making knowledge an internal relation and hence constitutive of its objects. Indeed a large part of the philosophical discussion of recent years has been concerned with the endeavor of the absolutists to defend their doctrine from the attacks of empiricists of the Berkeleian and Humean tradition in such a way as to avoid equally the Scylla of epistemological dualism and the Charybdis of solipsism. But, as we have seen, the more empirical subjectivists of the older and strictly British school are open to the same criticism as that which they urge upon the absolutists, for it is as difficult for the Berkeleian to justify his belief in the existence of other spirits, or the phenomenalist follower of Hume his belief in bundles or streams of experience other than his own, as for the absolutist to justify those features of the absolute experience which lie beyond the experience of the finite fragments.

And now enter upon this troubled scene the new realists, offering to absolutists and phenomenologists impartially their new theory of the relation of knower to known. On this point all subjectivists look alike to them, and they make no apology for lumping together for purposes of epistemological discussion such ontologically diverse theories as those of Fichte and Berkeley, of Mr. Bradley and Professor Karl Pearson. Indeed, it can not be too emphatically stated that the theory in question is concerned primarily with this single problem of the relation of knower to known. As such, it has no direct bearing on other philosophical issues, such as those of monism and pluralism, eternalism and temporalism, materialism and spiritu-



alism, or even pragmatism and intellectualism. Of course this does not mean that those individuals who defend the new realism are without convictions on these matters, but only that as a basis for their clearer discussion it is first of all essential to get rid of subjectivism.

Like most new things this new theory is in essentials very old. To understand its meaning it is necessary to go back beyond Kant, beyond Berkeley, beyond even Locke and Descartes—far back to that primordial common sense which believes in a world that exists independently of the knowing of it, but believes also that that same independent world can be directly presented in consciousness and not merely represented or copied by “ideas.” In short, the new realism is almost identical with that naïve or natural realism which was the first of our three typical theories of the knowledge relation; and as such, it should be sharply distinguished from the dualistic or inferential realism of the Cartesians.

Now the cause of the abandonment of naïve realism in favor of the dualistic or picture theory was the apparently hopeless disagreement of the world as presented in immediate experience with the true or corrected system of objects in whose reality we believe. It follows that the first and greatest problem for the new realists is to amend the realism of common sense in such wise as to make it compatible with the universal phenomenon of error and with the mechanism of perception upon which that phenomenon is based and in terms of which it must be interpreted.

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## DISCUSSION

### OPPOSITION AS CONDITION OF CONSCIOUSNESS

IN No. 16 of this volume Professor Walter B. Pitkin was kind enough to give a critical abstract of five essays published by me in the last years, all expounding one system of thought, based on the principle that opposition is the spring of consciousness. I feel very thankful to Professor Pitkin for the pains he took in drawing a very vivid and generally true picture of the line of thought I pursued, and I am glad that he finds me at least on the trail to truth, although my path diverges by a large angle from the psychological highroad.

Indeed Professor Pitkin raises only one objection to the system contained in my writings, although, to be sure, that objection is



directed against its very foundation. My critic says that either I mean by opposition that specific kind which exists between antithetical pairs, as for instance light and dark, or yellow and blue, as he generously puts it to make my situation easier, or that I understand opposition only in that broader sense of mutual exclusion which exists, for instance, between all colors. In the first case I must succumb to the difficulty that to most objects an antithetical pair can not be designated; in the second, opposition could not carry the system built upon it, because "anything could be a sufficient precondition for the experiencing of anything else"; "a sound, or a flavor, or a perfume, or any conceivable object with three sides, would all be equally efficient as 'contraries' with regard to a triangle."

Professor Pitkin takes into consideration both branches of this alternative, but he decidedly represents me as having spoken in the former sense. Indeed, according to him, I assume "a polarizing tendency in the world-stuff itself, which gives rise to all intellectual distinctions," and he asks me to inform my readers (who would otherwise not be convinced) as to just what qualities (physical objects) do operate in antithetical pairs to effect consciousness.

I think, however, and I am sorry that I must say so, that it is clearly the second sense of Professor Pitkin's alternative in which the term "opposition" is used in my writings. In formulating against current psychology the charge mentioned by Professor Pitkin, that out of isolated perceptions (viz., such as have not a content of opposition against other perceptions) induction, experience of certain facts having certain consequences, and rational action can not arise, I manifestly take opposition in the sense of mutual exclusion only, since to establish such a charge no conception of polar antithesis is necessary. Indeed, in the very quotation which Professor Pitkin, in elucidating this charge, kindly takes from my writings, the terms *Gegensatz* and *Ausschliessung* are used together, separated only by a comma, with the precise intention of precluding the interpretation in the sense of polar antithesis—the former term, however, being generally preferred in my writings in order to demonstrate that at the root of consciousness there is dynamic opposition (which, of course, is not identical with "polar antithesis"). If this interpretation is given to my principle, then it does follow that anything is a sufficient precondition for the experiencing of anything else. But this is just my opinion. Anything is, however, according to the theory I propose, the sufficient precondition for the experiencing of anything else with regard only to that element of the latter which is contained in it on that ground, that *fundamentum divisionis*, on which the two are opposed to, or exclude, each other. So a sound or

a flavor or a perfume makes us experience a (seen) triangle only as light, a lighting, or visible object.

Let us suppose a baby just born in a room free from sound and odor; let us exclude for simplicity's sake all tactual and gustatory, etc., impressions also, and let us suppose that a shining triangle is held before his eyes. The light of the triangle is not light to him in the same sense as it is to us, as, namely, one sort of thing; but it is to him *the* something, the stirring, the powerful, as opposed to the nothing, the quiet, the weak (namely, the dark), which environed him in his mother's womb, unperceived then because not yet opposed to the impression of light, but now, in consequence of the actual opposition, remembered. Such a baby would have no experience of light as distinguished from something. Let us now suppose that later a noise arises in his neighborhood. He takes notice of "something again," which is "not the same," however, as that perceived until now, and he arrives at the notion of light or the visible as distinguished from another something.<sup>1</sup> To experience the visible as a triangle, the opposition between planes having different outlines, or at least the opposition between numbers, must be brought to his perception; or, let us say, with regard to this example, more generally to his mind, as mathematical and geometrical conceptions can be formed *a priori*. But this again does not mean a polar antithesis, but only a mutual exclusion on another ground. Between specific opposition (polar antithesis) and chaotic exclusion, which Professor Pitkin opposes to each other, there is an intermediate sort of relation which is not restricted to pairs and might be called specific exclusion.

To sum up: Everybody is aware that rational action requires a systematical knowledge of things, their division into classes, the division of every such class into sub-classes, and so on. What I assert is that *consciousness is from the very beginning consciousness of system*,

<sup>1</sup> I foresee that readers unfamiliar with the writings here spoken of will find great difficulty in understanding the asserted difference between perception of light as perception of the something and its perception as perception of light. To remove this difficulty, I am obliged to refer to my writings, where, especially in "Das Beharren, etc.," I try to show throughout the whole psychology how such differences work. Here I can only say that this difference is like that between perception of a tone simply as a tone and its perception as a high or a low tone. This difference, and the assertion that if only one tone (and silence) has impressed the subject so far in his lifetime, then only the former perception is possible to him, will perhaps more easily find acceptance than the corresponding assertion with regard to light. And I can further point to the fact that, whereas in the case when light would be the only (positive) sensation which has impressed a subject, it would give him, as was said, the perception of the powerful; in cases of other (positive) sensations also having already been experienced, this light would give, on the contrary, the perception of the tenderest, finest thing of all.



which only develops in the course of life; consciousness not only of "this," but also of "therefore not being that."

It is this idea which leads to that psychophysical theory (I can not allow that it is a "hypothesis" only) which Professor Pitkin somewhat approvingly reviews.

The opposition, therefore, from which this theory derives consciousness, is nothing else but what other psychological theories call difference of stimuli. These theories, however, do not find the actions of different stimuli or their residua leading to dynamical conflicts in the subject,<sup>2</sup> and they do not see in such conflicts the very condition of consciousness, as I do. This is my answer to the request for information with which Professor Pitkin closes his review.

I may perhaps be allowed to mention that W. Polowzow, after having rather favorably reviewed my treatise "Das Beharren," etc.,<sup>3</sup> later, in a criticism of "Die Stelle des Bewusstseins," etc.,<sup>4</sup> finds the same difficulty with my theory as Professor Pitkin. Fräulein Polowzow mentions that I oppose to "seeing a dog" "seeing no dog," and thinks that if this example is taken as typical of the sense of opposition in my works, my theory of the origin of consciousness is reduced *ad absurdum*. Now, I can not see why. "Seeing a dog" means seeing a particular form. What I maintain is that consciousness of a form is impossible without more than one form being known to the subject, and that consequently the consciousness of the form called a dog can not arise in a subject without his knowing at least one other form not called a dog. This may be false, but I can not see why it should be absurd.

I can not see the absurdity, although this agreement between two (by no means all) of my critics induced me to think the matter over seriously once more. Their agreement seems to me to arise simply from the influence of current psychology, which prevents those used to it from seeing the dependence which I assert. Indeed I know of only one systematic treatise on psychology (the "Leitfaden" of Th. Lipps) which mentions negative perceptions, such as that of seeing no dog, although such perceptions manifestly form the very starting-point of thought. But the psychology of to-day might justly be called the science of mind apart from its coherence.

I close by expressing once more my best thanks to Professor Pitkin.

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<sup>2</sup> Th. Lipps ("Von Fühlen, Wollen und Denken," second edition) does derive dynamical conflicts in the subject from this difference, but at the same time he calls this difference opposition, *Gegensatz, Gegensatzlichkeit*, just as I do.

<sup>3</sup> *Zeitschrift für Psychologie*, Bd. 55, S. 154, 1910.

<sup>4</sup> *Ibid.*, Bd. 58, S. 388, 1911.



## REVIEWS AND ABSTRACTS OF LITERATURE

*The Presentation of Reality.* HELEN WODEHOUSE. Cambridge: University Press. 1910. Pp. xii + 160.

This essay is intended as a description of knowledge from the point of view of a philosophical psychology. Inspection of the experience called knowledge, or consciousness, finds it a real presentation of object to subject. Many objects are not spatial—*e. g.*, "objectives" (the contents of affirmative and negative judgments), connections of fact, other people's minds—hence the object's presence to the subject, in knowledge, is not essentially a spatial relation. Neither is presence in general essentially spatial. "A real thing, whatever else it may be, is the method, or necessity, or law, in a group of events. The laws of its nature govern the behavior of other objects in relation to it, and our own experience in respect of it. . . . Now 'presence' . . . can only mean the actuality of government by the law-group in question. . . . 'I see Birmingham' means that the nature of Birmingham is expressing itself in my perceptual experience, governing the happenings there; and the contemplation of a thing in memory, in imagination, or in the most elaborate thought means exactly the same kind of fact" (pp. 70-72).

The logical "difference" that makes presence knowledge is a striving to increase or diminish the *extent* of the presence. Consciousness is presence with interest.

To deny that knowledge is such real presentation is to deny that knowledge has content, unless "content" means something other than "datum," the "given," the "*present*," in knowledge, which no subjectivist says, or could think. And only by a meaningless distinction between content and what is contained can presentation in knowledge be thought to imply absence from knowledge, by a self-perpetuating recurrence of mediating relationships between content and container.

It is impossible that content, an actualization of law, should be other than the very law, the very object; and again impossible that such object should be any content entirely. "No manifestation of the object exhausts the object; the latter can always expand its expression and tell us more and more" (p. 52). "In introspection . . . we make the content of a given act of apprehension into the object of another act" (p. 20); but not even in introspection does content exhaust object. *Any* knowledge is a process, a gradual discovery. However we fix our limits, what is within them can develop internally.

No one has yet offered a satisfactory account of the nature of an idea, and the author of this essay is convinced "that there are no such things as ideas. Contents and objects alike exist outside my body. . . . 'Contents' may be admirable tools if we can keep them free from the taint of the old 'ideas,' and can remember that the things which enter the mind, and which therefore are partly contained in our mind, are the same things that exist outside our body in the ordinary physical world" (p. 18). "It is literally true to say that the past or the future can be

'present with me,' or that the friend I think of has 'entered into my thought' or has been 'much in my mind.' . . . I can no more think of a thing which is outside thought than I can see a thing which is out of sight" (pp. 71 and 72). ("Literally," if these terms, usually spatial, are given their deeper, extra-spatial meaning.)

Knowledge is evidently not a static, but an active relation. The object operates on the subject. The subject strives to alter the extent of the operation; the subject reacts receptively. The verb "know," whose grammar implies that the subject is initially or positively active, lends itself to the false subjectivistic conception that knowing is constructing reality. It is the object that is initially and positively active. "Even if the whole world grows by means of our interest; even if nothing can exist except on condition that it is known; . . . even in deliberate fiction or assumption, where we do wilfully create the objects that we apprehend, the creation is not the apprehension. . . . Whatever creates the reality that we find, it is not the finding, as such, that creates it, and it is this finding that constitutes knowledge" (pp. 7 and 8).

If judgment is a kind of knowledge different from other apprehension, it is, like all apprehension, a case of "finding something there." It is more, no doubt; but, therefore, it is not pure knowledge. The modality of a judgment depends on the degree of limitation of content; the strength of conviction is equally a quality of the object, not at all of the subject. It depends on the steadiness of the content. "We can not more or less receive except in the sense that we can receive more or less."

In all levels or departments of knowledge the object may be the same. The content is different. The object, set in a clear field in contemplation, unfolds before us in the contents of consciousness. Where first we found only sense-contents, we presently find shape and position and likeness and distinction, and connections with all the world, and relations on which inferences rest. We "think the thing out." In a sense, the object of every knowledge is the universe entire; limitation of object depends on interest. In marginal sensations or images (where interest approaches the vanishing-point), and in exhaustive philosophical investigation, the *object* is the unlimited universe; the *content* approaches "nothing" in the first case, "everything" in the second. In sensations that are elements of a focalized percept the object is a section of the physical world that includes my body; in the peculiar case of introspection, a former content is the object. Here the content may be said to *cover* its object; even here the content does not *exhaust* the object, which is capable of indefinite development internally.

There are an indefinite number of levels of knowledge in which we meet non-spatial objects that therefore can not enter into sense or imagery. All these are brought here under the name of "thought." Important examples of such non-spatial presentations were cited at the beginning. The yes-no determination in judgment is distinct from that of choice (B. Russell), and consists in the contrast between presence and absence of some feature in the object—a matter of content purely, not of subjective



aet. In inference, association is undoubtedly operative constantly, but here also the matter of our belief is objective purely. "We find our way to a new conclusion in thinking as we find our way to a new district in exploring, not mainly by habit, but by observing the lie of the land and searching out the road" (p. 47). Inference is, in fact, only a special method for making the features of reality clear to ourselves and to others, and non-inferential knowledge is as common in thought as in sense.

Among non-spatial presentations are included the minds of other people. When I contemplate material things, not only my object but the content of my mind is made of wood and stone. So when I contemplate my friend, the contents of my mind are "made" of his spirit and spiritual activity; for this enters my consciousness and is present to my thought.

Two chapters are devoted to the defense of the presentation of reality in sense and in thought, respectively. Those who regard the contents of sense as too near to be objective (*e. g.*, Stout) confuse sensation with feeling; for no other distinction between them ever has been or could be offered except the objectivity of sensation and the subjectivity of feeling. Those, on the other hand, who think the objects of thought are too remote to be presented at all are under the delusion of a spatial meaning in "presentation," and of another ambiguity, that of the phrase "immediate knowledge." Inferred knowledge is said to be non-immediate, but the meaning is historical rather than epistemological; that is, inferred knowledge is reached by means of other knowledge; it is by no means therefore out of touch with its object. The recipient act, in inference, is continually helped and guided by a creative act—hypothesis, the making of suggestive pictures or guiding lines. Subjectivism confuses these elements of inference.

Under the head of inference comes a criticism of James on conception, and it applies equally well to Bergson. These anti-conceptualists attribute too much to sense-experience, and miss the essential significance of thought. Pure sensation is the unreachable limiting case of experience accepted without inspection, with the given forbidden to expand. The immediate feeling of life does not *solve*, but *sets*, the problems of thought. Such feeling gives us the going thing; understanding gives us the "go" of it. Bradley is, on this point, in the strange company of these empiricists. They are right in counseling a modest attitude in intellect; wrong in their blindness to the objective realness of its content. They urge us to get full data, as if data were solution. They do not consider the *involvedness* of "immediacy." The true inwardness unfolds in relations, and it is just the distinction between thought and sense that the former is the apprehension of relations, the latter the apprehension of qualities. Our *coming* to see the relations may be (historically) non-immediate; our *seeing* them is of precisely the same immediacy as that of sense. The effort of coming to see them is that of focusing and guiding our sight. There is construction, creation, in coming to see; none in seeing.

In short, if I "know about," I know. So, if we take the "content of my sensation" as the object of thought, thought *knows* that content in knowing about it. The proposition that thought can not see



what sense sees in an object, is a special case of the general truth that, so far as I am not repeating an apprehension, so far I am not apprehending its own *content*—that is, the aspect of the object which I apprehended before. I can apprehend my own feeling, as I do in any judgment about it. But, as with sensation and belief, my apprehension of it is not repetition of it. Subjectivity is not descriptive of feeling. Mind is no more subjective than objective. I can contemplate my own mind, or anything else in the universe, as I prove by writing about it. But in the nature of things I can not have within the limits of my presented content the receiving of that content. I can not see my face. It is not invisible, but I can not look two ways at once. Living, for James and Bergson, is more than seeing life. But this is a mistake. Seeing life is more, not less, than living; for seeing implies living, and living does not imply seeing.

In the problem of error, a second and brief division of the essay, the central doctrine is that knowledge is fallible in proportion to its significance. If sense can not lie, it is because of its inarticulateness, not because of its immediacy. "The only way of avoiding error is to stop short of the line round our content at which it unites with a special and determinate universe of reality" (p. 109). As a fact, no experience that has ever been proposed as the unshakable foundation of belief is roomy enough for any belief. But this is no great matter, for it is in the *whole* of experience that the reality of the world manifests itself. In *any* case of consciousness, whether knowledge or error, a real object is presented. The peculiarities of our nature conditioning error are elements in the given objective world. The objects of error are abnormal. Their reality contradicts itself, becomes transparent, and finally fades away. But no more than other objects is the false object created by our apprehension of it.

The third part, too, can only be glanced at here. It is particularly interesting in its justification of the objective reality of the world of assumption, a mansion in the "many-mansioned universe."

I can create the object of perceptual experience, as in building a house, or I can create it in the non-actual worlds by assuming. It is dependent in either case on the act of creation, not on that of apprehension. I do, in the latter case, just what I do in the former, "enlarge reality, create more objects for the apprehension of myself and others. These objects would be real if they were only presented once and then destroyed and forgotten; but in most cases they have much more reality than this, since they are capable of being presented again and again, of being looked at in various aspects, of being explored and developed" (p. 133).

Assumption is thus creation in another universe than that of the act of creation. The latter universe is the ground of the former. As free creator, I can set the law of non-contradiction aside, in assumption. This circumstance, it will be remarked, does seem to constitute an important difference in the two kinds of creation. The building of a house has no such freedom as this. The author evidently regards the difference as irrelevant to the realness of the assumption world. That rests, no doubt,

in the end, on the fact that it is contained in our knowledge. One can not treat the argument fairly in the space at present available.

In assumption, I see the object as non-actual; in judgment, as actual. Assumption and judgment differ thus in *content*. Both differ, also in content, from doubt. The content of belief has external articulation; the outline of the content of doubt is blurred. The outline of the content of assumption is distinct, but overlain upon, not articulated with, an external universe.

This little book is much more suggestive than wordy, and eriticism is largely disarmed by this feature of it. It keenly glances at many of the hardest problems of the theory of knowledge, with an able, charming, and persuasive air of solving some, and an equally gracious modesty with regard to others.

It is an admirably useful book to work from in a study of epistemology.

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*An Introduction to Experimental Psychology.* CHARLES S. MYERS. Cambridge: University Press. 1911. Pp. vii + 156.

This little book presents very clearly and interestingly some of the problems and results of experimental psychology. The author has chosen those fields that are most interesting and to which he has himself made most contributions. There are seven chapters: one each on touch, temperature and pain, on color vision, the Müller-Lyer and other illusions, on experimental esthetics, on memory, and two on mental tests. The first chapter for the most part gives a summary of the work of Head and Rivers on nerve division. The second chapter gives a brief summary of the facts of color vision, with some reference to theories, and then a relatively long summary of the work of Rivers in its bearing upon the color sense of savage tribes. The discussion of the Müller-Lyer illusion makes much use of Rivers's work, with summary of the theories. Contrast and confusion are preferred to eye movements as an explanation.

Particularly good is the chapter on memory. It gives a very useful summary of the results of investigations of memory, with some practical suggestions. The first chapter on mental tests covers ten tests of sensory acuity, esthesiometer tests, and different tests of fatigue. It studies the results obtained from groups of different mental standings and of different ages, and considers the relative importance of mere sensory acuity and intelligence in the results. The second chapter on tests, the best in the volume, gives the Binet-Simon tests with modifications for British usage.

The work can be recommended to any interested layman, and should prove very useful on the topics treated as a work of reference for college students.

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UNIVERSITY OF MICHIGAN.



## JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. July, 1911. *Le temps selon les philosophes hellènes* (pp. 5-24): P. DUHEM.—According to Archytas time is a number determined by the general movement of the universe; time in general is the duration of this movement, the time between two events is the number of revolutions which intervene between these events. Aristotle, in the "Physics," defines time as that which indicates the number of successions in any movement. Plato denies that time is a number and asserts that it is a certain continuous quantity which is common to all actions. *Le tempérament nerveux*, second article (pp. 25-47): J. TOULEMONDE.—Persons of the nervous temperament are characterized by submission to all sorts of fanciful ideas—obsessions with regard to their own health, judgments, intellectual problems. As a result they are filled at times with anxiety; at times are completely absorbed in thought, and at all times have an exaggerated idea of the value of time. The type is, moreover, characterized by extreme instability and by marked impressionability. *Les faits de Lourdes. A propos d'ouvrages récents* (pp. 48-62): R. VAN DER ELST.—To judge of the cures at Lourdes it is necessary to study the facts of the cases; defenders of the miraculous healings have not used adequately these facts, and adverse critics have almost ignored them. *La loi naturelle*, second article (pp. 63-85): E. BRUNETEAU.—The doctrine of infallible moral intuition is utterly destroyed by the facts of history and anthropology, and yet these same facts point to the possession on the part of humanity everywhere and in all times of the same fundamental principles of morality. *Analyses et comptes rendus*: J. Dewey, *How we Think*; G. Dumesnil, *Le spiritualisme*; J. Segond, *La prière*: J. LOUIS. A Ménard, *Analyse et critique des principes de la psychologie de W. James*: F. MEUTRÉ. S. Déploige, *Le conflit de la morale et de la sociologie*: R. FLORIAN. J. Lebreton, *Les origines du dogme de la Trinité*: J. GARDAIR. F. Picavet, *Roscelin*: R. SIMETERRE. *Recension des revues*.

REVUE PHILOSOPHIQUE. July, 1911. *Le congrès international de philosophie de 1911* (pp. 1-22): A. REY.—The author's criticism of the organization of the congress and an account of the general ideas that seemed prevalent there. *Pensée théorique et pensée pratique* (pp. 23-41): F. RAUH.—The affirmation of the real always involves practical affirmations, so the current separation of moral truths from cosmic truths is artificial and inexact. *La sociologie de M. Durkheim* (first article) (pp. 41-71): G. DAVY.—As M. Durkheim's works first made precise the idea, object, and method of sociology, so through this and the following study, M. Davy aims at a definition of this science. *Essai d'une classification des états affectifs* (end) (pp. 72-89): E. TASSY.—A study of two of the three classes of affective states distinguished in the author's previous article, organic affective states and psychic affective states, and a section on the function of intellectual activity. *Analyses et comptes rendus*. J. Rehmke, *Das Bewusstsein*: R. HUBERT. H. Joly, *Problèmes*



*de science criminelle*: G. RICHARD. S. Déploige, *Le conflit de la morale et de la sociologie*: J. SEGOND. N. Kostyleff, *La crise de la psychologie expérimentale*: J. DAGNAN-BOUVERET. Chabrier, *Les émotions et les états organiques*: J. DAGNAN-BOUVERET. J. Pickler, *Ueber die biologische Funktionen des Bewusstseins*: J. DAGNAN-BOUVERET. I. Babbitt, *The New Laocoön*: C. LALO.

McDougall, William. *Body and Mind: A History and a Defense of Animism*. New York: The Macmillan Company. 1911. Pp. xix + 384. \$2.75.

Stratton, George Malcolm. *Psychology of the Religious Life*. London: George Allen & Company, Ltd. 1911. Pp. xii + 376. \$2.75.

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### NOTES AND NEWS

A NEW psychological review, *Psiche*, has been launched in Italy with Professor Enrico Morselli of Genoa, Professor Sante de Sanctis of Rome, and Professor Guido Villa of Pavia as directors, and Dr. Roberto Assagioli of Florence as editor-in-chief. The directors aim to make the new review different from previous reviews in certain respects, one of which will be the devotion of each number to a particular topic. It is planned to publish six numbers of not less than sixty-four pages each in the course of the present year. The subscription price is L. 8 for Italian and L. 10 for foreign subscriptions. Single numbers will cost L. 2. Communications may be addressed to Via degli Alfani, 46, Florence.

PRESIDENT G. STANLEY HALL, of Clark University, is giving a course of six lectures on "The Founders of Modern Psychology" at Columbia University. His program is as follows: January 16, "Edward D. Zeller, the Scholar in his Field"; January 17, "Edward von Hartmann, the Philosopher of Temperament"; January 23, "Hermann Lotze, the Harmonizer"; January 24, "Theodor Fechner, the Animist"; January 30, Hermann von Helmholtz, the Ideal Man of Science"; January 31, "Wilhelm Wundt, a Scientific Philosopher."

THE Houghton Mifflin Company have in press "The Classical Psychologists," selections illustrating psychology from Anaxagoras to Wundt, compiled by Dr. Benjamin Rand. This work of Dr. Rand is a companion volume to his "Modern Classical Philosophers" and "The Classical Moralists."

PROFESSOR HENRI BERGSON, professor of philosophy of the Collège de France, has accepted the invitation of the Senatus Academicus of the University of Edinburgh to be Gifford lecturer from October, 1913, to October, 1915.

EDWARD O. SISSON, recently head of the department of education at the University of Washington, has been appointed professor of education in the newly established Reed College, at Portland, Oregon.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### DOCTRINE OF SPECIFIC NERVE ENERGIES

THE doctrine of specific nerve energies was first definitely formulated by Johannes Müller (1801-1858). Physiologists before his time had regarded the sense nerves as merely conductors, each of which, however, had a special sensibility to some peculiar impression, and hence was the mediator of some definite quality of *external* bodies. Müller pointed out that the discovery of the possibility of arousing different sensations in different nerves by the same stimulus, *e. g.*, electricity, and also of the fact that different stimuli, *e. g.*, electrical and mechanical, can produce in the same sense organ similar sensations, had rendered the theory of the susceptibility of nerves to certain impressions inadequate and unsatisfactory. He therefore advanced the theory that "each peculiar nerve has a special power or quality, which the exciting cause merely renders manifest"; and that in sensations we do not experience the qualities or states of external bodies, but merely the conditions of the nerves themselves. Hence light, sound, and other apparently external qualities, as such, have no existence, but are states which certain unknown external influences excite in our nerves.

It is clear that Müller considered the sensory nerves themselves as the seat of the "specific energy"; and thought that the function of the central organ consisted in the connection of the nerves into a system, the reflection of the sensations upon the origin of the motor nerves, ideation, remembrance, and attention. His theory, also, seems to refer to modality only and not to quality; that is, a single specific nervous energy is provided for each sense organ; and, therefore, any sensory apparatus may respond to different forms of adequate stimuli in a variety of ways.

Helmholtz first distinguished between modality and quality. Sensations differ in quality when it is possible to pass by a series of intervening sensations from one to the other. They differ in modality when this can not be done, *e. g.*, visual and auditory sensations. Helmholtz attempted to explain *quality*, also, by postulating

a specific energy for each nerve *fiber*, that is, he sought for specific energies within the individual sense organs; and his theories of visual and auditory processes depend upon this further application of the doctrine, *e. g.*, each of the colors, red, green, and violet, depends upon a specific process. Helmholtz must have interpreted the law somewhat differently from his predecessors, for he regarded these specific differences in *quality* as determined by the character of the *external* physical stimulus. In apparent contradiction to this he held that *modality* was exclusively subjective. But if quality depends upon external stimuli, the same must be said of modality, for the latter is a mere concept or general term. There is no such thing as tasting in *general* or seeing in general. What we taste or see is always a *particular* quality.

Before proceeding we must refer to a certain ambiguity in the term "specific energy." It confuses *function* with property or quality. It makes, of course, a great deal of difference whether *specific property* or *specific function* is meant by the phrase. Most writers on the subject have used the term so loosely that it is difficult to know just what they mean when they speak of "specific energy." Wundt would scarcely deny the specific energy, in the sense of *specific function*, of any given nervous unit; but he would deny it in the sense of a specific property, that is, specific chemical or physical process, in that unit as a correlate of a specific quality of sensation. Of course the latter meaning includes the former, but the opposite is not true—at least not necessarily so. Müller meant by the doctrine a specific nervous process, and so, we think, did Helmholtz.

McDougall leaves no doubt as to his position when he says: "The nervous *process* which is the immediate exciting cause of each quality of sensation is different from that which excites any other quality of sensation"; and that "it is a difference which could, if we knew more about it, be expressed in physical or chemical terms." He advances the following proofs for his theory: (1) Whenever it has been found possible to stimulate a nerve or sense organ by inadequate stimuli, the resulting sensation is of a similar quality to that produced by stimulation of the same nerve or sense organ by its adequate stimulus, that is, the one that normally excites it. (2) The Helmholtz theories of visual and auditory processes, which offer the most satisfactory explanation of the facts (?), depend upon this doctrine. (3) Unlike effects must have unlike causes, therefore unlike sensations must depend upon unlike nervous processes.

McDougall differs from Müller in placing the seat of the specific energy not in the nerves themselves, but in the cerebral cortex, and especially in the synaptic processes. His reasons for so doing are as



follows: (1) If the specific quality were in the nerves or sense organs, we would have to consider these processes as directly affecting consciousness. This is improbable since loss of a sense organ or nerve does not prevent the recurrence of the same quality of sensation in imagination, while loss of the cortical structure does. (2) The conduction processes of all sensory nerves appear similar in kind. (3) It is in harmony with the principle of strict localization of cerebral functions and the principle of association; for if the cortex were of indifferent function, it would be difficult to understand why the excitement of an associated group might not on one occasion be accompanied by one sensation, and on others by entirely different sensations or psychical states. (4) This specialized character belongs to the synapse, because the nerve cells are anatomically similar and have as their function to preside over nutrition; also the synaptic processes are highly fatiguable and transmit the nervous impulse discontinuously. These features seem likewise characteristic of psychical phenomena.

It is noteworthy that as our knowledge of the processes concerned has advanced, the seat of the specific quality has receded from the nerves to the cell-bodies and thence to the synapse. That is, with the progress of physiology and anatomy, the advocates of the theory have been forced to withdraw this *qualitas occulta* from known to unknown regions. It seems likely, as Wundt remarks, that in the future the specific energy will be placed in the sense organs themselves, where differences of structure and function warrant the assumption.

Wundt holds that the different qualities of sensations depend *not* on the specific *character* of nervous elements, but solely upon the different modes of their connection. The principle of connection of elements asserts that the "simplest psychical content has a complex physiological substrate," *e. g.*, the sensation of red has a complex connection of nervous elements as its physical correlate. It is not, however, so much the connection of nerve elements with one another, as their connection with organs and tissue elements and through these with external stimuli, that determines the specific quality of sensation. A specific physical or chemical process as the basis for each primary quality of sensation is an *unnecessary* hypothesis which involves many difficulties and is wholly unprovable. True, certain connections or systems of elements have specific functions, which, however, have been acquired under pressure of the external conditions of life.

This leads to the hypothesis of the original indifference of function, which is founded upon the following observations: (1) A fairly long continuance of any function is necessary before the correspond-

ing sense qualities appear in imagination, *e. g.*, if a person becomes blind in *early life*, he has no visual imagery. (2) Functional disturbances occasioned by lesions are sometimes removed by a *vicarious* functioning of other elements. Here the specific function arises during the lifetime of an individual. Of course we *inherit dispositions*, which consist in the connection of nervous and tissue elements, etc.; but, even so, the development of their specific functions demands the actual discharge of these functions upon excitation of the end organs by external stimuli.

The indifference of elementary function (and certainly property) is also proved anatomically by the essential identity of structure; physiologically, by the essential *identity* of nervous processes; and psychologically, by the fact that elementary qualities of sensation are referred to functions of peripheral elements.

The doctrine of specific nerve energies is contrary to the physiological doctrine of the development of the senses and hence to the whole theory of evolution. According to the latter our various senses arose through differentiation from a common sensibility—a differentiation due to the action of external stimuli upon the organism, and the adaptation of the latter to a complex environment. Hence each sense organ is excited only by those stimuli to which it has become specially adapted, and is unaffected by others. Even the sense organs, then, are only secondary in determining the qualities of sensations. These must ultimately be referred to external stimuli. The specific character of the sensation most probably consists in the *attitude* which we assume towards the external stimulus—an attitude determined by the *connection of nervous* and other elements.

We remarked above that each sense organ or nerve was excited only by its adequate stimuli, but it is just because there are exceptions to this rule that the doctrine of specific energies was first formulated. Electrical stimulation will produce sensations of light, taste, or smell, etc. Mechanical stimuli will produce visual or auditory sensations; direct electrical stimulation or section of the *nervus opticus* will “cause flashes of light”; and it is said that mechanical, chemical, or thermal excitation of the *chorda tympani* will produce sensations of taste. These are the chief facts that can be brought to bear in favor of the theory, and which any other theory must endeavor to explain; but even if otherwise inexplicable, they can not be regarded as proofs of the doctrine, but merely as illustrations.

According to Wundt, all these cases of abnormal stimulation can be explained by the principle of “practise and adaptation.” The impressions which the sense organs are adapted to receive, by virtue of inherited or developed *connections of elements*, arouse certain sensations; and when this mode of responding has become habitual,



the accustomed excitation is set up by inadequate stimuli. Külpe says that sensory nerve fibers with centrifugal conduction have been demonstrated in the case of the nervus opticus, and that the visual sensations aroused by electrical stimulation of this nerve are due to the fact that the nervous excitation is first conveyed to the retina by these efferent sensory fibers, and thence pursues its normal or accustomed path of discharge. These centrifugal fibers may exist in all sensory nerves; but even if they do not, the alternative theory that stimulation arouses the accustomed excitation in the visual system of elements is not difficult; and far simpler than the theory of a *qualitas occulta* different for every primary quality of sensation.

If the doctrine of specific energies were true, we see no reason why there would not be a much more far-reaching *indifference of the stimuli* than is actually the case. The inadequate stimuli are limited in number, and there are many *negative instances* against the theory: *e. g.*, mechanical stimuli will not produce sensations of taste or of smell; sound waves will not affect the nervus opticus, nor light waves the auditory nerve; temperature stimuli will not arouse other sensations, etc.

When electricity arouses the sensations of taste and smell, it may only prove that it is an *adequate* stimulus for these sensations, that is, that electricity can be tasted and smelt. There is at least nothing extraordinary in regarding electricity as an adequate stimulus for sight. Electrical and light waves are not essentially different; and, especially if one adopts Meisling's vibratory theory of vision, this conclusion appears highly plausible.

Then again an inadequate stimulus may contain within itself or give rise to the usual normal stimulus: *e. g.*, when a sensation of sound is produced by mechanical pressure, this may be due to sound waves produced in the inner ear by external pressure upon the organ of hearing; and when electrical stimulation produces a taste sensation, this may be due to a decomposition of the saliva, which frees the adequate stimulus.

A final objection against the indifference of the stimuli—or rather against the effects of inadequate stimuli as supposed by the doctrine of specific nerve energies—is a psychological one which seems to us of considerable importance. It seems introspectively untrue that adequate and inadequate stimuli produce sensations that are at all or essentially the same in character. There is always a quality or feeling associated with sensations produced by the latter, by which they can clearly be distinguished from sensations produced by the former. We are never deceived in this respect; and it certainly rests with the advocates of the doctrine to explain why this is so. If the theory were true, it would be difficult to understand why inade-



quate stimuli, *e. g.*, for sight, would not give us all the visual qualities of *objects*, even to externality and figure, which *light waves* are capable of giving us.

We saw above that McDougall advances in favor of the doctrine of specific energies the Helmholtz theories of visual and auditory processes, which he says offer the best explanation of the facts. We do not intend to enter into a discussion of the relative merits of the various theories of color sensations. Space will not permit. But we consider the Hering theory, which allows at least *two processes* for each structural element, far superior to that of Helmholtz. It affords a *better* explanation for the phenomena of color blindness, peripheral and faint light vision, the psychical primariness of blue and yellow, etc. Moreover, it has been demonstrated that the same cone can give rise to any or all of the sensations, red, green, and violet. This fact seems favorable to Meisling's vibratory theory, as well as incompatible with the doctrine of a specific process.

As Wundt very well remarks, "Many senses have no distinct sensory elements corresponding to different sensational qualities"—at least these have not been pointed out. This is especially true of smell, but holds to a lesser or greater extent of taste, vision, and even hearing, unless one adopts the Helmholtz theory of auditory processes. This theory may be seriously questioned; but even if true, it can scarcely afford an argument in favor of specific energies; because it may be replied that "the different qualities of the sensations are due not to any original specific *attribute* of nerve fibers or other sensory elements, but to the way in which single nerve fibers are *connected* with end organs," etc. The processes in these fibers and their connections, which may, perhaps, be called *specific functions*, depend upon external impressions, and this dependence is localized at the *periphery*.

When advocates of the doctrine of specific energies analyze sensations to obtain elementary qualities and ascribe to each of these a specific quality of nerve process, they overlook the fact that we have no definite criterion of the primariness of a sensation. The gray obtained by mixing colors has psychically no similarity whatever to the colors, *e. g.*, red and green, of which it is composed. How do we know that red may not itself consist of two or more equally dissimilar sensations? In fact Wundt's principle of the connection of elements would lead us to believe this; and physiologically it appears true. Our criterion of the primariness of red must then be a physical one—the simplicity of the etheric oscillations corresponding to this sensation. Here again we see external stimuli and not nerve process as the ultimate determining factor. This physical simplicity may cause (in fact *does* cause) excitation in a physiologically complex

system. Hence it does not militate against the principle of connection of elements.

Myers points out that "our tonal sensations are the result of a fusion between various primordial elements of which we must always remain ignorant." This is true if we accept the Helmholtz theory; for according to it, pitch depends upon the position of the most intensely stimulated fiber, and we *never* experience the result of stimulating a *single basilar fiber*. This is another illustration of the principle of connection of elements, and the dependence of quality of sensation upon peripheral as well as other elements.

Münsterberg's "action theory" can, we think, be used as an argument against specific nerve energies. At least it harmonizes very well with the view we have adopted and with Wundt's principle of connection of elements. According to this theory, sensory processes are attended by consciousness only when they discharge into actions. In other words, sensation depends upon motor reactions to external stimuli or objects. This seems to be the logical conclusion of Wundt's principle; for this reaction or motor attitude is determined by an inherited or developed *connection of elements*. The specific quality of sensations, then, is nothing more than the specific attitude we assume as determined by the motor discharge or rather by the whole sensory-motor arc. The chemical or physical process is, thus, the same in all nervous substance. There is no inexplicable difference here. This seems more intelligible, less fraught with difficulties, and more in accord with facts than the doctrine of specific energies in Müller's and McDougall's sense. We say in McDougall's sense because this theory does not deny "specific energies," if by the term is meant the *specific function* of a given sensory motor arc or connection, which function may, however, be changed or modified by incorporation into a larger system or by vicarious functioning, as mentioned above.

The action theory, it may be said, ascribes the *quality* of sensations to the *sensory path* and its ending; but, we answer, vividness, intensity, facilitation, etc., depend on the motor discharge, and without these there would be no quality, for these are *attributes* of the quality, and in any case the action theory may not, of course, be infallible in all respects.

A difficult question may be raised, viz.: Why is it that on loss of a sense organ, we still retain the corresponding imagery, while a cortical lesion in a specific area annihilates it? We sometimes forget that there is an important difference between a memory-image and a sensation. McDougall says, "An image resembles the sensation of which it is the representation or reproduction in every respect save that it lacks the vividness of the sensation." The image seems to



lack the tangibleness or feeling of *present* existence that accompanies the sensation. This, then, must be the quality contributed by the sense organ; for every element in the sensory-motor connection contributes its quota. Of course we must remember that without the sense organ there could be no sensations or images; and without external stimuli there would *have been no sense* organs. After a certain sensory-motor arc has been responding for a considerable time with a definite motor attitude to certain external stimuli, if the peripheral portion, the retina, *e. g.*, be then removed, the remaining part of the arc will continue by virtue of adaptation to respond in the *accustomed* manner, when excited by overflows from other arcs or systems with which it has been previously connected. The sensory-motor connections are intact. There is nothing to prevent discharge into *action*. The result is imagery (in this case visual) which, as before said, lacks certain important qualities of sensations, either because it involves but part of the arc or because the impulse can never be so great as that initiated by external stimuli, without which the motor reaction and hence the imagery would have been impossible; for the reaction that underlies the imagery is due to adaptations arising from the *habitual* assumption of the attitude. The doctrine of specific nerve energies, as we mentioned above, renders an explanation of imagery difficult if not impossible. McDougall's two theories seem to us inconsistent. He finds it difficult to explain how the seats of the physiological processes can be identical or partially identical and the resulting psychical phenomena different; and we find him hinting at the action theory, when he says, "Their motor tendencies are the same, the cortical excitement in both cases issues from the cortex by the same efferent paths."

Now, if instead of a sensory organ being removed, there is a lesion in a definite cortical area, *e. g.*, occipital lobe, how is it that imagery is lost? The answer to this follows from what we have said. In the former case the sensory-motor *connections* were intact; now they are severed. The motor discharge is, therefore, impossible. Hence, there can be no reaction or motor attitude and no imagery or sensations. New connections are sometimes formed and the lost sense thus regained. This is called by Wundt "the principle of vicarious function," and is itself a strong argument against specific energy.

In spite of McDougall's assertions to the contrary, we consider association inexplicable on the hypothesis of specific energy. The connection of absolutely unlike processes forever remains an enigma, while association by similarity of motor attitude or reaction seems quite intelligible; and his principle of "*strict* localization of cerebral functions," which of course *logically follows* from the "doctrine of



specific energies," is held by very few physiologists of the present day and still remains to be proved.

In conclusion the results of an interesting experiment performed upon cats by Langley and Anderson may be cited against the doctrine of specific energies. The cervical sympathetic nerve *contracts* the blood vessels of the submaxillary gland; the chorda tympani dilates these vessels. The cervical sympathetic was joined at its peripheral end to the chorda tympani. After union and regeneration, stimulation of the cervical sympathetic caused *dilation* of the vessels. This proves that a vaso-constrictor fiber can become a vaso-dilator fiber; and that whether contraction or dilation of the blood vessels occurs depends upon the mode of nerve ending. The experiment, of course, was performed upon efferent fibers, but it is not therefore without weight in a consideration of this problem; and it is of especial value in refuting the theory that the seat of the specific energy is in the nerve fibers.

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### IS INVERSION A VALID INFERENCE?

TO the old immediate inferences recent writers add inversion. The inverse of All S is P is Some S is not P. Of No  $\bar{S}$  is P the inverse is Some  $\bar{S}$  is P. I and O have no inverse.

Inversion violates the fundamental principle of logic and common sense that we should not go beyond the evidence. Every conclusion, in order to be valid, must be rigidly limited to the content of the premises. Its content must not be greater than that of the premises, and it must not be of a different kind. Now  $\bar{S}$ , the contradictory of S, is an infinite term greater than S, for it includes all the universe<sup>1</sup> other than S. True, it is limited by the word *Some* in the conclusion, but that fails to make the reasoning good, because  $\bar{S}$  is different in kind from S. An ordinary illicit process of the minor term is indeed cured by writing *Some* in the conclusion, as in the following example: No birds are viviparous; all birds are bipeds; therefore no bipeds are viviparous. The minor term is illicit, but the fault is easily cured by writing, Some bipeds are not viviparous. But the inverse also begins with *Some*. Why, then, is it still at fault? Simply because  $\bar{S}$  is different in kind. Bipeds are the same two-legged creatures in the conclusion as in the minor premise; but every possible  $\bar{S}$  differs from any possible S. Let S stand for ruminants; then  $\bar{S}$  will represent non-ruminants. As lambs differ from

<sup>1</sup> Universe here means universe of discourse.

hyenas and oxen from tigers, so every possible ruminant differs from any conceivable non-ruminant. Inverting, All ruminants are herbivorous, we have, Some non-ruminants are not herbivorous. In the premise we are talking about cows; in the conclusion about lions. Can we infer anything about the food of lions, or any other non-ruminant, from the fact that cows eat grass?

Of the two fundamental requirements, (a) the content of the conclusion must not be greater than that of the premises, (b) it must not differ in kind, inversion clearly violates the second. Whether it does not also violate the first is a matter of doubt. The non-ruminants are much the larger group, and whether those of them which are not herbivorous exceed the ruminants or not, is a question for the naturalist. No matter how it turns out, the doubt is damning. Valid reasoning is free from any shadow of doubt.

Serious as this shadow of doubt may be, the other point, the difference in kind between the subject-matter of the conclusion and the premise, is far more damaging to inversion. Shifting ground severs the bond of inference. To infer the food of non-ruminants from that of ruminants would be a famous short-cut in zoology. Such an easy royal road would be a boon to the plodding naturalist patiently studying each group for itself.

Inversion makes no pretense of limiting its conclusion to the content of its premises. It boldly introduces new matter and is reckless in regard to quantity. It clearly goes beyond the evidence. The most common violation of that limiting principle of reason and common sense is illicit process—the whole inferred when only a part is given, whole and part being alike in kind. Inversion goes one better (or worse). The new matter of its conclusion is not represented at all in its premises—not even by so much as a beggarly “part.” The only semblance of its presence in the premises arises from the common element “S” in both subjects. But one subject is the negative, the contradictory, of the other, and negation is separation, opposition, not union or likeness. There is not a shred of matter in the premises common to the new matter of the conclusion, not the slenderest filament of an inferential bond. Inversion is a novel and gross form of illicit process which lugs in matter wholly new and utterly alien to the initial matter of discourse.

Bain calls immediate inferences “equivalent propositional forms,” and that phrase exactly describes the obverse or converse. But the inverse, with its injected alien matter of discourse, is very far from being equivalent to the invertend. The cogency of the reasoning accordingly differs notably in passing from the old immediate inferences to the new. The truth of the obverse or of the converse is obvious and indubitable. Given, No men are immortal,

then the truth of its obverse, All men are mortal, admits no doubt. The two statements are strictly equivalent. Not so with inversion. The inverse of, All men are mortal, is, Some beings who are not men are immortal. That may be true, but its truth does not follow obviously and indubitably from the invertend. Not so easy as that is the proof of immortality. My friends all die, therefore somebody will live forever, is a wide and wild leap in the way of inference. Inversion habitually proceeds *per saltum*.

The absurdities of inversion are legion. No mathematician can square the circle; therefore some one who is not a mathematician can square the circle. No athlete can jump thirty feet; therefore some one who is not an athlete can jump thirty feet. No man can prove that two and two are five; therefore some one who is not a man can prove that two and two are five. No trouble to find absurdities. Just deny something of somebody and straightway it is true of somebody else! The trouble comes when you seek concrete examples of inversion which are not silly. Inversionists for the most part prudently stick to symbols. I am not citing these absurdities just to be witty at the expense of inversion, but because they are the superficial symptoms of deep-seated unsoundness.

Illicit process of the minor term is the salient point of my criticism. In the inverse of A there is also an apparent illicit process of the major term. Keynes and Read have attempted to explain away this weak point. I make no comment on their defense of inversion. One illicit process is quite enough, and that one to which I am now directing attention attaches not only to the inverse of A, but to every possible inverse, full or partial, derived from A, E, I, or O, for they all have  $\bar{S}$  for the subject.

The advocates of inversion have two lines of proof. First in order and first in importance is the eduction series leading to the inverse by alternate obversion and conversion thus:  $SaP \therefore Se\bar{P} \therefore \bar{P}eS \therefore \bar{P}a\bar{S} \therefore \bar{S}i\bar{P} \therefore \bar{S}oP$ . Of this series Keynes says: "If the universal validity of obversion and conversion is granted, it is impossible to detect any flaw in the argument by which the conclusion is reached" ("Formal Logic," p. 139). There is a flaw nevertheless. The series involves the assumption that the subject may be manipulated just as freely as the predicate, despite the radical difference between them. The one is *subjectum*, something placed beneath as the foundation, the essential matter of discourse; while the other is not the initial matter of discourse, but something said about it. Substituting  $\bar{S}$  for S tears up the foundation and breaks the bond of inference. But substituting  $\bar{P}$  for P is harmless, provided the balance is kept true by changing the quality of the proposition. For example, Some S is P  $\therefore$  Some S is not not-P. The two negatives



balance each other. But  $\bar{S}$ , by injecting new matter of discourse, disturbs the equilibrium so profoundly that no change of quality can restore it. It is always an unbalanced negative. The deceptive semblance of balance in the double negative of the inverse (Some *not-S* is *not P*) is unreal. The two subjects,  $S$  and  $\bar{S}$ , being wholly different, the quality of what is said about the latter cuts no figure in restoring equilibrium. If we say Smith is honest  $\therefore$  *not-Smith* (Jones for instance) is *not* honest, do the negatives balance? Not at all. The shifting ground from one subject to another is a change so stupendous as to put out of court any question of balancing negatives. It is quite a matter of indifference whether we say Jones is honest or not honest so far as concerns any inferential relation to Smith is honest. The inferential tie, because of the change of subjects, is *nil*, and nonentity is indifferent to "is" and "is not." Just so with the change from ruminants to non-ruminants. It matters not one whit whether the latter are herbivorous or not. Changing subjects is so violent a jolt to the equilibrium that one little negative more or less in the predicate is of no consequence. Whatever concrete values we assign to  $S$  and  $\bar{S}$  the result is the same. They are so different that putting one for the other shatters the equilibrium so utterly that its restoration by a quality change is hopeless. The subject can not be manipulated with impunity. The basal assumption of the eduction series is fallacious.  $\bar{S}$  always destroys the balance, shifts the ground of discourse, brings in alien matter, breaks the bond of inference, and produces an illicit minor term. It boots not that in the eduction series  $\bar{S}$  first appears in the predicate. It comes back as the subject with all its sins on its head. By severing the bond uniting the last term to the first, it leaves the inverse,  $\bar{S} \supset P$ , dangling in empty space without any inferential support. The eduction series, the chief prop of inversion, is invalid.

As regards the "universal validity" of conversion and obversion, both are sound inferences so long, and only so long, as the integrity of the subject is preserved.

In the second place the inversionist appeals to Euler's circles. The inverse may be read off directly from them without any reference to the long and intricate eduction series. From the diagram of All  $S$  is  $P$ ,  $(\textcircled{SP})$ , it is obvious that Some  $\bar{S}$  is not  $P$ , viz., the space outside of both circles. But unfortunately for inversion, the argument proves too much. The same inverse may be read off from  $(\textcircled{S \cap P})$ , the diagram of  $I$  or  $O$ . But  $I$  and  $O$  have no business to be sporting an inverse. By definition inversion depresses quantity, and the quantity of  $I$ , or of  $O$ , is already a minimum. Yet Euler's

method is just as liberal to them as it is to A and E. Even if we bring in the four possible diagrams of I, the inverse  $\bar{S}oP$  is common to all of them. In fact every possible combination of two circles leaves outside space from which to read off  $\bar{S}oP$ .

It may be held that this objection is not fatal. The too prolific results of the Eulerian method may be checked by the eduction series, or by definition, thus ruling out the unwelcome results obtained from I and O. But I have shown that the eduction series is itself invalid, hence unfit to serve as a standard for testing the results of another method; and the ruling out of certain results by definition is arbitrary. Logical consistency demands either the acceptance of all inverses, those of particulars as well as of universals, or else the wholesale rejection of them all.

The inversionist may claim that the facile and indiscriminate reading off of inverses from all sorts of propositions casts doubt upon the Eulerian method rather than upon inversion. In this I am very much inclined to agree with him, though meanwhile indulging the reflection that such doubt is bad for him in the end, since it undermines his second line of defense. The legitimacy of Euler's diagrams rests upon the assumption that the relations of terms may be adequately represented by their extension alone as presented to the eye by lines and spaces on a flat field. In order to read off inverses we must further assume that outside space represents the contradictory of the term in the circle, and that this contradictory exists. Here begin modern refinements to which Euler himself was a stranger. He never dreamed of bothering the pretty head of his German princess with not-S's and not-P's.

The basal assumption is sufficiently bold. Flat spaces constitute a very inadequate presentment of the intricate relations of terms each of which is rounded up into a subtle complex of qualities as well as quantity. However, so long as we limit ourselves to the inside of the simpler diagrams, as Euler did, the method has some merit. But its modern refinements are distinctly risky. Outside space is an untamed jungle full of logical pitfalls. There it lies plain and fair to the eye, therefore the contradictories of S and P exist, and their relations may be read off at a glance! Logical relations must conform to space relations! But the study of the existential import of propositions casts doubt upon the existence of  $\bar{S}$  and  $\bar{P}$ ; and the facile reading off of inversion fallacies casts doubt upon the conformity of logical relations to space relations. Conclusions read off from the outside of Euler's circles should be held doubtful unless they have been independently confirmed. In the case of the flood of inverses (no less than six may be read off from the four diagrams of I), this independent verification is not in sight. On the contrary,

illicit process taints them all. We must discard the whole lot, or else remand them to the chapter headed "Fallacies."

L. E. HICKS.

BERKELEY, CALIFORNIA.

## SOCIETIES

### NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on Monday, November 27. An afternoon session was held at the Psychological Laboratory of Columbia University, and an evening session at the American Museum of Natural History. Members dined at the Faculty Club, Columbia University. The following papers were read:

*Correlations of Association Tests:* R. S. WOODWORTH.

Preliminary results with the tests of controlled association prepared by Woodworth and Wells indicate rather high correlation between the tests of similar performances.

*Experiments in Progress at the University of Illinois:* S. S. COLVIN.

This paper reports some of the typical experiments now in progress and partly completed, but not as yet published. One of the most extensive of these is the attempt to discover the effect of learning certain motor activities on the learning of other similar activities. It differs principally from other studies on the transfer of training in the large number of subjects who participated and in the attempt to isolate the factors of accuracy and rapidity. The experiment has been conducted in two sections, the first with about 300 children of the practise school of the Charleston (Illinois) Normal School, the second with about 1,800 children in the grade schools of Bloomington, Illinois. While the results have by no means been worked out, as far as they go they show that while there is a positive transfer effect from the practise series to the test series in accuracy, the opposite is true in regard to rapidity. The test also clearly indicates the necessity of running a series of check experiments in interpreting the results.

Another study attempts to test whether it is better to learn a given task at one sitting or at several. The material used in one test was nonsense syllables. These were learned in one, two, three, and four periods, respectively. The results showed that it made absolutely no difference as to which method was employed. The test is



now being conducted with poetry as the memory material. A positive result that has so far been discovered is that there is a high positive correlation between immediate recall and recall 24 hours later. The subjects used were about 600 children in the grammar grades of the Champaign public schools.

A third test with school children, also conducted in the Champaign schools, has shown that while whispering is an aid to learning nonsense material, writing is a hindrance up to the sixth grade.

An experiment to discover the extent of children's vocabularies indicates that they are more extensive than ordinarily exposed.

Another experiment investigates the efficiency of spatial discrimination under varying degrees of brightness intensities. Among the interesting results appears the fact that there are two maxima of discriminative efficiency, a relative maximum with an illumination of about two-candle-power illumination, and an absolute maximum when employing 32-candle-power illumination. Probably the factors of attention and habituation explain respectively the two maxima. The experiment is to be continued with chromatic lights and a similar test is to be made in regard to sound.

*Reaction Time to Different Retinal Areas:* A. T. POFFENBERGER, JR.

In the course of an experiment in which light stimuli falling upon different regions of the retina were reacted to by either the right or the left hand, certain differences appeared. This report includes: (1) the differences in the time of reaction by the hand when the light stimulus strikes the center of vision, and points 10, 30, and 45 degrees from the fovea in a horizontal plane; (2) a comparison of the reaction times resulting from a stimulation of one eye and of both eyes. All differences were based on averages of 400 reactions and have a very low probable error. In the two subjects tested, the times increased as the distance from the fovea increased, and in all cases the reaction of the nasal side of the retina was faster than of the temporal side. Comparison with other retinal peculiarities suggests that the differences found are due to conditions in the retina rather than to differences in the speed of the central process. The reaction time upon stimulation of both eyes was faster by about .015 second than in the case of one eye, a difference due probably to the speed of transmission through the nerve centers.

*Some Experiments in Incidental Memory:* G. C. MYERS.

Subjects were asked to draw from memory a representation of the size of a dollar bill; to choose from a series of circles those representing the size of the respective common coins; to represent a watch-dial with Roman notation.

Of the 500 subjects (business men and students and pupils from

the university to the third grade public school), 15 overestimated the length, 88 subjects overestimated the width. In both the cases the average underestimation was very much greater than the average overestimation. All of the 117 subjects who corrected for length increased it, and all but 2 of the 124 subjects who corrected for width increased it. As a result of this finding, tests are in progress on "image measuring."

The males, as a rule, did better than the females. Of the 50 country-school teachers and 30 high-school students, however, the females did noticeably better than the males. In the watch experiment, out of 198 cases, all but 19 wrote "IV" and all but 8 wrote "VI." In the coin test the general tendency is to overestimate the large ones and to underestimate the small ones. A number of other tests now in progress were mentioned.

*Visual Acuity with Lights of Different Colors and Intensities:* D. E. RICE.

The comparatively recent development of illuminants of high intrinsic brightness, with the attendant variations in hue, has given a new importance to the question of visual acuity.

The proper conservation of the eyesight of those who must work almost constantly under artificial illumination makes it desirable to know what intensities and colors of illumination are best adapted to give the eye its highest efficiency.

In the study of this question two points are obviously of vital importance—namely, the exact determination of the intensities and the character of the test used to measure the acuity.

Many complicating factors enter into the problem, among them being the following: the state of adaptation of the eye; the varying sensitivity of different parts of the retina to lights of different colors in different states of adaptation; the influence of accommodation, involving the chromatic aberration of the eye; size of pupil; individual differences, including variation in sensitivity to different colors, and variations in the dioptric system of the eye.

These factors, together with the failure to determine accurately the intensities of the lights used, and the employment of different types of tests, are responsible for the wide variations which are to be found in the conclusions of different observers.

The present investigations indicate that red gives a considerably higher acuity than green, and that white may be either more or less efficient than red, depending largely upon individual differences, and upon the predominance of the long or short wave lengths.

With all lights the acuity curve rises rapidly with increase in illumination until an intensity of from one to two meter candles is

reached, after which large increases in intensity are accompanied with relatively slight increase in acuity.

Unit acuity with white light is reached at an intensity of from 25 to 35 meter candles.

The following explanation is suggested to account for the higher acuity with red illumination. Various facts seem to indicate that the cones of the retina, which are concerned in the perception of form, are more sensitive to radiations of longer wave length, while the rods are relatively more sensitive to shorter wave lengths. It appears also that there is to some extent rivalry between the brightness sense and the form sense. With red illumination, therefore, cone vision has the advantage, resulting in enhanced perception of form.

*The Action of Pharmacological Agents as an Aid in the Classification of Mental Processes:* H. L. HOLLINGWORTH.

Many attempts have been made to make out correlations in efficiency in various mental and motor tests with a view to their classification on the basis of function or process involved in their performance. Low correlations have usually been found between tests that seem to have many elements in common. These low correlations perhaps result from specialized skill in certain analogous performances, or in individual differences in method of performing the task assigned. The speaker presented results showing that tests can be usefully classified on the basis of the character of the influence of such a pharmacological agent as caffeine. With respect to the character of the drug effect, the action time and persistence of this effect, the tests employed at once fall into groups, the members of which resemble each other. It was suggested that this resemblance pointed to similarity of process, function, or nervous mechanism involved in performance of the tasks. Individual differences in the method of performance (revealed in the introspections) are also reflected in the character and time relations of the drug effect.

*Reactions to Simultaneous Stimuli:* J. W. TODD.

One hundred reactions were obtained from each subject to each of the following arrangements of stimuli of medium intensities: to single light, electric shock, and sound stimuli; to the following simultaneous stimuli with instructions to react to the first-named member of the pairs and groups: light and sound; sound and light; light and electric shock; shock and light; sound and shock; shock and sound; light, shock, sound; shock, sound, light; sound, shock, light.

The following conclusions are based upon the data:

1. The reaction-time to a pair of simultaneous stimuli is shorter than the reaction-time to either member of the pair presented alone.



2. The reaction-time to three simultaneous stimuli is shorter than that to a pair of stimuli.

3. The addition of another stimulus to one or to two stimuli reduces the reaction-time, and reduces it in accordance with the reaction-time to the stimulus added, *i. e.*, the addition of sound, which produces the shortest reaction-time, brings about the greatest reduction; the addition of the electric shock causes less reduction, while the addition of light, which produces the longest reaction-time, produces the least reduction.

*On the Relation of Quickness of Learning to Retentiveness:* DARWIN  
OLIVER LYON.

Close inspection shows the problem to be a very elaborate one. Not only must we settle it for various *classes* and *ages*, but we must use various *methods* of learning and, most important of all, various *kinds* and *lengths* of material. When it comes to the problem of ascertaining the subject's degree of retentiveness, various methods present themselves. Of these the two used chiefly in this work have been: (1) to have the subject write down, after a certain number of days, as much of the material as possible, and measure his retentiveness by the work produced; (2) to supply the subject with the original material and take his time for the relearning of it. Each method has its advantages and disadvantages, a discussion of which can not be undertaken in this summary. Suffice it to say that although the second method has the advantage of supplying us with an easy and accurate form of measurement, it is a question if it is a fair one to use in settling the question in hand, in that this method introduces the factor of "relearning." The method of correlation used with the second method is also open to criticism, for it may be said that it is incorrect to compare two men as having the same degree of retentiveness, one of whom takes 25 minutes to learn a passage and who one week later takes 5 minutes, and another who takes 10 minutes and three weeks later only 2 minutes, even though each may be said to have saved four-fifths of the time originally spent. A combination of both methods was used in this work by having the second method follow immediately upon the first.

The popular impression among the laity is that the slow but steady worker, even though dull, remembers his work better and longer than the more brilliant student—a corollary of which is that those who learn the quickest forget the quickest. However, in so far as reliable statistics have been gathered, it has been found that in general the most rapid learner is also the best retainer. Examination of the class records of the 132 students tested at the State Normal College at Albany also proved that the students who rank highest in their classes and who can be classed as "the most intelli-

gent" have, as a rule, the best memories. A complete expression of the various results obtained with the various methods and materials used is obviously here impossible. Generally speaking, we may say that those who learn quickly remember longest if the material memorized is "meaningful" or "logical," but that they forget quickly if the material is such as involves the memorizing of motor associations, as is generally the case with digits, words, and nonsense syllables. This statement, however, needs many modifications. Thus, for example, with *prose* the ratio is not nearly so marked by the second method as it is with the first. With several sets of students it was even reversed. *Words* are certainly more "meaningful" than nonsense syllables; yet by the second method the ratio is found to be more pronounced for words than for nonsense syllables or digits, *i. e.*, the percentage of time lost by the fast learners is greater than that lost by the slow learners; and though this is true for digits also, it seems to be more true for words. For nonsense syllables (which one would think were material *par excellence* for the memorizing of motor associations) the ratio is not nearly as high as it is for digits and words. Although averaging the two methods gives a positive correlation for both *prose* and *poetry*, the second method taken alone does not always do so. This is especially so in the case of *poetry*, where the second method almost invariably gives the result that the fast learners have forgotten more than the slow ones. We are led to suspect that the explanation lies in the fact that in the memorizing of poetry *rhythm* is a most important factor. Taking all methods and materials into consideration, we can state quite positively that the amount of difference in retentiveness between the fast learner and the slow learner is much less than is generally supposed.

The rather large mass of data obtained supply us with many rather interesting implications. (1) The retentiveness of men was found in general to be superior to that of women. (2) Individuals differ more in quickness of learning than in retentiveness. (3) The first method gives a truer index of retention than does the second, and would be more desirable were it capable of perfect measurement. (4) Memory in the main runs parallel with intelligence and there is a positive correlation between memory and scholarship. (5) This is more marked where the material is of a "logical" or "intelligible" nature, and a good memory for digits, words, nonsense syllables, sounds, colors, etc., does not necessarily go hand in hand with great intelligence. (6) With the same individual, slow learning gives greater retentiveness than does fast learning. (7) With the same individual, retentiveness is greater if the material is memorized as a whole than if memorized in parts. (8) Among the best learners those who learn the nonsense syllables rhythmically are not the best



retainers. (9) The retention of ideas is increased by seeing that no mental work, especially work of a similar nature, is allowed to follow the memorizing. (10) Auditory and mechanical learning make recall *prompt* and *rapid*, but the *amount* recalled is generally less.

H. L. HOLLINGWORTH,  
Secretary

BARNARD COLLEGE.

## REVIEWS AND ABSTRACTS OF LITERATURE

*The Mediæval Mind: A History of the Development of Thought and Emotion in the Middle Ages.* HENRY OSBORN TAYLOR. Two volumes. London: Maemillan and Co. 1911. Pp. xv + 613; 589.

So far as the present reviewer is aware, Mr. Taylor's enterprise is in many important respects a novel one. His is not merely a new and improved version of standard presentations, but a fresh and highly ingenious attempt to supply the thoughtful reader with those various kinds of information in regard to the Middle Ages which he may be expected to crave and which he would look for in vain in the innumerable learned treatises on medieval history. The writer would make us feel "the reality of medieval argumentation, with the possible validity of medieval conclusions, and tread those channels of medieval passion which were cleared and deepened by the thought." To feel these is obviously "to reach human comradeship with medieval motives, no longer found too remote for our sympathy, or too fantastic or shallow for our understanding." That the accepted routine of medieval history does not accomplish this end is patent enough to any one who has sought to understand the Middle Ages. As Mr. Taylor says, "We must not drift too far with studies of daily life, habits and dress, wars and raiding, crimes and brutalities, or trade, and craft and agriculture. Nor will it be wise to keep too close to theology or within the lines of growth of secular and ecclesiastical institutions. Let the student be mindful of his purpose (which is my purpose in this book) to follow through the Middle Ages the development of intellectual energy and the growth of emotion. Holding this end in view, we shall not stray from our quest after those human qualities which impelled the strivings of medieval men and women, informed their imaginations, and moved them to love and tears and pity."

It might seem at first sight that if once the historian deserts those seemingly staunch foundations of political, economic, and institutional history, he will be forced to choose between a history of medieval literature or of philosophy, or run the grave danger of lapsing into scattered reflections and personal impressions detached from the solid earth of chronicled fact and event. Mr. Taylor has done none of these things. He has not written a history of literature or philosophy, nor has he at any point lost his moorings and drifted about the vague and eventless sea of haphazard generalization. Before proceeding to give a somewhat careful analysis of the volumes, which is the only way of forming a correct



notion of their character and value, one more of Mr. Taylor's *caveats* may be mentioned. He is not occupied, he says, with "the brutalities of medieval life, nor with all the lower grades of ignorance and superstition which have attracted many previous writers. He has not had these things very actively in mind when using the expression *medieval genius*. That phrase, and the like, are to be understood as signifying 'the more informed and constructive spirit of the medieval time.'"

Book I. is devoted to "The Groundwork." Here the author avails himself of the elaborate preparation for his work that he has made in writing his two admirable volumes on "Ancient Ideals" and his suggestive "Classical Heritage of the Middle Ages." As every one should know who has given any attention to the matter, the Middle Ages are far less original and peculiar in thought and institutions than was formerly supposed. The medieval culture is really the culture of the later Roman Empire—at any rate, no real understanding of the Middle Ages is possible to one unfamiliar with that culture. One can not jump from the Golden Age of Augustus to the barbarian invasions without missing just what he most needs to know in order to estimate the intellectual and emotional life of the thousand years following the disruption of the Empire. Accordingly, Mr. Taylor properly assigns some two hundred pages to the following topics: "The Genesis of the Medieval Genius," "The Latinizing of the West," "Greek Philosophy as the Antecedent of the Patristic Apprehension of Fact," "Intellectual Interests of the Latin Fathers," "Latin Transmitters of Antique and Patristic Thought," "The Barbaric Disruption of the Empire," "The Celtic Strain in Gaul and Ireland," "Teuton Qualities: Anglo-Saxon, German, Norse," and, finally, "The Bringing of Christianity and Antique Knowledge to the Northern Peoples." This portion of his work would form an independent treatise of the greatest value to those laboring under a variety of vain delusions due to the habit of the older historians of attempting to begin their histories of the Middle Ages with the so-called fall of Rome. Fustel de Coulanges, Ebert, Dill, Glover, and others have all made their contributions to the subject, but Mr. Taylor has done the work over from his own standpoint, basing his conclusions on his own independent research. He has by no means reproduced his "Classical Heritage," which supplements in certain respects the present work. In Book II. he bridges the gap between the waning culture of the sixth and seventh century and the clearly reviving culture of the twelfth and thirteenth. Toward one hundred and fifty pages fall to these early Middle Ages, to the Carolingian period and the mental aspects of the eleventh century in Italy, France, Germany, and England.

The great bulk of the work is properly taken up with the twelfth and thirteenth centuries, which, with their immediate antecedents, appear to many writers to constitute a truly remarkable and instructive period, which can be deemed from the standpoint of its constructive achievements, in art, law, education and thought, one of the chief sources of that culture which has prevailed down very nearly to the present, and which is responsible for many still current notions and social adjustments.

Indeed the so-called Renaissance and the Protestant Revolt did far less to undermine the emotional and intellectual life inherited from the thirteenth century than has commonly been assumed.

Books III. and IV. deal with the ideals first of the saints and secondly of the knights. Peter Damiani—whom Mr. Taylor has brought to life—St. Bernard, Francis of Assisi, and holy women, like Hildegard of Bingen and Elizabeth of Schönau, illustrate the beauties of ascetic devotion, while the “spotted actuality,” as the author happily terms it, may be judged from the devout obscenity of Cæsar of Heisterbach, the prosaic *chronique scandaleuse* of Archbishop Rigaud’s pastoral visits, and Salimbene’s coarse fun. But Mr. Taylor betrays no *Schadenfreude* in the compromising details of baseness, nor does he apologize for them. They do not prove to him that the ideals of the time were mere hypocrisy, but merely that ideals in the Middle Ages excelled conduct, as is their wont. In describing “society,” knightly virtue is illustrated by Godfrey of Bouillon and St. Louis, reinforced by the belated Froissart. There is a chapter on Parzival, “the brave man slowly wise,” and another beautiful one on “The Heart of Heloise,” surely the loveliest woman in some centuries of whom we are fortunate enough to know anything.

Book V. shows how symbolism lay back of the art, literature, and whole thought, emotion, and speculation of the time. This subject is one of the most important for the student of the Middle Ages, whatever his special interests. Mr. Taylor illustrates current scriptural allegorizing by extracts from the highly imaginative Honorius of Autun; the “symbolic universe” finds its exponent in Hugo of St. Victor.

In Book VI. Mr. Taylor proceeds to a consideration of two important elements in the medieval heritage from the Roman Empire, its Latinity and its law. Every one who busies himself with the Middle Ages soon comes to feel that medieval Latin often has great literary charm, if one does not insist on wondering what Cicero or Horace would have thought of Abelard, St. Thomas Aquinas, or Thomas of Celano. Mr. Taylor shows a lively appreciation of both the beauty and the defects of what used to be called “low” Latin. He has chapters on the medieval attitude toward the Latin classics—for the Greek books had, with the exception of Aristotle, pretty much all gone by the board—together with many apt examples of medieval prose and verse. To any one with some knowledge of classical Latin and a fair degree of literary feeling, these chapters will prove among the most fascinating in the work. As for the chapter on the Roman and Canon laws, Mr. Taylor, who is an acknowledged authority on an important branch of contemporaneous law, is well qualified by his studies of earlier days to quench the easily satiated thirst of most of his readers for knowledge of these themes.

The second half of Volume II. is devoted to “The Ultimate Intellectual Interests of the Twelfth and Thirteenth Centuries”—to what, in short, is commonly called scholasticism. To understand in some degree the spirit and scope of scholasticism, it may be remarked, is to understand a great many tendencies of the human mind which can be readily observed at the present day, without going back to Albert or his gifted



disciple Thomas. After a consideration of the origin and general nature of scholastic speculation and its development in the twelfth century under the auspices of Abelard, Peter Lombard and others, Mr. Taylor gives an account of the rise of the Aristotle-ridden universities and the intellectual rôle of the Mendicant friars. Bonaventura, Albertus Magnus, and Thomas each has a chapter to himself, as well as the intempestive Roger Bacon and those daring spirits, Duns Scotus and Occam, who exercised so potent an influence upon later thinkers. The final chapter is admirably conceived—"The Mediæval Synthesis" which Dante offers in his "Divine Comedy." Every one likely to read Mr. Taylor's book is likely to have Dante on his shelves, and equally unlikely to possess the works of Albert or the "Opus Majus" of Bacon. If, as our author maintains, Dante's long poem is but a poetic *summa* of medieval thought and belief, the reader will find in "The Mediæval Mind" the most elaborate and satisfactory prolegomenon ever prepared for the "Divina Commedia."

Few readers who follow under Mr. Taylor's guidance the long way from Augustine to Dante will leave him without a somewhat bewildering sense of the extraordinary patience, sympathy, and intelligence which has produced the work in hand. There is ever so little that is merely formal or second-hand; the writer has read the works of others, but does not copy them out in his pages. He has doubtless been affected by their views here and there, but his own impressions and convictions are based on a first-hand acquaintance with the medieval writings themselves. He has found time and has had the industry and system necessary at once to collect his material and to assimilate it and "react" on it. To him belongs the highest tribute that the historian may win; he is at once the *érudit* and the *savant*—and of few can this be said.

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*A History of the Cavendish Laboratory, 1871-1910.* London: Longmans, Green, & Co. 1910. Pp. xi + 342.

Under this modest title we have a really important chapter in the history of scientific thought. On December 22, 1909, J. J. Thomson, on whom has fallen the mantle of Maxwell, completed the twenty-fifth year of his tenure of the Cavendish professorship of experimental physics at the University of Cambridge. In deciding to commemorate the event with a *Festschrift* his colleagues and pupils eschewed the usual form which such volumes now take, viz., that of a series of technical monographs on points of special interest to the writers. Instead they adopted the plan of writing a history of the Cavendish Laboratory, over which Clerk Maxwell, Lord Rayleigh, and J. J. Thomson have in turn presided. The Cavendish Laboratory is easily the foremost British center of physical research, and of late years students from all parts of the world have come to work there. An account of the work done in this laboratory should, therefore, have a great interest for general students of science. Moreover, the plan of the volume, as shown in the letter addressed to the contributors, states:



"It is understood that the present volume should be the record not of what work was done, but of *how that work came to be done*. It is thought that the evolution of the ideas which have inspired physical teaching and research in Cambridge, and the part played in that evolution by the many eminent men who have worked in the laboratory, should be traced as far as possible; and it is hoped that the narration may be made in such a way as to be of interest even to those who are not professed students of our science."

After an introductory chapter on how the laboratory came to be built, there follows a chapter on the Clerk Maxwell period by Professor Shuster, then one on the Rayleigh period by Professor Glazebrook, and a survey of the last twenty-five years by J. J. Thomson himself. These are followed by four detailed surveys, viz: the period of 1885-1894 by Professor Newall, the period of 1895-1898 by Professor Rutherford, the period of 1899-1902 by C. T. R. Wilson, and the period of 1903-1909 by N. R. Campbell. The concluding chapter by Professor Wilberforce treats of the development of the teaching of physics. In the appendix we have some forty odd pages devoted to a list of the published memoirs based on the work done in the Cavendish Laboratory, and also a list of the workers who pursued their researches there, with their official positions, etc. The name index and the subject index which follow can not but enhance the value of the book.

As was to be expected, the various contributors did not interpret their instructions in exactly the same way. Some emphasize the personal and the social side of the work, the inspiration of the great leaders, the genial spirit of cooperation prevailing among the workers, etc. Others describe the relation of the various researches "as they appear in a general and impersonal review" (p. 226).

Professor Shuster's account of the Maxwell period is mainly personal. He describes his relations with Maxwell and the work done in the laboratory which especially interested Professor Shuster. In this, as well as in the introductory chapter, however, we get occasional flashes which illumine for us not only the personality of Maxwell, but also the general ideas which animated his labors. In the seventies it was generally supposed that the only function of a physical laboratory was to measure physical constants. Maxwell, admitting that it is characteristic of modern experiments that they consist principally of measurement, went on in his introductory lecture to add: "Our principal work, however, in the laboratory must be to acquaint ourselves with all kinds of scientific methods, to compare them, and to estimate their value. It will be a result worthy of our university . . . if, by the free and full discussion of the relative values of different scientific procedures, we succeed in forming a school of scientific criticism, and in assisting in the development of the doctrine of method" (p. 17).

It seems almost incredible that Maxwell, by many considered the successor of Newton, should have had only two or three students at his lectures, and that his laboratory equipment should have been so small that he should have found it necessary to report after a few years: "During the present term a skilled workman has been employed in the laboratory,

and has already greatly improved the efficiency of several pieces of apparatus." Genius and enthusiasm, however, seem to have been more effective than numbers and means, so that the amount as well as the quality of the work turned out was truly wonderful.

The period of Lord Rayleigh's professorship (1879-1884) was devoted especially to the determination of electrical units; and Professor Glazebrook introduces his account with a remarkably clear exposition of the character of the fundamental units of physics, leading up to the explanation of how the ratio between the electrostatic and the electromagnetic units suggests the electromagnetic theory of light.

Professor Thomson's own account is a genial review of the social side of the work as well as its relation to the demands of Cambridge University. Incidentally and parenthetically we have in a few pages (pp. 92-96) a lucid account of the considerations which led him to formulate the corpuscular or electronic theory of matter.

The detailed survey, by Professor Newall, of the work done in the laboratory between 1885 and 1894 contains a great deal of very valuable material under the subheadings: Experimental Optics, Electro-optics, Properties of Matter, Heat and Thermometry, Electricity and Magnetism, and the Passage of Electricity through Gases. The value of this and other chapters is, however, lessened for the general reader by the fact that the authors do not, or can not, owing to the limitations of space, indicate the importance or subsequent outcome of the experimental work which they describe. Thus on page 133 we are dryly told that a number of experiments by Roiti, Lecher, Wilberforce, and Rayleigh, to detect the influence of the motion of a medium on the velocity of light, failed. In view of the fact that this very question has since come to the forefront of physical discussion, and that the relativity theory is based entirely on these and similar "failures," some comment should have been vouchsafed to "those who are not professed students of our science."

The period from 1895 to 1898 was a momentous one in the history of modern physics, and the part that the Cavendish Laboratory played is told by Professor Rutherford, who was a student of J. J. Thomson's during this period, and who subsequently won the Nobel Prize for his researches on radium emanations. Professor Rutherford indicates how "amongst other discoveries it [the Cavendish Laboratory] witnessed within its walls the final proof of the nature of the cathode rays, the advent of the negative corpuscle or electron, as a definite entity, the experimental proof of the character of the conduction of electricity through gases, and the initial analysis of the radiations from radioactive matter" (p. 159).

The chapter by N. R. Campbell is perhaps more than any other in the book written with an eye for "the reader who is not a professed student of physics." It is full of suggestive ideas, and is from a philosophic point of view perhaps the most satisfactory.

The book is handsomely printed and is in every way pleasant reading. Natives of Hoboken will be sorely disappointed to find Stevens Institute credited on p. 330 to Hobsten, N. J. (wherever that may be). Most



American readers will likewise prefer *class of men* to *class of man*. A more serious misprint, liable to mislead the unwary reader, occurs in the last line on p. 93. The conductivity was due to something mixed with the *gas*, not with the *glass*.

Professional philosophers who light-heartedly speak of atoms and molecules as mere "convenient symbols" will find the reading of this book, or of some of the memoirs mentioned in it, very troublesome. For not only are these "mere concepts" conceived as objective physical entities, but people in Cavendish Laboratory persist in counting them, weighing them, measuring their dimensions, and determining the electrical charges on the minute corpuscles which compose these bodies. No doubt the experimental work is largely interlarded with a great deal of conscious or unconscious assumption; and it can not be said that very clear lines are here always drawn between experimental results and the theories which are intended to explain them. Nevertheless, until some other explanation of this vast mass of experimental work is forthcoming, the theories of Joseph J. Thomson and his disciples will—at least in the eyes of those familiar with the facts—hold the field.

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### JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. July, 1911. *The Ontological Problem of Psychology* (pp. 363-385): GEORGE TRUMBULL LADD. — Three topics are considered: first, the more or less scornful objections to the whole subject of ontology; second, the relation of ontology to real human interests; third, the progress attained toward answering the ontological problem of psychology. The greater part of the article is devoted to a discussion of the first topic. The present condition and future prospect of the ontological problem of psychology is considered and illustrated from the corresponding problem in the physical sciences. The concepts space, time, force, and substance are analyzed. *Knowing Things* (pp. 386-404): JOHN E. BOODIN. — "In dealing with things *as known*, we place ourselves at once at the pragmatic point of view—things as they must be *taken* in our systematic experience." "Qualities must be taken as objective, if they enable us to identify and predict the things with which we must deal." Qualities are further distinguished from sensations, relations, and values. *Professor Pringle-Pattison's Epistemological Realism* (pp. 405-421): ALFRED H. JONES. — "The salient feature of this theory . . . consists in a substitution of what the author calls epistemological realism or dualism for the metaphysical dualism of English and continental philosophy. This new form of dualism differs from the traditional form of the theory in that it makes the independent or realistic existence of objects a fact of knowledge or conscious experience instead, as is usually done, of reality or existence." *Reviews of Books* (pp. 422-440). Bertrand Russell, *Philosophical Essays*: EVANDER BRADLEY MCGILVARY.



Pierre Mandonnet, *Siger de Brabant et l'Averroïsme latin au XIII<sup>me</sup> siècle*: ISAAC HUSIK. Bruno Bauch, *Das Substanzproblem in der griechischen Philosophie bis zur Blütezeit*: W. A. HEIDEL. Dicran Aslanian, *Les principes de l'évolution sociale*: R. M. MACIVER. *Notices of New Books. Summaries of Articles. Notes.*

REVUE PHILOSOPHIQUE. August, 1911. *Les corrélations psychophysiques* (avec fig.) (pp. 115-135): DR. SIKORSKI. — Experimental results correlating sphygmograms and pneumograms with different types of mentality, normal and abnormal. *La définition du hasard de Cournot* (pp. 136-159): G. MILHAUD. — A defense of the coherency of Cournot's definitions of chance against current criticism. *La sociologie de M. Durkheim* (2e. et dernier article) (pp. 160-185): G. DAVY. — The remainder of the exposition of M. Durkheim's sociology and a brief estimate of its significance, for it really leads to philosophy and needs completion from philosophy. *Analyses et comptes rendus.* C. Dunan, *Les deux idéalismes*: A. PENJON. A. Binet, *L'année psychologique*: H. PIÉRON. A. Michotte et Prum, *Étude expérimentale sur le choix volontaire et ses antécédents immédiates*: G. L. DUPRAT. T. V. Moore, *The Process of Abstraction*: G. L. DUPRAT. Warner Brown, *The Judgment of Difference with Special Reference to the Doctrine of the Threshold*: B. BOURDON. Jacks, *The Alchemy of Thought*: G. L. DUPRAT. Martini, *I fatti psichici riviviscenti*: FR. PAULHAN. Chiappelli, *Dalla critica al nuovo idealismo*: L. DAURIAC. *Revue des périodiques étrangers.*

REVUE PHILOSOPHIQUE. September, 1911. *Vie végétative et vie intellectuelle* (pp. 225-257): F. LE DANTEC. — A reply to M. Lalande's objections to the definition of life that the author has advocated for the last fifteen years. *La catégorie de relation* (pp. 258-277): A. CHIDE. — An attempt to trace the empirical genesis of this category in opposition to dialecticians from Heraclitus down. *Le pragmatisme et l'esthétique* (pp. 278-284): J. PÉRÈS. — Pragmatism contains certain esthetic principles and the author undertakes to exhibit them, together with certain verifications in fact. *Observations et documents.* *Le rêve et la pensée conceptuelle*: DUPRAT. Whitehead and Russell, *Principia Mathematica*: H. DUFUMIER. L. Couturat, O. Jespersen, R. Lorenz, W. Ostwald, L. Pfaundler, *Welt-sprache und Wissenschaft*: A. L. Déjerine et Gauckler, *Les manifestations fonctionnelles des psychonévroses*: DR. CH. BLONDEL. J. Dubois, *Le problème pédagogique*: L. DUGAS. P. Mandonnet, *Siger de Brabant*: F. PICAVET. Noel, *Œuvres complètes de J. Tauler*: F. PICAVET. Baeumker, *Witelo, philosophe et naturaliste du XIII<sup>e</sup> siècle*: F. PICAVET. L. Adelphe, *De la notion de souveraineté dans la politique de Spinoza*: G. RICHARD. C. Richter, *Nietzsche et les théories biologiques contemporaines*: L. ARRÉAT. R. M. Wenley, *Kant and his Philosophical Revolution*: J. SEGOND. Tari, *Saggi di estetica*: C. LALO. *Revue des périodiques étrangers.*

Baldwin, James Mark. *Thoughts and Things or Genetic Logic.* Volume III. London: George Allen & Co., Ltd.; New York: The Macmillan Co. 1911. Pp. xvi + 284. \$2.75.

- Boutroux, Emile. *Science and Religion in Contemporary Philosophy*. Translated by Hereward Nield. New York: The Macmillan Company. 1911. Pp. ix + 353.
- Claparède, Ed. *Experimental Pedagogy and the Psychology of the Child*. Translated by Mary Louch and Henry Holman. New York: Longmans, Green and Co. 1911. Pp. viii + 322.
- De Coubertin, Pierre. *L'analyse universelle*. Paris: Félix Alcan. Pp. 155.

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### NOTES AND NEWS

ONE of the great founders of the science of physical anthropology has passed away in the person of Dr. Paul Topinard. He was a pupil, colleague, and friend of the illustrious Broca, a "man who," Dr. Beddoe said, "positively radiated science and the love of science; no one could associate with him without catching a portion of the sacred flame. Topinard has been the Elisha of this Elijah." Topinard made valuable investigations on the living population of France, and many researches in various other branches of physical anthropology. In 1876 he published a relatively small book, "*L'Anthropologie*," for which he obtained a gold medal from the Faculté de Médecine de Paris, and a second prize from l'Institut; it was translated into English, and published in the Library of Contemporary Science in 1878. This book is packed with information, as it contains numerous measurements and an exposition of methods of investigation; it has long been a guide for students and a manual of reference for travelers and others. In 1885 he published his "*Éléments d'Anthropologie générale*," a monumental work of 1157 pages, being the substance of his courses of lectures and laboratory instruction for eight years in the École d'Anthropologie. It is not the compilation of a mere library student, but is permeated by the author's personality and contains the results of his very numerous and varied researches; in it he broke free from the traditions of the monogenists and polygenists, and incorporated the new ideas spread by Darwin and Haeckel. This great work exhibits his vast erudition and untiring energy, and it is indispensable for all physical anthropologists. It is needless to add that Dr. Topinard has gained honors in his own country and the homage of his colleagues all over the world.—*Nature*.

MR. N. C. NELSON, instructor in anthropology in the University of California, has been appointed assistant curator in the department of anthropology in the American Museum of Natural History. He will assume his duties next June and give special attention to North American archeology.

DR. W. R. BOYCE GIBSON, lecturer in philosophy at the University of Liverpool, has been appointed professor of mental and moral philosophy at the University of Melbourne.

A GUIDE to "The Philosophy of Bergson," by A. D. Lindsay, a young Scotchman, will be brought out by Doran.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### ON DEFINITIONS AND DEBATES

THE American Philosophical Association has lately devoted much attention to an earnest and most important effort to render its general discussions more unified, more profitable, and more conducive to the furtherance of agreement among students of philosophy. There is no doubt that both the Executive Committee of the Association and its "Committee on Definitions" have labored most self-sacrificingly to further this effort, so far as they could. Where the spirit shown has been so serious and so unselfish, criticism may appear ungracious. But the members of the committee have asked for criticisms. The issue involved is not as to their unquestionable sincerity and devotion, but as to the future policy of the Association, and as to the best way of securing, in the discussions at our meetings, the right sort of philosophical communion and community amongst the members. Our committees consist of valued and honored friends. But the Association itself is the "greater friend." We all wish it to find the best way of doing its work. We hope that it will long outlive our own generation. We want to initiate methods of cooperation which, as they come to be improved by experience, will continue to grow more and more effective as the years go on. To this end, we must be ready to criticize freely the first efforts to organize such methods of cooperation. I cheerfully submit to the severest scrutiny this my own effort at such criticism.

#### I

In the report of the Executive Committee, printed before the last meeting of the Association and used during the meeting, a brief statement leads to the announcement of the subject selected for debate. Those who were appointed to lead the debate, as we are told in this report, "decided to limit themselves to the discussion of 'The Relation of Consciousness and Object in Sense Perception.'" Nobody ought to doubt, I think, that this selection was a good one. Acting under the power conferred upon the Executive Committee by the



previous meeting of the Association, the Executive Committee hereupon voted "to have the selection of debaters carry with it the appointment to the committee on definitions,"—the President of the Association acting as the fifth member of that committee. The committee in question, with the assistance of the Secretary of the Association, undertook, under the authority of the original vote of the Association, "the analysis and preparation of the problem for discussion," and "definitions of terms pertaining to" the "subject, for the use of those participating in the debate." That the "analysis," "the preparation of the subject," and the "definitions of terms," were, in the main, satisfactory to the leading debaters who had been appointed by the Executive Committee of the Association, was thus secured by the fact that the subject was prepared for discussion by a committee consisting of these debaters themselves with the assistance of the President and the Secretary. In their report, the Executive Committee, still acting, of course, under the authority of the Association, invited "members at large" to participate in the debate, by written papers, or otherwise, and, in doing so "to use, as far as possible, the definitions and divisions made by the committee."

The report of the Committee on Definitions, printed along with the Executive Committee's report just cited, begins by emphasizing the importance of the enterprise which the Association had thus, through the Executive Committee, assigned to its care. "Such an extensive attempt," it said, "at an organization of cooperative philosophical inquiry, has not hitherto been made by this Association." "The committee believes such organized and cooperative inquiry to have important possibilities for the future of philosophical study. It therefore ventures to express the hope that members will make a special effort to enter into the spirit of the undertaking, to review the recent literature of the subject, and, in their participation in the discussion, to conform, for the time being, to the general plan of procedure here suggested."

## II

It would have been indeed a very ungracious task for any member to take part in the general discussion to which all members of the Association were thus invited, unless he could feel cordially willing to accept all the essential features of the "preparation" and of the "definitions" which, in its report, the Committee on Definitions hereupon proceeded to set forth. Of the competency of the Committee to determine the rules of the proposed debate, so far as its own members were concerned, there could be of course no doubt. Of its authority, by virtue of the original vote of the Association, and under the conditions of its appointment, to ask members to follow its rulings with scrupulous care, in case they chose to participate in the

general discussion at all, there could again be no doubt. The Executive Committee added its express request, as we have seen, to that of the Committee on Definitions; and hereby reasonably bound all who wanted to debate to do their best to confine their usage of terms and their definition of the issues to the forms prescribed by the Committee on Definitions. The experiment in cooperative philosophical inquiry thus for the first time tried, could not fairly be interfered with by any voluntary participant through an expression of his unwillingness—if he felt such unwillingness—to accept the Committee's analysis and definitions of the problem as sufficient for the purposes of the debate. The Committee defined certain terms: *a*, *b*, *c*, etc. It proposed certain questions for debate relating to matters defined in these terms. Such a question might take the form: "Are all the members of the class *ab* members of the class *c*?" It asked the members who took part in the debate to accept these definitions and formulations of questions as the topics of inquiry. Nobody could meet the express wishes of the Committee, and discuss the topics which it wanted to have discussed, unless, accepting for the time the definitions proposed, he was ready to answer such questions as "Is every *ab* a member of the class *c*?" in the spirit of one who considered the question at issue important, and the issue well taken. If he thought the issues to be ill defined by the Committee, and unworthy of the sort of attention that the Committee required, he had no proper place in this particular experiment in cooperation. It was in that case his duty to leave the general debate to other members. For nobody was asked to debate in the meeting the question whether the Committee had well formulated the issues. Members were asked to cooperate under the rules laid down by a body authorized to restrict the field of inquiry for the sake of ensuring cooperation. Nobody could attempt the cooperation, unless he was willing to abide by the restrictions.

The responsibility of the Committee was of course as great as its authority. Its duty was—and no doubt its intention was—so to state the issues for debate that any or all of the philosophical opinions about those issues which are worth discussing, could be discussed. And of course a proper discussion of the issues could not include, at the meeting, such objections to the Committee's report as I now offer: The debater was required to follow the assigned rules of the game. He was not to discuss their value. He was to play under these rules. Hence, if his views about the issues were worth discussing at all, the Committee's formulas ought to have left him unhampered.

My present question is: How did the Committee accomplish this duty? Whose cooperation did it make possible, in case the one who cooperated was understood to accept the plan of debate as printed?



I am sorry that the somewhat elaborate "preparation" of the question set forth by the Committee will force me to make my answer to these questions tedious. But I can hardly be blamed for taking the Committee's formulas seriously, and, in consequence, analyzing them with care.

### III

After a study of the possible issues, the Committee presented, as the first of its questions for debate, the following: "In cases where a real (and non-hallucinatory) object is involved, what is the relation between the real and the perceived object with respect (a) to their numerical identity at the moment of perception, (b) with respect to the possibility of the existence of the real object at other moments apart from any perception?" This question was to be understood, by all who were to cooperate, as determined by the meanings assigned by the Committee to the terms "object," "perceived object," and "real object."

The definitions of these terms, as printed in the Committee's report, are as follows:

By *object* in this discussion shall be meant any complex of physical qualities, whether perceived or unperceived and whether real or unreal.

By *real objects* is meant in this discussion such objects as are true parts of the material world.

By *perceived object* is meant in this discussion an object given in some particular actual perception.

It appears, from the context, and from the formulation of the question for debate quoted above, that the Committee very naturally laid some stress upon the fact that what it meant by "some particular actual perception" involved an occurrence at some "moment of time," called also "the moment of perception"; or, again, involved some determinate set or sequence of such momentary occurrences, "in some particular individuated stream of perceptions," that is, in the mind or in the experience of some person.

The Committee did not define what it meant by the adjective "given," used in the above-cited definition of "perceived object." Of course the participants in the discussion would seem to be in so far left free to understand and to use that word in any reasonable and customary fashion that is consistent with the context of the report; and it is plain that the members of the Committee were entirely unaware that by their use of this word they in the least restricted the reasonable liberty of anybody. As a fact, however, their definition of the term "perceived object," taken together with their formulation of their question, and the context in which they used the word *given*, involved a very serious interference with the range of the cooperation which they invited. For what is "given" in a



“moment of perception,” and what is not “given,” and the sense in which anything can be “given at a particular moment,” and the sense in which what is “given” can also be an “object”—all these are not topics of a merely pedantic curiosity about words. They are matters which have been lengthily, frequently, and momentarily discussed, both in the controversies about perception and in other philosophical inquiries. Let us see how far and how profitably such questions could be discussed by any one who was ready to be guided, in the debate, by the rules laid down by the Committee.

#### IV

The word *given* has a wide range both of popular and of technical usage. Amongst its more technical meanings, *three* very readily occur to mind as possibly in question when the word is employed in a philosophical discussion.

In a very wide sense, which is rendered in special cases more determinate by the context, *given* means: “Assumed, presupposed, agreed upon, accepted, taken as if it were known—but always *with reference to* some specific purpose, inquiry, undertaking, discussion, or plan of action.” This sense is of course a very elastic one, and is often convenient, just because the context which further defines the plan or inquiry in question so easily specifies the conditions *subject to which* something is declared or agreed to be *given*. But, for this very reason, *given*, if used in this first sense, means *conditionally given*, subject to the agreements or presuppositions in question, and, in this sense, does not mean: “present in some particular actual perception.” In this wide sense of *conditionally given*, the Sherman Act is *given*, when legal controversies about certain combinations in restraint of trade are in question. And, for the purposes of the discussion, or of the present paper, the Committee’s report, with its definitions, requests, statements of the issue, and so on, is itself *given*, to any one who wants to engage in the proposed discussion, or to read this paper. Any conceivable real or ideal object, principle, abstraction, fact, or fabulous invention, any portion of the universe, or the whole of it, could be *given*, in this sense, to somebody for some purpose. Yet the word *given* would not hereby be rendered hopelessly vague, because, each time, the context or other connections of the plan or inquiry that was to be undertaken would enable one to specify the conditions which made the object or principle, in this sense, hypothetically or conventionally *given*.

A second and also wide sense of the term *given* introduces the word into one’s ontological vocabulary, and employs it as equivalent to *existent*, *actual*. God or an atom, Herbart’s reals or Leibniz’s monads, the events of history or the interior of the earth, anything

believed by anybody to be a fact or a reality, may by that person be declared, in this sense, to be a *given* fact in the world, or simply to be *given*. This meaning is of course specified, on occasion, by naming the place, time, or other definable region of being, in which the fact in question is asserted to be a fact. This signification of the word *given* is frequent in usage, but is often inconvenient, because of the danger of confusion between this and the third meaning of *given*—a danger which occasionally arises.

In a third sense, *given* means *present to or in* the "experience" or "perception" or "feeling" or "state of mind" of somebody. I put in quotation marks the words and phrases that specify how or wherein the *given* is, in this sense, *present*, merely to indicate that, in any effort to specify this sense, one deals with matters which are amongst the most obvious and at the same time most problematic topics that philosophy has to consider. In order fully to explain *what* it is which in this sense is, for somebody, or at some time, *given*, that is, *present* or *immediately known*, or *directly experienced*, you need to face *all* the problems about "immediacy" and about "experience" and about the "self" and about "time" and about the relation of the relational aspect of the *given* to its non-relational aspect—all the problems, I say, which have most divided the philosophers. These are also the problems that have disturbed the seekers after some sort of "intuition" or of religious "faith," ever since the Hindoo seers first retired to the forests (or in other words "took to the woods") in their own vain effort to solve that most recondite of human mysteries, the mystery regarding *what* it is that is *given* in this third sense. From Yajnavalkya to Bergson this problem of the *given* has troubled men.

This sense of the word *given* is frequent in discussion. It is extremely useful in attempts at defining the various problems whose nature and variety have just been indicated. But unless one bears in mind how difficult and recondite these problems are, he is likely to employ the term *given*, in this third sense, rather to escape from facing the greatest issues of philosophy than to prepare the way for further reflection upon them. Of course an important part of the task of anybody who calls anything *given*, in this third sense, is to specify what sort of presentation it is upon which he is insisting.

Of these three senses of the word *given*, it seems plain, from the context, that the Committee intended some specification of the third sense to be in question. For their report uses the phrases: "at certain times present in a given individuated series of perceptions"; "given in some particular actual perception." Even if *given* were here supposed to be used in the second of the above-mentioned senses, *this* account of the "locus," i. e., of the place and time wherein some-



thing is for the purposes of the definition of a *perceived object*, *given*, would make the second sense (specified so as to apply to the case here in question) identical with some specification of the third sense. For even if the word *given* meant "is a fact," is "actual," the "perceived objects" of which the Committee speaks are here specified simply as "figuring" or as "present" "in some particular actual perception." That, then, is the way, or at least one way, in which those "perceived objects" are to be, just then, facts. And in this way the Committee means *given* to be understood.

As to the first sense, the Committee is not defining its "perceived objects" as *given* to the percipient in the sense in which the Sherman Act is given as the agreed presupposition of a legal controversy. Of course, I repeat, *all* of the Committee's definitions, topics, objects, and problems are to us members *given*, in our first sense of the word *given*, for the purpose of the proposed discussion, and as its agreed or at least supposed basis. But the "perceived objects" are said by the Committee to be *given* in "some particular actual perception," at one or at several moments of time, and in the individuated "stream" of some percipient's perceptions. The sense of *given* in the Committee's definition of *perceived object* is, therefore, some specification of the third of the senses above indicated. Hereby, then, the debater who can cooperate seems to be bound in advance by the Committee's report. In so far the wording and the context leave him *not* free to interpret the word *given* as he pleases.

What is the result? The committee has certainly *not* left the cooperating debater free as to his definition of the word *object*. An *object*, in this discussion, is a "complex of physical qualities." It is of course left to the debater to hold whatever view he holds as to what a "complex of physical qualities" actually is and involves. But this latter view will no longer be a matter of merely verbal conventions. Of course such "complexes" as "*yellow, hard, and extended,*" or "*brown, smooth, and solid,*" will be amongst the physical "objects" denoted by such phraseology. The debater will have his opinion as to what such "physical" "complexes" are, and as to what conditions they must meet in order to be "physical" at all. These views will no longer be reducible to definitions of terms. The debater's metaphysics or epistemology or perhaps just his opinions as a student of some physical science, will now come into play. If he is to cooperate, he must indeed accept the Committee's definition of *object*. But his doctrine about what makes a "complex" a "physical" complex, will concern issues no longer verbal, but most decidedly "material." Let us still try to see what follows from this restriction of the meanings of *object* and of *given*, when taken together.



Suppose that some philosopher should be asked to cooperate whose views about what a "complex of physical qualities" is, and especially about what such a complex is when it is a "true part of the material world," required him to say: "Such an object, such a complex, however *real* it is (and also in case, in the Committee's sense, it is *unreal*), *never* is, and by its very nature never can be, for any human being, 'present in some particular individuated stream of perceptions,' at any moment of time; and (at least for a human being) never can be *given* in some particular actual perception." Suppose the philosopher held this view, not because he was disposed to favor or to dwell upon verbal controversies, but because this was his opinion as to a material issue, namely, as to what a physical "complex" is, and as to what in this sense is *given*. Suppose, namely, that he had inquired into what is or can be *given* at any moment, in any human perception, or to any human being. Suppose that he had considered, with such care as he could use, why we believe in any physical facts whatever, and what is the essential truth about the very nature of such facts, as we believe in them. Then his views would be his own, and would not depend upon his terminology. Nevertheless, when asked to cooperate, he would be bound to accept the Committee's definitions. Accepting them, what would this philosopher be obliged to say about the class of *perceived objects* as defined by the Committee (not, of course, as he himself would have preferred to define what *he* calls perceived objects)?

Such a philosopher could only say: "For a man of my opinions there exist no *perceived objects* (in the Committee's explicitly stated sense of that term), whether *real* or hallucinatory. For physical 'complexes of qualities' are of such nature as forbids their being *given*, at any moment, in any human being's stream of perceptions. Therefore, for me, the Committee's class of 'perceived objects' is a 'zero-class' (in the sense of modern symbolic logic). It is an 'empty' class. Herein it resembles the class of 'horses that are not horses.'"

Since the problem of the present paper principally relates to the question: What part could a philosopher who held such views properly take in the debate, under the Committee's rules and definitions? I shall very properly be met, in my turn, at this point, by the counter-question: Are there any such philosophers? If so, are their views worth discussing?

## V

In answer to this counter-question I may first cite the words of the Committee itself. On page 11 of its report, in enumerating the various current definitions of "consciousness," it refers to the following view: "Consciousness is the instrumental activity of an organism with respect to a problematic or potential object. Thus the

nature of consciousness is such as to imply the artificiality of the first question, and accordingly of its several answers." *Such* an opinion, then, exists. We all think it worthy of careful discussion.

I am far from defending this reported definition of consciousness; and I am very far from attempting to speak on behalf of the distinguished representative of this view to whom the Committee here refers. I can only say this: *Were* the reported view my own view of the nature of consciousness, I should be obliged to say that the "problematic or potential objects" to which my "instrumental activity" had "respect," were *not* the Committee's "perceived objects" at all; and also that *if* my "problematic objects" were what I supposed to be identical with the "complexes of physical qualities" which the Committee asked me to call "objects," then whatever was *given* in my "individuated stream of perceptions" would *not* be such an object. So that, in this case, the first question would be for me not only "artificial," but a question about a zero-class. And the Committee's second question, that about consciousness, would require me, if I also accepted the Committee's own definition of consciousness, to explain how this "instrumental activity" of my own organism was "that by virtue of which" the members of this zero-class—that is, the *objects* which for me would be no *objects* at all—were "numerically" or otherwise distinguished from something else. Hereupon I should indeed be at a loss how to discuss the Committee's second question any more usefully than the first question, unless, indeed, I in one way or another declined to accept the rulings of the Committee as to the conduct of the discussion, either by ignoring or by setting aside their definitions and requests. I should be sure that in any case the Committee had *not* succeeded in so stating the two questions as to make my opinions a natural part of the inquiry that they defined. I should feel myself excluded from profitable cooperation under the rules.

But this is no place to expound in detail the views of any one thinker. Let me next simply point out theses which every one will find more or less familiar and which, in various contexts, enter into known doctrines about perception. Let me point out that whoever holds these theses ought to regard the Committee's definition of a "perceived object" as the definition of a zero-class.

Suppose, for instance, that one holds, with J. S. Mill, that a physical object, such as any "complex of physical qualities," is essentially "a permanent possibility of sensation" in case it is "a true part of the material world" at all, while, in case of hallucinatory or illusory physical objects, the object *seems* to be such a "permanent possibility" when it is not so. One who takes this view seriously, holds a doctrine which concerns not verbal definitions, but



assertions as to what the *object* (in the Committee's sense of the term) actually is.

But a "permanent possibility of sensation," whatever else it is, is never any one sensation or group of sensations; nor yet is it any set of events in the individuated streams of perceptions of any human percipients. These events, the *given* facts of sensation, come and go. The "permanent possibility" is no one of them. But it is what, for Mill, the "complex of physical qualities" essentially is, and for Mill, if his doctrine were taken quite seriously, there would be no other physical objects to consider, whether real or hallucinatory. But to speak of a *perceived object*, in the Committee's sense, would be to speak of a fleeting sensory event, in "some given actual perception." That is, the Committee's "perceived objects" would be "permanent possibilities" that are not permanent, or, once more, horses that are not horses.

Mill's account of the object of perception has often been accused of a false abstractness of formulation. Some have attempted to render his account more precise, or to deal with his arguments in another way, by asserting, with greater or less definiteness of phraseology, that the very being of a "complex of physical qualities" *essentially consists in the truth of certain propositions*. This doctrine, which, as it stands, is of course a metaphysical doctrine, has numerous representatives in modern discussion. Many, both before Mill's time and later, have been led to such an opinion, by considerations not wholly identical with those which Mill emphasized.

It is notable, furthermore, that, whenever such thinkers attempt to define their *objects* (that is, their "complexes of physical qualities" in the Committee's sense of *object*), with precision, they include amongst the propositions which define the being of the *object* certain *universal* propositions. Thus, for Mill, a bell to which a wire is duly attached is a "complex of physical qualities" whose being is partly defined by the truth of the proposition: "If I pull the wire I shall hear a ringing." Now any *if*-proposition is, in its logical sense, an universal proposition. And we are not here concerned with the material question whether this or that one amongst a set of such universal propositions is actually true, or again with the question: Subject to what conditions is it true? It is enough for our present purpose that, *if* a percipient is led to believe that the being of his object is in some respect defined by such a universal proposition, and if this proposition is *not* true, then his object is in this respect illusory. The being of the object is defined by the truth of propositions, some of which are universal, whether it is a real object or an unreal one.



In case, however, the truth of some universal proposition is essential to the constitution, to the very being, of a "complex of physical qualities," it is, once more, a contradiction in terms to talk of the truth of such an universal proposition as ever, or at any time, or to anybody, "*given* in some particular actual perception," such as any mortal ever has.

For any one who holds this view of what an *object* is, the Committee's definition of *perceived object* is, therefore, equivalent to the definition of a horse that is not a horse.

Now some who hold such views about physical objects are metaphysical realists. Some are Kantians; and one very important aspect of Kant's whole theory of the nature of the "phenomenal objects" which he so sharply distinguished from the sensory data, consisted in his identification of the very being of a physical object with the truth of propositions, some of which are, in his opinion, *a priori* and universal, while all of them are true propositions in a way that only the "spontaneity of the understanding" and the relation of the object to the transcendental "unity of apperception" could warrant or determine. Whatever the variations of Kant's own phraseology—variations easily explainable in the light of his own development—there should be no question that what his fully developed doctrine defines as the true *Gegenstand* of perception, and as the phenomenal, yet still perfectly objective actual "complex of physical qualities," is nothing whose nature permits it to be *given* to *any* human perceiver, in *any* particular actual perception. Many Kantians have come to emphasize these aspects of the Kantian theory of what a "complex of physical qualities" essentially is. For all such, the Committee's definition of a "complex of physical qualities *given* in some particular actual perception" is a definition of "perceived objects" such that it requires some universal truth to be *given* as true in a particular actual moment of perception, and is also a definition which requires a permanent somewhat to be *given* as permanent *in* that which flits. The result is once more a zero-class. All such thinkers are, in my opinion, excluded from profitable participation in the Committee's discussion.

Finally, amongst those to whom the very being of a "complex of physical qualities" consists in the truth of certain propositions, whereof some are universal propositions, there are students of philosophy who are metaphysical idealists. Of these students I am one. My views are not here in question. But perhaps I have a right to say that all such metaphysical idealists, whatever their other varieties of opinion, get to their results by interpreting the truth of these propositions in terms which they suppose to be concrete and reasonable enough, but which do not permit them to admit that such truths

as constitute the being of such a "complex" could be, at any moment of time, *given* in the stream of anybody's particular actual perceptions.

I submit that, for all such thinkers, the Committee's formulations of the issue depend upon the definition of a zero-class. All such are, in my opinion, excluded from profitable cooperation in the discussion as defined by the Committee.

In sum, whoever emphasizes the fact that what he means by a "complex of physical qualities" is something that perception brings to his notice, but that, once brought to his notice, is, in his opinion, essentially an object of *interest*, of *belief*, of *intention*, of *faith*, or of *rational assurance*, or of *categorized conceptual structure*, may well ask himself what place he has in the Committee's undertaking. For to him what is "given in a particular actual moment of perception" is simply *not* what he means by an object at all, whether he is a mystic or a pragmatist or a realist or an idealist.

## VI

There are, then, such philosophers as I have defined, in general terms, by the assertion: *For such philosophers the Committee's class of perceived objects is a zero-class.* But just *why*, after all—so one may reply to me—why are such philosophers excluded from the inquiry proposed by the Committee? Why may they not take part if they please?

My answer has to be in terms familiar to every student of modern formal logic.

If a "zero-class" is to be the subject of an assertion, what predicates may with truth be asserted of that zero-class? The answer of modern formal logic of the prevailing neo-Boolean type is well known, and, for logical purposes, is useful. A zero-class is not only subsumable, but is actually subsumed, under every class in the universe of discourse. Hence of any zero-class *all* universal propositions, whatever their predicates, are *true*. All particular propositions, however, which have the zero-class as their subject, are *false*. Hence the fortunes of a zero-class are easily to be foreordained. Thus the class defined by the term, *a horse that is not a horse*, is, indeed, by definition a zero-class. Hence it is formally correct to say: "All horses that are not horses can trot fast and play the violin at the same time." For the assertion is an universal. But this assertion, whose formal justification, and whose possible importance from certain points of view emphasized by modern logic, I need not here pause to explain, is no contribution to the arts or to the sciences that deal with the trotting-horse. It is an actually valuable formalism, which could indeed better be expressed in symbols. If I were asked



to cooperate in a discussion amongst horse fanciers, and I had only *such* propositions as this to bring to their attention, it would be at once kinder and safer for me not to address the meeting. If they chose to discuss still other classes of horses that I considered to be zero-classes, I could at best only contribute the same logical truisms to their discussion, and so should be excluded from useful participation in their deliberations—*unless indeed they asked me to say whether and why I thought these classes to be zero-classes.* That indeed might become more a valuable and material issue, in whose discussion I might gladly take part. But if they formulated questions for debate that did not include this question, that in fact obviously excluded it, how could I further contribute, unless I undertook something in the form of a criticism of the limitations which they had put upon the debate?

As a fact, the Committee did not ask anybody to discuss the question whether there are any “perceived objects” of the precise type that it defined. Its use of its definitions, its somewhat elaborate formulation of the “logically possible views,” its entire classification of the issues, excluded this inquiry from the recognized field for the debate.

No philosopher of the types illustrated in the foregoing discussion had any proper place in the cooperation which the Committee invited.

## VII

Now, is all the foregoing mere “logic-chopping,” mere “carping criticism,” mere “verbalism,” or what James loved to call “barren intellectualism”? I hope not. I intend to insist upon what I suppose to be a practical issue. It was the Committee that offered definitions supposed to be exact. My “carping” is intended only to be a taking of the Committee’s requirements quite seriously. My “verbalism” consists in using their own words as they required. And my practical purpose is constructive. I want to indicate something, however little, about how our future discussions may best be organized if others at all agree with me.

That the whole issue is not merely verbal, but is quite material and of practical importance for the discussion, will appear, I think, if we simply leave out the terms defined, and substitute the definitions. In order to do this, let us consider where we should stand if the Committee had said: “Those who are to take part in this discussion are requested and supposed to assume: That ‘complexes of physical qualities’ may be, and often are, *given* in ‘some particular actual perception,’ at some time, and in such wise as to be ‘present in some individuated sequence’ or ‘stream of perceptions,’ and for some human being.” This would not be a verbal, but a very material assumption.



Had the Committee said just this, we should have known that all whose metaphysical or epistemological opinions led them to hold, concerning physical objects, the views held by those whose otherwise very various doctrines I have just summarized, were expressly excluded from participation. Such an exclusion would have been a perfectly proper plan for the debaters who belonged to the Committee, if it was simply their intention to present their own views. But in that case the plan would not have included a call for the cooperation of members whose views were thus excluded. Now the Committee's definitions, and the preparation of the subject for debate, essentially involved, however unintentionally, just such an exclusion. This is the ground of my criticism. I conceive that hereby the Committee doomed the discussion in advance to be unable to find place in any just fashion for some of the most important views about perception.

And now as to the practical result: The Committee inadvertently excluded people whom of course they never consciously intended to exclude. These people were no small party. Various mystics, scholastics, Kantians, idealists, modern realists, and pragmatists were among the people thus out of place in any inquiry that should be carried on under the restrictions carefully prepared by the Committee. When any such people attempted to enter the actual debate, they could do so only either apologetically or rebelliously or unprofitably or through an ignoring of the restrictions. This was not what the Committee intended; but it was what they brought to pass. This is not the best way to secure general cooperation. This, I think, is not what either the members of the Committee or any others of us desire to have done in our future general discussions, of which, as I hope, there will be many. The plan of having general discussions upon issues sharply defined and directly joined, is a plan that promises great results for the future, if only we learn from our first attempts how to carry out that plan better than at first we did.

What should the Committee have done? In order to answer this question, I need not dwell upon any of my own whims, prejudices, or tastes. The correct mode of procedure was suggested, during the actual general discussion, by one of the members of the Committee, namely, our devoted and highly esteemed Secretary himself. I can not quote his words, although I heard them with approval. In substance he said that one might well consider *that table yonder* (he did not define it in the abstract, but designated it by a perfectly acceptable gesture and wording), that "brown, smooth, solid somewhat"; and that one might then try to tell how he himself considered what he found "present to his senses" (namely, the *given*) to be

related to what he supposed the table (the *object*) really to be. I hope that I fairly represent the Secretary's remark.

Well, *that* is the question about perception, in a nutshell. Let anybody tell (if he can, and so far as he can) *what* it is that he supposes to be *given* in his "stream of perceptions," when he looks at the "table" or "orange" or "inkstand" or whatever else he sees or otherwise perceives. Let him then indicate what this which is *given* leads him personally, *at that "moment of perception,"* to "believe to be there," or "to regard as real," or to view as a "true part of his material world," or, to consider as the object which, in his opinion, he just then knows or believes to be a "physical object." Let him hereupon compare the *given* as it is *given* with the *object* as he just then, in his momentary perception, takes it to be real. Let him still further explain, if he can and will, how this *object* which, at the "moment of perception," he *takes to be real*, is related to what he, as a philosopher, believes to be the *really* real, the genuine fact which lies at the basis both of his perception, and of the *given*, and of his momentary beliefs about "what is there." If the discussion is defined, upon the basis of such a beginning, in such wise as to call for still further comments upon known issues—let the disputant cooperate, if he will and can, by meeting these further issues. A discussion thus defined will indeed, as I firmly believe, actually illustrate the thesis that, for any percipient who wakes up to what he is believing and is doing, the being of the *object* of perception will either consist in or essentially involve *the truth of certain propositions (some of them universal)*, each of which defines this or that aspect of the *object*. Since such truths by their nature exclude the possibility of their ever being *given* at any moment in "the stream of perceptions" of any human being, the *object* of perception will *never* be anything that is *given* in the personal experience of any one of us. Yet the correct result will not be (in my own opinion) what the Committee defines as "epistemological dualism and realism." It will be a result dependent upon one's definition of the *truth of propositions*. Hence, for me, this result will be a form of idealism which here does not concern my reader.

But the essential practical point is that, while a discussion thus initiated would need to be restricted by rules and definitions, so as to keep all concerned close to the issue and in constant cooperation, there would now be no need and little danger of defining the issue or the rules or the cooperation so as to exclude anybody whose views are seriously represented in classic or current philosophical discussion.

Following the Secretary's admirable suggestion, I propose then, for the planning of our future discussions, a mode of procedure that



in its origin goes back at least to Socrates or even to Zeno of Elea, and that, in its more exact and exacting restrictions, is well exemplified in the procedure of some modern mathematical logicians. It is this:

1. Define your problem *as far as possible* by designating typical examples. Socrates did this, and was a model for all of us. Even the Eleatic Zeno did it in his famous discussion of one of the most abstract of problems, and the issue as he defined it still interests us to-day. Our Secreatry proposes to do this sort of thing in preparing our future discussions. I second the suggestion. The Committee's report did *not* exhaust this device before proceeding to the more abstract definitions that it had to provide. Hence these definitions were not all well adapted to their own end.

2. When designation by example has done its work, and when you come to the marshaling of the various possible varieties of opinion which you regard as worthy of discussion, it is of course natural to divide some universe of discourse into classes, and then to enumerate the possible views by pointing out the logically possible relations amongst these classes. But, when you do this, do not ignore those most momentous aspects of modern exact theories, namely, the "existence-theorems," or "existential postulates," and their contradictories (the assertions that declare or deny some of your defined classes to be "zero-classes"). Consider carefully, in the light both of formal logic and of the history of opinion, what alternatives regarding such assertions or denials—what questions as to whether one or another of your defined classes has members—are assertions or questions open to reasonable differences of opinion. This is a centrally important rule for every exact inquiry, and is greatly emphasized in the recent procedure of the logical theorists.

These are not all the rules that ought to be followed by a committee on definitions. But they are good rules, and practical rules. The Committee, on this occasion, did not follow them.

May our future discussions be controlled by committees on definitions! That is a wise plan. May the discussions prosper! That is a good hope. May the committees be as successful in practice as the present Committee was earnest and faithful in its intentions and in its toils. My carping words are ended.

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## SOCIETIES

ELEVENTH ANNUAL MEETING OF THE AMERICAN  
PHILOSOPHICAL ASSOCIATION

THE eleventh annual meeting of the American Philosophical Association, held at Harvard University, December 27, 28, and 29, was remarkable in two respects: First, for what it purposed but did not accomplish; second, for the unmistakable promise of a new type of accomplishment at future sessions. A committee of five had, with elaborate care, formulated and defined the main issue for discussion, and this same committee, with the exception of the *ex officio* member, had undertaken to debate this issue. It was hoped that by this means the discussion would be so narrowed that it would result either in clearly defined agreement or in equally clearly defined disagreement. This hope was far from realized. The debate was not a sharp presentation of counter positions, but rather a presentation of the more or less complex and involved views of the individual debaters upon the various issues in question. The discussion which followed was hardly less nebulous. In great part it was a discussion of what the discussion ought to have been but was not. But out of the confusion and relative failure of the debate—the “riot of philosophic anarchy,” as one of the members expressed it—the opinion strongly emerged that the method of debating a clearly formulated issue should by all means be continued as by far the most profitable mode of philosophic discussion. To that end, the committee of five was continued in office with instructions to draw up a plan for the next meeting along lines similar to those laid down for this year’s meeting. It is to be hoped that the lessons of this year will aid the committee in outlining a plan such as will make possible both a sharper joining of issue and a clearer effort of cooperation.

The first paper of the session was read by Dr. Durant Drake on “What Kind of Realism?” Epistemological monism, he held, involves the giving up of the conception of a single temporal-spatial order into which all known facts fit; whereas the form of realism which accepts epistemological dualism can put all facts into one natural order, and is therefore in so far more plausible.

Professor Montague presented three objections to the panpsychist view of Dr. Drake: (1) The view offers no explanation of the mind’s consciousness of other minds as such; (2) it does not justify the differences found in the forms of the external world; (3) it is a self-refuting system in so far as, taking its stand upon the facts of physics and physiology, it then informs us that these facts do not exist. Dr. Drake in answer found no difficulty in the view that

minds are known as true parts of the natural world, but *under the form* of brain processes.

Professor Creighton followed with a paper on "The Determination of the Real World." This process of determination, he held, consists in following and interpreting the findings of experience, which involves the relation of a mind or consciousness to a real world of persons and things. To be a mind is just to stand in this relation of active appreciation and interpretation of real objects. If knowledge is genuine, the categories are constituent principles of things, as well as forms of mind. This makes unnecessary all attempts to get rid of knowledge in order to have the object in its purity. To report the nature of reality as a whole, a synthesis of results is needed, which can be achieved only by taking account of the processes of knowing through which the results of the special sciences are gained and reinterpreting these results and methods in the light of consciousness.

Professor Perry, in opening the discussion of the paper, charged the reader with begging the question in his statement that philosophy is the adoption of the standpoint of experience, meaning by experience that which involves the duality of subject and object. For in saying this Professor Creighton answers at the outset the question that is really most interesting to us. Furthermore, the assumption of subject-object duality is a dangerous one, in so far as it tends to make the two correlated terms final. Most of the difficulty, he asserted, arises out of the occupation with abstract terms rather than with concrete situations. Miss Calkins thereupon rose and added humor to the situation by expressing her delight at being at last in agreement with Professor Perry and admonishing him to forego his own evil way of using such abstract terms as *R* and *S* and *O*.

Professor Dewey seemed to find that Professor Creighton, after having declared mind to *be* a meaning and evaluation of existence, had substituted the declaration that it was a *principle* of meaning.

Professor Creighton, in replying, admitted frankly that he saw no way out of begging the question as to the initial duality of subject and real world. He failed indeed to see how the realists themselves could escape making the assumption.

Professor Lovejoy propounded two questions to Professor Creighton: (1) Whether he regarded the existence of the object in the experience relation as essential to the being of the object. To this Professor Creighton answered that he did so regard it in so far as the relation was internal. (2) If the object is, in this experience, truly revealed as it is, what does the object suffer if the consciousness is taken away? Professor Creighton answered: If one asks



what would happen if my individual consciousness were withdrawn, the answer would be "nothing." But if one asks what would happen if all relation to any possible mind were withdrawn, the answer would be that no answer is possible.

Professor Marvin followed with a paper on "Dogmatism *vs.* Criticism." The present-day issue usually called that between realism and idealism should rather be named that between dogmatism and criticism. By criticism is meant the doctrine which asserts one or more of the following propositions: (a) The theory of knowledge is logically prior to all other sciences or to all other scientific procedure; (b) the theory of knowledge can ascertain the limits of the field of possible knowledge; (c) it can ascertain ultimately the validity of science and of the methods of science; (d) it can give us of itself certain fundamental existential truths usually called a theory of reality. In opposition, dogmatism asserts: (a) The theory of knowledge is not logically fundamental; it is simply one of the special sciences and logically presupposes the results of many other special sciences; (b) the theory of knowledge can not show except inductively and empirically either what knowledge is possible, or how it is possible, or again what are the limits of our knowledge; (c) it is not able to throw any light upon the nature of the existent world or upon the fundamental postulates and generalizations of science except in so far as the knowledge of one natural event or object enables us at times to make inferences regarding certain others. As a consequence of this difference in doctrine the realist has a very different interest in the theory of knowledge itself from that of the idealist. The conclusion to be drawn is that the name neo-dogmatism would be a far more appropriate name for the movement in opposition to idealism than the name neo-realism.

Miss Case, reverting to Professor Creighton's paper and referring to the call to "dogmatism," expressed her belief that every philosophic position is an attitude, an assumption, and therefore essentially and necessarily a begging of the question. Professor Creighton felt that a return to dogmatism would eliminate the characteristic quality of modern philosophy. Philosophy must have a criterion for distinguishing between true and false ideas, hence must be criticism. Professor Marvin, answering Miss Case, agreed that we must start with premises, but only as postulates, not as final truths. He summed up his position by asking whether the problem of how we know is to be made the great crucial problem in the theory of reality, or whether the sciences are to be permitted to forge ahead in their own way.

At the afternoon session, the debate proper on "The Relation of Consciousness and Object in Sense Perception" was begun. Pro-



fessor Montague opened the debate with an impartial historical sketch of the development of the epistemological issue between realism and idealism in modern philosophy and then proceeded to develop his own argument in behalf of epistemological monism and realism. He held that the independent existence of perceived objects was evidenced by their behavior as common sense and science regard it, and in so far as physiological theories of perception imply the prior existence of the objects perceived. The ordinary objections to realism and the supposed axiomatic proof of idealism, he held, were based on a "verbal fallacy of psychophysical metonymy," i. e., equivocal use of such words as "idea," "perception," "experience," to connote (1) the act or relation of thinking, perceiving, experiencing; (2) the thing or object thought of, perceived, experienced. While at the point of beginning the exposition of a new solution of the problem of error, Professor Montague was cut short by the time limit.

Professor Dickinson S. Miller followed with the second paper of the debate. In the first part of his paper he outlined certain well-known positions of idealism which he held must be dismissed. Proceeding to the consideration of neo-realism, he pointed out that the doctrine which neo-realism in the main defends is immediate or *so-called* naïve realism. (It is not real naïve realism, which is in fact a latent idealism.) But this species of presentative realism breaks down for three reasons amongst others: (a) the time taken in perception proves that the perceived object is not identical with the real object; (b) the fact of illusion proves that the perceived object is not identical with the real object; (c) the theory would oblige us to hold that when two people side by side look at the same object much of the object is actually present in these two fields of consciousness at once. In conclusion, Professor Miller held that an object can not become a content of consciousness *as an object*. Objectivity is by its very nature a matter of properties in the object that can not be revealed in one instant nor even in a minute span of time. Objectivity means a potentiality of certain further manifestations. A perception is an impression plus a readiness to behave in a certain fashion. Thus, an object can not, as such, be a given or "perceived" object.

Professor Lovejoy followed with a paper which concerned itself solely with the question of the validity of the historic discovery of the subjectivity of hallucinations, illusions, and dreams. While all typical new realists agree in denying that the objects and qualities presented in hallucination or illusory perception are "subjective existences" merely, they differ as to whether those objects are "real" or "unreal" (in the sense suggested by the committee).

Nunn, and apparently Alexander, and other English realists, declare that, *e. g.*, the "straight staff bent in a pool" does not "merely seem to be bent," but that it really "is bent." This view, which may be called absolute objectivism, appears to the writer the consistent one for this school to take. For the essence of the new realism is its conception of consciousness as an external and non-constitutive relation. But this conception implies that all objects and qualities actually presented in consciousness are, in a universal sense, real things in a real relation. But this consequence of the new realism requires us to assert contradictory predicates of the same object; to say that, *e. g.*, the staff in the pool is at once both straight and not straight. Unless absolute objectivism can give us a new theory of the logical relation of sensible "attributes" to the objects possessing them, this seems a fatal objection to that doctrine, and therefore to the relational theory of consciousness, and therefore to the new realism (*i. e.*, the combination of realism with epistemological monism).

Professor Thilly, in closing the debate, held that the answer to the question of consciousness as a factor in the perceptual situation which is given by radical realists follows necessarily from their naïve dogmatism: if the object perceived *is* the object unperceived, numerically identical with it, then there is no difference between the status of an object in a stream of perceptions and its status out of it. But here the biological theories of these thinkers suggest conclusions inconsistent with their radical premises. Physically and physiologically speaking, perception is the entire organism in interaction or relation with its environment; we can not single out any one particular element in the situation and call that the physical or physiological counterpart of the process of perception. No more can we, in speaking of perception as a mental event, abstract the so-called perceived object from the functions involved, in the hope that we may in this way get at the case of being, or discover the object exactly as it would be apart from any perceiver. We may say that in the perceptual situation an object is revealed, made manifest, but we may also say that much that appears belongs to the mental realm, is read into the object, sometimes truly, sometimes not. This does not mean that the mind alters the real object or that it creates an object out of nothing or that the object creates a picture of itself in the mind or that the object lies imbedded in the mind. All that we can say is that a conscious organism perceives a real object in a certain way, according to the mental and physical factors involved.

Professor McGilvary presented a close-packed ten-minute paper in which he argued, among other things, that the relational view of consciousness is compatible with the recognition that the same real



object is in different consciousnesses; that an hallucinatory object occupies real space, but does not monopolize it; in other words, that impenetrability is not a universal characteristic of space-occupying things; that color-blindness is explicable on the relational theory of consciousness as due to the fact that the real brightness of a real object is selected to be a term of a consciousness relation, while the color of the real object is left out of the consciousness complex.

In the evening, the Harvard members of the Association entertained the visiting members at dinner at the Colonial Club. Professor Perry introduced President Lowell, who welcomed the Association with felicitous humor; to which President Woodbridge replied in happy vein. After the dinner a reception was tendered at the Harvard Union.

The session Thursday morning was opened by Dr. H. R. Marshall's paper on the general topic. Dr. Marshall argued that in his appreciation of a natural order as distinguished from a mental order, the natural man accepts naïvely a radical dualism. But further consideration indicates some manner of correlation between the two orders. Objects in the outer world may become images of the mental order by the loss of some certain characteristic, viz., that of "out-thereness." This suggests that the natural order may be really part of and within the mental order, a part which has this "out-thereness" characteristic, which the rest of the mental world has not. This view he would call introspective monism.

The meeting was then thrown open to general discussion. The prevailing note was one of criticism of the conduct of the debate. Mr. Pitkin expressed himself as grievously disappointed in so far as the specific empirical problems raised for debate had been passed over. No one had attempted to define accurately the term "numerical identity" contained in the first question propounded for debate. Numerical identity, he thought, might be defined in one of two ways, of which he felt that the latter would be the more profitable, viz., (1) identity with respect to quantity, or order, or place in a series; or (2) identity with respect to one value in a space, time, or other dimensional complex. With respect to the second question propounded, he felt that the result had been even less happy, by reason of the absence of any clear definition of "object" and "perception."

Dr. Cohen gave point to the discussion by disagreeing with Professor Miller that the neo-realist account of a stick appearing in water as bent was a self-contradiction. There was no reason, he held, why the same thing should not possess contradictory properties; it was only necessary that these should not be contradictory from the same point of view. With respect to a straight line, for example, there are an infinite number of points of view—length,



angle, etc.—from which the line may be viewed. It is fallacious to suppose that the only relevant point of view is that of the observer. So the same stick may appear in a number of different combinations according as we take our point of reference. In short, then, the existence of a thing is a general formula for all possible points of view.

Dr. Spaulding followed Dr. Pitkin in the thought that the debate had failed to grapple with two essential issues: What is the difference between a primary quality when it is perceived and when it is not perceived; and what is the status of the entity which makes the difference? Professor Lovejoy, he felt, had attempted a reply by making consciousness the dumping-ground into which one put everything that one could not put into the real world. He urged that the Association proceed at once to the discussion of the two main issues. Whereupon Professor Warbeke, taking him at his word, with some humor, asked that Dr. Spaulding undertake what he had so wisely proposed. Dr. Spaulding, accepting the challenge, replied briefly that the brownness of the desk, for example, remains the same whether perceived or unperceived; that its perception, in short, consists simply in the desk's entering another relationship which does not alter or modify it. Professor Dewey felt that the main trouble with the discussion was due to the character of the committee's report, with which Professor Lovejoy took issue, declaring that the purpose of the committee was to call forth a consideration of a certain doctrinal combination, viz., epistemological monism and realism. Was this combination an internally consistent and tenable view? He had in his own paper, he said, proposed a test question: whether if you adhere to a relational theory of consciousness you can give any intelligible account of hallucinations and illusions. He felt that the neo-realist must, to be consistent, admit that hallucinations are real in the same sense as any other content. Professor Thilly expressed his disappointment with the discussion, asserting that the realist had no theory of perception, that he just took objects as they were. This he felt to be an utterly futile form of dogmatism.

Professor Perry urged that the real point at issue in the discussion was between monism and dualism, between the view, namely, that the difference between perceived objects and real objects is an absolute difference, a difference of substance, and the view that the difference was not an absolute one. In view of their common monistic tendency he felt that realists and idealists might form one party. Professor Marvin found that the chief shortcoming of the discussion lay in the confusion of meaning of "real" and "error." Real objects had been defined as true parts of the material world. But the confusion lay in defining material on the one hand in terms

of abstract dynamics, and on the other in terms of concrete experience. With reference to "error," some of the speakers had seemed to look upon error as the act of assigning a particular content to the real material world or not so assigning it. On the contrary, he held, error lies rather in asserting a particular form of relation between one content and another which does not in fact obtain. Professor DeLaguna attempted by a concrete demonstration to indicate the difference which the scientist conceives between secondary and primary qualities. The scientist, he held, never expressed *what* the qualities were, but described them simply in terms of the test of double contact.

Professor Tufts felt that the test for a true object is a test by various sciences: what on the whole is the more permanent object, the one that we can do business with, etc.? It is obvious that we can not assert numerical identity between perceived and real objects in all cases. He wondered whether Professor McGilvary's view would imply that the same desk might be all the various possible shades of brown. Professor McGilvary answered Yes and No. If we mean by the question whether in the space in which we see the colors all colors are, we must answer yes; but in so far as they are in different relational contexts, we must answer no. It is by holding fast to distinctions of relational contexts that one avoids contradictions.

Miss Calkins, referring to Professor Marvin's paper, hoped that the realists would follow its suggestion that the task of philosophy was the logical criticism of scientific conceptions. She felt that realism must make its position good not simply by appealing to the sciences, but by actively entering upon the task of logical criticism of scientific conceptions and results. Miss Calkins felt that the real source of confusion among philosophers was their constant use of abstract terms, that is, terms like "table," etc., in which the self was abstracted from. Professor Norman Smith rose to criticize what seemed to be the aim of the whole discussion. It seemed to be arranged in such manner that agreement should be reached, as in the sciences. This, he felt, was seriously to confuse philosophic with scientific method. The question, What is the object when unperceived? Professor Smith thought to be a futile question. The real question that we should ask is, How do we *conceive* the object when unperceived?

Professor Dewey, reverting to the question of the bent stick and the apparent contradiction between its bentness and straightness, approved of Dr. Cohen's position. The difficulty, he thought, lay in treating the perception as *a* real object rather than as various systems of relations. The visual bentness of the stick, a real fact of optics, in nowise contradicts its actual straightness. Professor



Perry, replying to Miss Calkins, saw no reason why "table" was an abstract term because the self was abstracted from. If this was so, the only way of being concrete was to talk about everything. Professor Creighton, in summing up the discussion, felt that there was need for some fundamentally new understanding of what body is. Professor Pitkin set the fundamental problem to be whether any function of a variable real should be regarded as a predicate of that real.

The afternoon session was opened with a paper by Professor G. R. Montgomery on "The Meaning of Evolution." Professor Montgomery pointed out the two meanings of evolution, (1) that which asserts merely a continuity of material and living objects; (2) that which regards the present as the unfolding of the past. He suggested that the word evolution should be restricted to the second, while a new word should be found to express the first meaning.

Professor Montgomery's paper was followed by a paper on "The Progress of Evolution" by Professor A. C. Armstrong. Considering the progress of evolution from the point of view of noetics, Professor Armstrong laid special stress upon the fact that the relation of the concepts of genesis, nature, and worth had not yet been adequately considered.

The last paper of the afternoon was by Professor I. Woodbridge Riley on "Early Evolution in America."

The discussion of these papers was desultory. At the adjournment of the session the business meeting convened. The following officers for the ensuing year were elected: president, Frank Thilly; vice-president, Norman Kemp Smith; secretary, Edward G. Spaulding; new members of the executive committee, W. B. Pitkin and E. A. Singer, Jr.

Professor Dewey read resolutions in memory of Professor James, which were adopted in silence by a standing vote. The question of the place of meeting for 1912 was referred to the executive committee with power, with the recommendation that the meeting be held at such a place as to make possible the attendance of Professor Bergson.

In the evening, Professor Woodbridge read his presidential address on "Evolution." As the address is to appear in full, it will be needless to summarize it in this place.

The last morning of the meeting was occupied with four papers, which must be summarized very briefly. Mrs. Christine Ladd-Franklin opened the session with a paper on "Existence in Logic," in which she maintained that modern logic had introduced (in the hands of Bertrand Russell) many vagaries which the philosopher will do well not to take too seriously. Thus to set up "*p* implies *q*"



as the type of the logic process and to regard it as capable of throwing light upon problems is an error. It would be far better to take as the type-relation one of those in which the existence-term which is always present is present explicitly. After some discussion, Dr. Morris R. Cohen followed with a paper on "Mechanism and Causality in the Light of Recent Physics." The belief, he held, that all physical phenomena must be explicable in terms of mechanics rests as a matter of fact on the doctrine of the subjectivity of secondary qualities. Recent progress in physics seems to indicate that the laws of mechanics are not of universal application, i. e., do not hold of very large velocities nor of very small bodies, and it may be necessary to base mechanics on electricity rather than electricity on mechanics. Distinguishing between mechanism and determinism, the paper went on to show that the statistical view of physics enables us to dispense with the notion of causality and to replace it with the wider and more definite idea of functional relation, in the mathematical sense, between phenomena. In the subsequent discussion with Professor Royce, Dr. Cohen insisted that the mathematical treatment of physical phenomena does not necessarily make them a part of mechanics. Professor Sheldon followed with a paper on "Chance," which aimed to show that chance, as an empirical concept, is just as real as cause, space, quantity, or other accredited scientific categories. The final paper of the morning was by Dr. Karl Schmidt on "The Nature and Function of Definition in a Logical System," in which the writer maintained, as against the ordinary modern accounts of definition, that definition is of indispensable use in a deductive system because it introduces into that system the "new." Professor Royce spoke briefly in approval of Dr. Schmidt's view. After some brief discussion by Mrs. Franklin, Dr. Cohen, and Professor Royce, the meeting adjourned.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Influencing Men in Business.* WALTER DILL SCOTT. New York: The Ronald Press. 1911. Pp. 168. \$1.00.

This readable little book contains an analysis, in popular language, of typical processes of choice and action, and a comparison of argument and suggestion as means of influencing conduct. Simple business situations are cited in which each of the two methods of appeal is most likely to meet with success. The idea-motor character of suggestion is emphasized and illustrations of both argument and suggestion, drawn from

advertising sources, are discussed in much the same vein that has popularized the author's earlier writings among the ambitious young business men to whom the book is dedicated.

The chief difficulty with this type of "applied psychology" is that while classification and schematization of mental operations may facilitate the recognition of one's own conscious states, it goes but a little way toward communicating the ability to set up these processes in others. The applied psychology which will really contribute toward industrial efficiency will grow out of the application of laboratory and statistical method. The methods of inquiry and research which psychology has developed can be made to yield results of real value when applied to the complex process of every day life. The psychology evolved by the introspective method can never be in the true sense an applied science; it is at most an academic analysis illustrated by industrial instances. Aside from a heightened feeling of the dignity of his work, the real advance which the man of business can expect from psychology must come from his acquaintance with experimental technique. There are countless problems in the efficient production and distribution of goods to the investigation of which such technique is well adapted. Such application has already yielded material of interest, both to industry and to science. That the practical man is recognizing this fact is indicated by the recent establishment, by the New York Advertising Men's League, of a research fellowship in the department of psychology at Columbia.

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BARNARD COLLEGE.

## JOURNALS AND NEW BOOKS

REVUE DE METAPHYSIQUE ET DE MORALE. September, 1911. *Husserl, sa critique du psychologisme et sa conception d'une logique pure* (pp. 685-698): V. DELBOS. — In spite of certain defects in its development, Husserl's logic has the merit of rescuing logic from the corruptions of pragmatism and restoring it to its essentially theoretical and regulative function. *La forme moderne du problème des universaux* (pp. 699-722): CH. DUNAN. — The oppositions in the views of the realists, nominalists, and conceptualists can be overcome by placing the principle of intelligibility in the object, as Aristotle did, instead of leaving it *a parte rei*, as was done in the Middle Ages. *La généralisation mathématique* (pp. 723-758): H. DUFUMIER. — The actual process of generalization is the process of subordinating objects to operations, and not mere omission of qualities of the object. *Le caractère normatif et le caractère scientifique de la morale* (pp. 759-779): FR. D'HAUTEFEUILLE. — Ethics, to remain normative, must give up the pretense of being scientific, and will gain by so doing. *Études critiques. La philosophie du langage de Julius Bahnsen d'après des documents inédits*: MME. I. TALAYRACH. *Discussions. Sur un aperçu d'Ostwald concernant les temps à plusieurs dimensions*: G. LECHALAS. *Questions pratiques. La famille et le contrat*: E. LÉVY. *Supplément.*

- Amendola, Giovanni. *Maine De Biran*. Firenze: A. Quattrini. 1911. Pp. 123.
- Angell, James Rowland. *Chapters from Modern Psychology*. New York: Longmans, Green, and Co. 1912. Pp. vii + 308.
- Leland, Abby Porter. *The Educational Theory and Praetise of T. H. Green*. Columbia University Contributions to Education. No. 46. New York: Teachers College. 1911. Pp. 62.

## NOTES AND NEWS

PROFESSOR J. McKEEN CATTELL, of Columbia University, gave the foundation address at the Indiana University on the morning of January nineteenth. In the afternoon he spoke before the faculties on "Grades and Credits," and in the evening addressed the Society of Sigma Xi. On January twenty-second he gave an address before the faculties of the University of Illinois on "The Administration of a University," and in the evening discussed the question with the committee charged with framing a constitution for the university. On January fifth, Professor Cattell gave an address at Lehigh University and at Lafayette College.

ANNOUNCEMENT has been made that the formal inauguration of Dr. John Grier Hibben as president of Princeton University will take place early in May. Dr. Hibben will continue to give his special course of lectures on philosophy under the auspices of the Graduate School, and it is expected that he will continue to give at least one course to the undergraduates.

THE minister of education has laid before the Hungarian parliament a bill which provides for the erection of two new universities in Hungary, in the cities of Pressburg and Debreczin.

M. HENRI BERGSON, professor of philosophy at the Collège de France, has been appointed visiting French professor of Columbia University for the year 1913.

PROFESSOR JOHN B. WATSON, of the Johns Hopkins University, has recently been granted a three years' appointment as a research associate of the Carnegie Institution of Washington.

PROFESSOR W. P. MONTAGUE, of the department of philosophy of Columbia University, has been appointed to deliver the Hewitt lectures at Cooper Union in the spring of 1913.

PROFESSOR WARNER FITE, of the University of Indiana, is lecturing at Harvard this semester. During his absence his work at Indiana University will be in charge of Dr. William K. Wright, of the University of Wisconsin.



## THE JOURNAL OF PHILOSOPHY

### PSYCHOLOGY AND SCIENTIFIC METHODS

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#### THE PROBLEM OF KNOWLEDGE.

THE realist platform promulgated in this JOURNAL, and the discussions to which it has since given rise, have led me to try to formulate the views which I should incline to defend. I do not unfortunately myself at present feel anything so solid as a platform beneath my feet. In this paper I propose to describe the kind of makeshift raft upon which, with my heart in my mouth, I venture out upon the stormy sea of speculation. My views are more negative than positive, but the negations involve assertions sufficiently definite to carry me into waters dangerously deep, or else perhaps into fogged shallows where rocks abound. The reader may choose the one or the other metaphor according as what follows does or does not meet with his sympathetic approval. The views which I shall develop, in so far as they have historical affiliations, are chiefly inspired by two thinkers, one older and one contemporary, by Kant and by Bergson.

For me personally, the chief and most pressing problem in the theory of knowledge is to reconcile objectivism or realism with phenomenalism, and both with that individualistic standpoint which the nature of our self-consciousness seems to force upon each of us. A satisfactory theory of knowledge must, I should say, be at once realistic, phenomenistic, and individualistic. Realistic, because subjectivism has been demonstrated to be untenable. Phenomenistic, because it seems impossible to regard the world known in sense perception, or even in the natural sciences, as any thing but a quite partial and very imperfect representation of the real. Individualistic, because, though our experience reveals a wider and common world to which we belong and out of which we have arisen, its complementary and equally striking aspect lies in the privacy of the inner life.

The general problem of knowledge accordingly falls into two subordinate problems, each of which has its own peculiar difficulties. First, the reconciliation of the contention that we apprehend

something that is non-mental with recognition of the fact that what we apprehend is in the form apprehended not genuinely real. Secondly, the reconciliation of both objectivism and phenomenalism, but especially of phenomenalism, with the requirements of self-consciousness. I say, especially of phenomenalism, because if the phenomenalism is thoroughgoing (and it must be if we are really to steer clear of subjectivism), it will apply to the self as truly as to the not-self. For that reason it seems easier to combine individualism with subjectivism than with phenomenalism. Kant and Bergson seem to me so especially helpful in this inquiry just because it is with these two problems that they are constantly wrestling.

Let me, at starting, indicate in the briefest manner the criticisms which may be passed upon subjective and upon objective (or Hegelian) idealism. The fundamental objection to subjective idealism, as found, for instance, in Locke's philosophy, is that it sets our representations in an impossible twofold relation to objects, first, as their mechanical effects, and secondly, as their apprehensions. There exists, on this view, an irresolvable conflict between the function of sensations and their origin. The function of sensations is cognitive; their origin is mechanical. As cognitive they stand to objects in a relation of inclusion. They reveal the objects, reduplicating them in image within the mind. Yet in their origin they are effects, mechanically generated by the action of material bodies upon the sense organs and brain. As mechanical effects, there is no guarantee that they resemble their causes; and if we may argue from other forms of mechanical causation, there is little likelihood that they do. They stand to their first causes in a relation of exclusion, separated from them by a large number of varying intermediate processes. There is thus, to repeat, a conflict between their function and their origin. It is their origin in the external objects that guarantees their validity; and yet the very nature of this relation invalidates their cognitive claims. It can also, I think, be shown that in the statement of its position, subjective idealism is guilty of arguing from a realistic starting-point to an idealistic conclusion irreconcilable therewith. This is especially true of subjectivism in its extreme Berkeleian form. That argument has, however, been so often elaborated that its repetition is needless.<sup>1</sup>

The criticism to be passed upon objective idealism is of a different kind, namely, that it either ignores the problem of the relation of mind and body, or else gives a solution which is quite inadequate. It proceeds by emphasizing the logical relation of necessary implication which holds between self-knowing and the objects known. It

<sup>1</sup> I have given a statement of it in an article in the *Philosophical Review*, Vol. XVII., p. 138 ff.



argues that it is the very nature of a cognitive process to transcend itself, revealing to the mind real, independent, permanent objects. The distinction between subject and object implies, however, an underlying unity, an absolute self-consciousness, that conditions and unifies both. To this absolute self-consciousness sensations and all consciousnesses are due.

Now, even supposing that these relations of mutual implication—between subject and object, or between both and an absolute self-consciousness—could be granted as conclusively proved, the problem of the relation of mind and body would still remain unconsidered. The only answer to this problem which, apparently, objective idealism is capable of giving, is the answer of Berkeley, more adequately stated, but still in essentials the same, namely, that the existence of the brain is necessary in order to complete our system of natural science, to develop its point of view universally, but is never in any sense the dynamical condition of our conscious life. The conscious can not originate in the unconscious. Our sensations are due, not to our brain states, but to an absolute reality that comes to consciousness of itself in the finite mind.

Of course, stated in this bald fashion, no objective idealist will accept such an interpretation of his position. He is ready to admit that our having a sensation of red light is dependent upon a brain state caused by ether waves acting on the retina, but that, as I should contend, is a fact of which he can give no consistent account.

That the body is the organ of our activities can not be doubted. The question which ought to be explicitly raised and definitely answered by objective idealism is as to whether or not the brain is likewise the organ of our consciousness. If it is also the organ of our consciousness, then in what terms is its cognitive function to be conceived? That is a question to which, as it seems to me, objective idealism has given no satisfactory answer. It is a question which it persistently ignores.

The chief objection, therefore, to subjective idealism is that it regards the objects known as mechanically causing the apprehensions through which they are known. The chief objection to objective idealism is that it ignores the causal problem altogether.

Each position has also, however, its own merits. The strength of subjectivism lies in its candid recognition of what appears to be beyond dispute, supported as it is by the whole strength of physical and physiological science, namely, that sensations are due to the action of material bodies upon the sense organs and brain. Philosophy is peculiarly skilled in explaining away inconvenient facts, by giving to them, in what it calls critical interpretation, a metaphysical twist. But the affection of the sense organs by material bodies is, it



would seem, something that can not be thus conjured out of existence. The theory of knowledge must be prepared to interpret it in a manner that is not virtually in some concealed form its denial.

Objective idealism is equally strong in its main contention, namely, that mind knowing and consciousness of objects known are inseparable. Mind has no meaning for us save as consciousness, and there is no consciousness that is not consciousness of objects. A mind that is unconscious, as, for instance, in sleep, is inconceivable by us. It is then merely a name for an unknown, equal to  $x$ . Sleep is, for this reason, something of which objective idealists have never been able to give any reputable account. But not only is mind that which is conscious, it is also that which is not merely self-conscious. There is, as the objective idealists rightly maintain, no such thing as pure self-consciousness, a consciousness by a mind of itself and of nothing but itself. All consciousness, without exception, involves consciousness of objects. Consciousness of self and consciousness of the not-self are inseparable. This fact has important consequences, and is very rightly insisted upon by objective idealists. That, however, is a matter to which I shall return. And now for the general problem.

We may judge of man in two very different ways, from the point of view of his animal organism, and from the point of view of his inner life. Voltaire has remarked that "it would be very singular that all nature, all the planets, should obey eternal laws, and that there should be a little animal five feet high, who, in contempt of these laws, could act as he pleased, solely according to his caprice." Voltaire is here judging of man in terms of the conditions of his animal life. He is forgetting that this same animal of five feet can contain the stellar universe in thought within himself. Infinite space and infinite time can be ranged over by the human mind. Man's spiritual dignity dwarfs even the highest of his animal functions. Though finite in his mortal conditions, he is divinely infinite in his powers.

Were we not so thoroughly familiar with the unlimited power of thought, could we (to form for the moment a self-contradictory hypothesis) without ourselves possessing this capacity, be informed that beings on other planets are thus endowed, we should certainly be incredulous. It would seem too absurdly impossible that a creature five feet high and confined to one planet, should yet at the same time possess a something called mind or consciousness which can range over the whole of infinite space. That would surely be denounced as more unbelievable than any dogma ever propounded by the theologians, more impossible than the wildest and most superstitious belief of primitive man.

The power of thought is sufficiently wonderful in the animals,

enabling them as it does to have some apprehension of their environment, and so by variation of their reactions to attain satisfaction of their instinctive needs. But in man it no longer serves a merely practical purpose—that is, if we adopt, as it seems to me we must, the idealist interpretation of the function of human thought. In man thought is essentially speculative in its character, connecting him with the universe as a whole, and driving him by the compulsion of an inner need to rationalize and render intelligible to himself the nature of things.

It is this uniqueness of thought which seems to justify philosophy in laying so absolute a stress upon it, and in maintaining that it must largely contribute to the determining of our general philosophical attitude. By preoccupation with the question of knowledge, aided by the natural sciences, but not overweighted by them, we may hope to find some of the deeper clues that will lead to a more adequate solution of our philosophical problems.

It is this twofold aspect of our existence, as at once animal in its conditions and potentially universal in its powers of apprehension, that forces upon Kant the problem of reconciling phenomenalism with individualism. The finite self exists in and through space and time, not space and time in and through the finite self. It is conscious of a time that existed before its own existence and which will outlast it. It is conscious of itself as being limited down, as an animal existence, to a particular position in space, and as subject to all the limitations which such position involves. Experience also teaches—and this is likewise an essential element in Kant's doctrine—that our various sensations are due to the action of material bodies upon our sense organs and brain. But, on the other hand, Kant is no less emphatic in maintaining that the whole world in space and time rests upon complex conditions that are inextricably bound up with the determining factors of our transitory existence. The material world in space is in its apprehended form phenomenal. It is an appearance which exists only in and through consciousness. And yet consciousness only appears in connection with individuals that are conditioned by the limitations which spatial and temporal existence impose.

The usual interpretation of Kant is little better than a parody of his real teaching. It takes Kant's solution of the problem as consisting in the assumption of a self that by its creative agencies constructs out of given sensations the mechanical world in space and time. The world exists separately in the mind of each individual observer; it has no independent existence apart from these its individual embodiments. If that were Kant's position, it would be of comparatively little value, and would merely be a form of Berkeleyanism. The chief problems of philosophy center in the self, in the



question as to the nature and possibility of spiritual existence. Certainly, if we may assume the existence of the self as a spiritual being capable by its activities of generating the world in space and time, we may be able to explain the apprehended universe. The legitimacy of such an assumption is, however, itself the chief point at issue. And that it is an illegitimate assumption was one of Kant's main contentions. It is illegitimate for two reasons. First, because to explain by reference to the activities of such a self is to explain by faculties, by the unknown. It is a cause that will explain anything and everything equally well or badly. This is an argument which Kant nowhere himself employs, but it is implied in a second argument which finds expression both in the *deduction of the categories* and in the *paralogisms*. The only self that we know is a conscious self. And since as conscious it can only exist in and through consciousness of objects, it can not precede such consciousness as its generating cause.

It is in another and very different manner that Kant maintains the dependence of phenomena upon consciousness. He makes a most valiant attempt to combine his phenomenalism with realism; and though most of the inconsistencies in his teaching are traceable to the almost insuperable difficulties to which any such attempt gives rise, it is also the source of much that is most suggestive in his thought. I shall try to indicate Kant's position on this point.

As I have already said, it is much easier to combine realism with subjectivism than with phenomenalism. Realism appears in a subjectivist form in Descartes, Locke, and Leibnitz; also in Helmholtz, Huxley, and Spencer. In all of those thinkers, everything outside the individual mind is real: appearance is purely individual in origin. Their position, therefore, is not strictly phenomenalism, but only subjectivism. Kant, on the other hand, maintains that the individual is himself known only as appearance, and can not therefore be the medium in and through which appearance exists. Though appearance exists only in and through consciousness, it is not due to any causes that can legitimately be described as individual.

But though Kant is insistent both upon his phenomenalism and upon his realism, he inclines, according to the exigencies of the argument and to the special difficulties which he happens in each context to have in view, now to the one and now to the other. "Inclines" is perhaps too mild a term. There may indeed be traced, running side by side through all his critical writings, two conflicting views as to the mode of existence possessed by the material world in space, as to the nature of mechanical causation, as to the constitution of inner sense, and as to the character of the transcendental unity of apperception. The usual and current interpretation of Kant, to



which I have just referred, takes only the one set of views, and ignores the others. It is in the perpetual oscillation between the two, and in the perpetual striving to reconcile them, that much of the value, and most of the present-day interest, of the "Critique" lies. To this cause is largely due its permanent, though illusive, power of suggestion.

Sensations, Kant holds, have a twofold origin, noumenal and mechanical. They are due in the first place to the action of things in themselves upon the noumenal conditions of the self, and also in the second place to the action of material bodies upon the sense-organs and brain. To take the latter first. Light reflected from objects, and acting on the retina, gives rise to sensations of color. For such causal interrelations there exists, Kant teaches, the same kind of empirical evidence as for the causal interacting of material bodies. Our sensational experiences are as truly events in time as are mechanical happenings in space. In this way, however, we can account only for the existence of our sensations and for the order in which they make their appearance in or to consciousness, not for our awareness of them. To state the point by means of an illustration. The impinging of one billiard ball upon another accounts causally for the motion which then appears in the second ball. But no one would dream of asserting that by itself it accounts for our consciousness of that second motion. We may contend that in an exactly similar manner, to the same extent, no more and no less, the action of an object upon the brain accounts only for the occurrence of a visual sensation as an event in the empirical time sequence. A sensation just as little as a motion can carry its own consciousness with it. To regard that as ever possible is ultimately to endow events in time with the capacity of apprehending objects in space. In dealing with causal connections in space and time we do not require to discuss the problem of knowledge proper, namely, how it is possible to have or acquire knowledge, whether of a motion in space or of a sensation in time. When we raise that further question we have to adopt a very different standpoint, and to take into account a much greater complexity of conditions.

I may indicate two of the difficulties which such a view involves. It is fair sailing in regard to the organic sensations, and to the sensations of the lower senses, including temperature sensations. Difficulties present themselves in regard to sensations of touch and motor sense, and especially in regard to sensations of color. Color is not perceived as an event caused by the external object which acts on the retina, but as its inherent and permanent quality. The treatment of this point would require a paper all to itself. Another difficulty is in regard to feelings and desires. Kant cuts the gordian

knot by viewing them as all mechanically conditioned. They fall within the empirical world, and are completely subject to its laws. But I proceed to my next main point.

We have no direct acquaintance with consciousness. We are aware only of contents apprehended, never of the process to which their apprehension is due. We may, of course, be aware of the steps which we take in order to place ourselves in a proper position or mental attitude for experiencing a content, but of the actual consciousness of the content we have no awareness. We have experience of pleasure, pain, desire, striving, and the like. These, however, would seem to be in all cases experiences of which we are aware, but not to be themselves describable as awareness. We seem to postulate the existence of that which we name consciousness or awareness from reflection upon the order and mode of happening of the various contents apprehended. It is inferred or postulated, not itself experienced. No analogy derivable from the known world is in the least degree adequate to express its mysterious character. The nearest analogy is space, and that is a comparison which does not help. Consciousness would seem to be an absolutely unique form of existence. Though we may determine certain of its conditions, and some of its chief effects, we can not specify its inherent nature.

My third point is that the connection established by Kant between time and inner sense is illegitimate and misleading. Time appears to be just as objective as space. It is just as necessary a component of natural phenomena. Motion is the fundamental thing in nature; it is more important than the matter which serves as its vehicle, and by its very nature it demands both time and space; it occurs in both equally. One reason why time is, by Kant and others, taken as less objective than space, and as standing in a closer relation to mind, is, of course, that many so-called mental experiences have no position in space but occur in time. A pleasure or a pain, an odor, a sound, may as effects be traced to mechanical processes in space, but in themselves they are without form and shape, and can not strictly be regarded as possessing spatial position. For this reason feelings and the sensations of the secondary qualities have been regarded as mental in character and as wholly opposite in nature to the physical. But such argument might prove even physical energy to be a mental existence.

To turn now to the other and more difficult aspect of the problem. What does the postulating of consciousness involve? What are the conditions upon which consciousness would seem to rest? Kant's answer to this question is given in the *subjective* and *objective deductions of the categories*. For the purposes of this paper we



need consider these deductions only in so far as they raise the question in regard to consciousness of time. Consciousness of time is involved in all our consciousness. Though highly complex, it is the minimum form in which our consciousness exists. It can not be explained as having developed from a more primitive and simpler form in which such temporal consciousness is not already contained. It is consciousness of a succession as a succession. Admittedly complex, it must have conditions equally complex. These Kant formulates as being synthetic processes whereby the past is held together with the present, being reproduced in image, and being recognized as representing experiences which have just elapsed. Ultimately this recognition involves some form of self-consciousness, implicit though not explicit. Kant therefore postulates as the indispensable conditions in and through which alone the minimum consciousness can be rendered possible, a large number of synthetic processes. These synthetic processes must take place and complete themselves before consciousness can exist at all. And as they thus precondition consciousness, they can not themselves be known to be conscious; and not being known to be conscious, they may not even be described as mental. We have, indeed, to conceive them on the analogy of our mental processes; but that may only be because of the limitation of our knowledge to the data of experience.

Further, we have no right to conceive them as the activities of a noumenal self. We know the self only as conscious, and the synthetic processes, being the generating conditions of consciousness, are also the generating conditions of the only self for which our experience can vouch. They are named "synthetic" because consciousness in its very nature would seem to involve the carrying over of content from one time to other times, and the construction of a more comprehensive total consciousness from the elements thus combined. Kant is here analyzing, in its simplest and most fundamental form, what William James has described in his "*Principles of Psychology*,"<sup>2</sup> as the telescoping of earlier mental states into the

<sup>2</sup> Cf. Vol. I., p. 339. "Each later thought, knowing and including thus the thoughts which went before, is the final receptacle—and appropriating them is the final owner—of all that they contain and own. Each thought is thus born an owner, and dies owned, transmitting whatever it realized as its self to its own later proprietor. As Kant says, it is as if elastic balls were to have not only motion, but knowledge of it, and a first ball were to transmit both its motion and its consciousness to a second, which took both up into *its* consciousness and passed them to a third, until the last ball held all that the other balls had held, and realized it as its own. It is this trick which the nascent thought has of immediately taking up the expiring thought and 'adopting' it, which is the foundation of the appropriation of most of the remoter constituents of the self. Who owns the last self owns the self before the last, for what possesses the possessor possesses the possessed."



successive experiences that include them. They telescope in a manner which can never befall the successive events in a causal series, and which is not explicable by any scheme of relations derivable from the physical sphere.

The point may be made clearer by inquiring how Kant conceives the material upon which the synthetic processes act. They are, he says, due to the affection by things in themselves of those factors in the noumenal conditions of the self which correspond to "sensitivity." ("Outer sense" must not be identified with the bodily senses.) But just as he frequently speaks as if the synthetic processes were mental activities exercised by the self, so also he frequently uses language which implies that the manifold upon which these processes act is identical with the sensations of the special senses. But the sensations of the bodily senses, even if reducible to it, can at most form only part of it. The synthetic processes, interpreting the manifold in accordance with the fixed forms, space, time, and the categories, generate the spatial world within which objects are apprehended as acting upon one another, and also as causing through their action upon the sense-organs of the animal body sensations as events in time. Sensations, as mechanically caused, are thus on the same plane as other appearances. They rest upon the same complex generating conditions as the motions which produce them. And the material for all of them, and not merely for our sensations, must be supplied in the primary manifold.

Obviously, what Kant does is to apply to the interpretation of the noumenal conditions of our conscious experience a distinction derived by analogy from conscious experience itself—the distinction, namely, between our mental processes and the sensuous material with which they deal. The application of such a distinction may be inevitable in any attempt to explain human experience; but, as Kant has himself pointed out, it can very easily, unless carefully interpreted, prove a source of serious misunderstanding. Just as the synthetic processes which generate consciousness are not known to be themselves conscious, so also the manifold can not be identified with the sensations of the bodily senses. These last are events in time, and are effects not of noumenal but of mechanical causes.

Kant's conclusion is twofold: positive, to the effect that consciousness, for all that our analysis can prove to the contrary, may be merely a resultant, derivative from and dependent upon a complexity of conditions; and negative, to the effect that though these conditions may by analogy be described as consisting of synthetic processes acting upon a given material, they are in their real nature unknowable by us. Even their bare possibility we can not profess to

comprehend. We postulate them only because they would seem to be demanded as indispensable conditions of our *de facto* experience. They can be defined only in terms of their effects, not in their own non-experienced nature.

Kant obscures his position by the way in which he frequently speaks of the transcendental unity of apperception as the supreme condition of our experience. At times he even speaks as if it were the source of the synthetic processes. That can not, however, be regarded as his real teaching. Self-consciousness, and with it the unity of apperception, rests upon the same complexity of conditions as does outer experience, and may, therefore, be merely a product or resultant. It is, as he insists in the *paralogisms*, the emptiest of all our conceptions; and can afford no sufficient ground for asserting the self to be a spiritual and abiding personality. We can not by theoretical analysis of the facts of experience or of the nature of self-consciousness prove anything whatsoever in regard to the ultimate nature of the self.

Kant's phenomenalism thus involves an objectivist view of individual selves and of their interrelations. They fall within the single common world of space. Within this phenomenal world they stand in external mechanical relations to one another. They are apprehended as embodied, with known contents, sensations, feelings, and desires, composing their inner experience. There is, from this point of view, no problem of knowledge. On this plane we have to deal only with events known, not with any process of apprehension. Even the inner components of the empirical self are not processes of apprehension, but apprehended existences. It is only when we make a regress beyond the phenomenal as such to the conditions which render it possible, that the problem of knowledge arises at all. And with that regress we are brought to the real crux of the whole question—the reconciliation of such phenomenalism with the conditions of our self-consciousness. For we have then to take into account the fundamental fact that each self is not only a minute existence within the phenomenal world, but also in its powers of apprehension coequal with it. The self known is external to the objects known. The self that knows is conscious of itself as comprehending within the field of its consciousness the wider universe in infinite space.

Such considerations would, at first sight, seem to force us to modify our phenomenalist standpoint in the direction of subjectivism. For in what other manner can we hope to unite the two aspects of the self, the known conditions of its finite existence, and the consciousness through which it correlates with the universe as a whole?



In the one aspect it is a part of appearance; in the other it connects with that which makes appearance possible at all.

Quite frequently it is the subjectivist solution which Kant seems to adopt, but he also suggests one that is more in harmony with his phenomenalist tendencies. He would then seem to distinguish between the grounds and conditions of phenomenal existence and the special determining causes of individual consciousness. Transcendental conditions generate consciousness of the relatively permanent and objective world in space and time; empirical conditions within this space and time world determine the sensuous modes through which special portions of this infinite and uniform world appear diversely to different individuals.

But such a solution is too crude to be acceptable. Consciousness of the objective world in space and time does not exist complete with one portion of it more specifically determined in terms of actual sense perceptions. Rather the consciousness of the single world in space and time is gradually developed through and out of sense-experience of limited portions of it. Kant leaves undiscussed all the obvious objections to which his phenomenism lies open. He does not state in any adequate manner how from the phenomenalist standpoint he would regard the world described in mechanical terms by science as related to the world of ordinary sense experience, nor how different individual consciousnesses are related to one another. The very fact, however, that such problems are inevitably suggested by his critical inquiries is the best possible proof of their permanent value. They could never have occurred in any such form to his predecessors.

Bergson is one of the many who have attacked these problems in the light of distinctions first drawn by Kant. And in so doing he reformulates them in a manner which, though in many respects unsatisfactory, and which perhaps is not ultimately tenable, yet places the issues in a new and suggestive light. He sets aside the question of the genesis of consciousness. He assumes it as given. His starting-point is the world of material bodies in space. His problem is not to account for consciousness of it, but to explain why we know it in a form relative to our individual position and practical needs. It is the very nature of consciousness to correlate with reality as a whole, and to reveal it as it really exists. By right it is complete knowledge of true independent reality; in actual fact it is limited in extent, permeated with illusion, and largely personal. The problem is not, therefore, one of genesis, but of the limitation of the already existent—not how a self that is embodied and works under animal conditions is capable of attaining to a consciousness



of the universe within which it falls, but how mind, which is inalienably universal, can be limited by animal conditions. The change is, indeed, one of orientation rather than of problem, for consciousness of time, and recognition, *i. e.*, memory still remain central issues. Consciousness is "a force essentially free and essentially memory, a force whose very character is to pile up the past on the past, like a rolling snowball, and at every instant of duration to organize with this past something new which is a real creation."<sup>3</sup>

This position, when thus abstractly and baldly stated, may well seem to embody a most unlikely and even repellent thesis. Bergson renders it, however, both interesting and illuminating by the suggestiveness with which he works it out in honest detail. Common to him and to Kant remains the contention that an adequate theory of knowledge must reconcile realism and phenomenism with one another, and both with the individualistic requirements of self-consciousness. And I should especially insist, considering the recent reemergence of realistic theories, upon phenomenism as a fundamental characteristic of our experience, calling for the most ample recognition. Only so can we formulate a position which is capable of allowing both for human knowledge and for human ignorance, both for known facts and for unknown possibilities. And only so, as it seems to me, can an idealist philosophy escape the suicidal admission of the unlimited validity of the naturalistic position.

But Bergson modifies Kant's problems in still another direction; and by that restatement is enabled to carry their discussion several steps further. As above mentioned, Kant does not explain in what relation the mechanical world of natural science stands to the world of ordinary sense experience. The key to this question, or at least a point of view from which it can be profitably investigated, is supplied by biological science,<sup>4</sup> and though developed by many writers, has received its most convincing statement in Bergson's "*Matière et Mémoire*." Our sense perceptions are permeated through and through, from end to end, with illusion. Objects are seen as dwindling in size, as changing in form and color, as they pass into the distance. The parallel sides of a street are seen to converge as they recede. These illusions justify themselves by their practical usefulness, since they enable us to compress a wide extent of landscape into a single visual field, to determine distance, etc. But they likewise establish the unreal fictitious nature, the mental subjective

<sup>3</sup> I quote from the excellent résumé of his views which Bergson has given in his recent article in the *Hibbert Journal*, October, 1911, Vol. X., p. 37.

<sup>4</sup> It was anticipated by Malebranche. It holds a central position in his delightful and most unfortunately neglected philosophy. Cf. *British Journal of Psychology*, Vol. I., part 3, p. 191 ff.

character of the world perceived. The extent to which illusion thus permeates our sense experiences does not, however, become evident until we compare the knowledge which they yield with the conclusions of physical science. To define by an example: to sense perception a solid cannon ball appears to be a cold, black, continuous mass of quiescent matter. According to science it consists of millions of discrete particles which are neither cold nor black, and which are in constant motion. These particles by their movements occupy the volume of the sphere, much as a small army may occupy a huge extent of country, not by bulk but by mobility. To sense perception the ball thus appears as being exactly what it is not, and not at all as what it is. Though we can take it in our hands and gaze upon it with our eyes, we can not thereby discover its real nature. When we look at the ball, we are unable to see what actually is there, and instead we see something that is not there at all. The same holds of every one of our sense perceptions. They do not represent, but misrepresent, the true nature of the real. Not through sense experience, but only through scientific research, is genuine reality ever attained. The purpose of sense experience is not knowledge, but power. Its *raison d'être* is to yield, in the most convenient form possible, such apprehension of the observer's environment as will render adaptation and practical control possible. And this convenient form in which external objects are apprehended may be, and generally is, entirely false, when tested by a theoretical standard. The deceptions (if we may so name them) of sense experience justify themselves by their practical usefulness, as well as by their esthetic value. And in spite of their illusoriness they yield data sufficient to render possible of achievement the adventurous task undertaken by the scientist, namely, that of discovering from them their actual generating conditions.

The difference between the sensible and the mechanical is due in part, Bergson teaches, to a difference of *tempo* in the two series. "The essence of life seems to be to secure that matter, by a process necessarily very slow and difficult, should store up energy ready for life afterwards to expend this energy suddenly in free movements."<sup>5</sup> Consciousness is similarly constituted. "In an interval which for it is infinitely short, and which constitutes one of our 'instants,' it seizes under an indivisible form millions and billions of events that succeed each other in inert matter. . . . It is this immense history that I seize all at once under the pictorial form of a very brief sensation of light. And we could say just the same of all our other sensations. Sensation, which is the point at which consciousness touches

<sup>5</sup> *Loc. cit.*, p. 35.



matter, is, then, the condensation, in the duration peculiar to this consciousness, of a history which in itself—in the world of matter—is something infinitely diluted, and which occupies enormous periods of what might be called the duration of things.”<sup>6</sup>

So far Bergson is only reinforcing the general teaching of natural science. But he likewise employs this pragmatic point of view in explanation of those categories of the understanding which Kant regarded as an ultimate and not further explicable endowment of the human mind. They too have their origin in our practical needs. Though the primary conscious purpose of the scientist is the gaining of knowledge, the modes in which he seeks to satisfy this endeavor are still influenced by non-theoretical conditions. The direct and immediate outcome of the sciences is, consequently, not knowledge, but power. Like sense experience, they deal only with appearances, though certainly with appearances that may legitimately be regarded as nearer to the independently real. For through knowledge of them man is enabled to transform what would otherwise be a fixed environment, tyrannically dictating the general principles of his life, into one that is more in harmony with his human and spiritual needs.

Problems, closed for Kant, thus open upon new perspectives; and become possible of further development by novel methods on fresh lines. If the mechanical categories are the outcome of practical needs, and are therefore systematic illusions justified by their fruits; and consequently, as we may further conclude, are only partial in their distortion of the real, it may be possible that scrutiny as careful and painstaking as that which has been expended upon the appearances of sense, may find in certain of the elements and contours of our scientific results data sufficient to enable the mind to penetrate even into the hidden mysteries of the absolutely real. For this, ultimately, is Bergson's fundamental divergence from Kant. He is no less emphatic upon the merely phenomenal character of the mechanical world in space. But he cherishes hope, and supplies a wealth of detailed argument in support of the assertion, that by empirical circumstantial reasoning, based upon the fundamental characteristics of natural existence and of human life, we may penetrate to the noumenal sphere. The limits of sense experience have been transcended in the construction of science. Thanks to these successes, and to the closer contact with reality which is thereby acquired, the achievements of the sciences may be accompanied by that less assured, but even more valuable insight which is only to be won by adventurous journeying upon the perilous paths of metaphysical speculation. Such insight, anticipatory and almost prophetic, ahead

<sup>6</sup> *Loc. cit.*, pp. 36-37.



of the sciences but still in touch with them, has been the very breath and spirit of human endeavor in the past. It may well continue to perform the same precarious but indispensable function in the future. In opposition to a purely naturalistic interpretation of the real, it can always draw afresh upon the comparatively untapped resources of our specifically human and essentially spiritual life.

In conclusion, I may summarize and define the main points of this paper by stating them in their relation and opposition to the standpoint which Professor Dewey has so forcibly developed in his recent articles.<sup>7</sup> Firstly, the really critical issue in the present-day problem of knowledge would seem, as Professor Dewey has argued, to be the question whether awareness or consciousness may legitimately be regarded as an *event*, and therefore as having a place in the single continuous causal series that constitutes the objectively real. The thesis which I have tried to maintain is that this may be true of sensations, but not of the knowing process, of the awareness or consciousness as such. Consciousness can not be described as an event in any sense which would set it as an integral element into the single causal time and space series.

Secondly, Professor Dewey denies that knowing is a "unique and non-natural type of relation." I have tried to argue for its uniqueness. "Non-natural" is a hard term; but taking it as meant, *i. e.*, as signifying anything and everything that falls outside the single continuous causal series investigated by the natural sciences, I have sought to defend the more traditional view, that the knowing process may be so described.

Thirdly, it has been argued above, that we may judge of man either from the point of view of his animal organism or from that of his inner life. Professor Dewey would seem to maintain that so far as regards the problem of knowledge, or at least of sense perception, the former alone is required.<sup>8</sup> The thesis of this paper is the directly counter position. The problem of perception is for philosophy uniquely important, and can not be solved by any conceivable advance either of physiology or of biology upon their present lines. With a physiology or a biology fundamentally different from those actually existent we are not, of course, concerned; in regard to such no prophecy, positive or negative, can be made.

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<sup>7</sup> This JOURNAL, Vol. VIII., pp. 393 and 496.

<sup>8</sup> *Cf. loc. cit.*, pp. 400 and 552.

## DISCUSSION

## BERGSON'S ANTI-INTELLECTUALISM

PROFESSOR PERRY'S "Notes on the Philosophy of Henri Bergson"<sup>1</sup> is a trenchant criticism which undertakes to maintain two propositions: (1) "Bergson's indictment of the intellectual method rests on a misunderstanding of that method" (p. 674). (2) Bergson's anti-intellectualism is "involved in a more serious error" in that it "puts forth a claim" to immediate knowledge which is "unfounded" (p. 678).

I confess I am not able to make out the particular misunderstanding which Professor Perry means to attribute to Bergson under the first point of his criticism. From the statements (p. 675) it is not clear to me whether this misunderstanding relates to the nature and function of the concept, or whether it relates to the consistent procedure of the anti-intellectualist.

I do not think that Professor Perry's statement (p. 675) that "Bergson is not clear as to whether a concept is to be distinguished by its function or its content" is quite to the point. It seems to me that Bergson is *altogether* clear in that matter. Bergson clearly teaches that, since the function of the intellect is to direct our action upon reality instead of revealing the *nature* of reality, concepts are the special instruments or tools by means of which our actions are made effective as they insert themselves into the real world. This essentially instrumental function of our concepts determines also their *content* or structure; the two, function and content, correspond. Our concepts are plans of action, and not mediate ways of penetrating or disclosing the nature of reality. Conceptual thinking is not "a mode of access to immediacy." Hence, the "strange procedure" which Professor Perry points out (p. 675), namely, "to prove that intellect is essentially instrumental and then to attack it in behalf of that very end for which it is useful," can not rightly be imputed to Bergson's pragmatism.

I can not see that Professor Perry has brought forth anything under the second point of his criticism which tends to disprove Bergson's anti-intellectualism. All that Professor Perry says (pp. 676-7) about spacial continuity, etc., Bergson could accept. In the case of space, which is an intellectual construction, the formula and added statements which Professor Perry suggests, can mean, nay, they describe this kind of continuity; for this continuity consists of just those elements and connections in which the intellect is at home;

<sup>1</sup> This JOURNAL, Vol. VIII., page 673.

this quantitative multiplicity being made up of elements which are homogeneous, static, and which merely touch, but do not penetrate, each other. Such a system or order can be conceived and described in the manner Professor Perry suggests (p. 677).

But how about the other continuities, those of time and motion? It is the essence of Bergson's contention, that when the intellect deals with these continuities, it can do so only as it frames concepts which leave out of their content and their legitimate function just that which is distinctive of time and that which is the essence of motion. The intellect thinks time only as it spacializes it, and motion only as it reduces it to a succession of immobile states. Now, under this third point of his critique, I can not see that Professor Perry has broken the force of this contention.

In the next criticism, the substance of Professor Perry's reasoning against Bergson's position, "that to conceive time is to spacialize it," is as follows: "Bergson is misled by supposing that because time is conceived as orderly, it is therefore nothing but order. Bare logical order is static and can never express time. But it is an utterly different matter to regard time, like space and number, as a case of order, having the specific time quale over and above the properties of order. Position, interval, before and after, are then to be taken in the temporal sense; and the terms of the series are not to be taken as bare logical terms, still less as spacial points, but as instants possessing a unique time-character of their own" (p. 678).

Now, this reasoning, I think, begs the question. For, to regard time as a "case of order," and at the same time to give it the "*specific quale*" of the sort proposed, is as impossible a logical undertaking as would be the attempt to place something in a certain genus, and at the same time give it a mark or quale which takes it out of that genus altogether, and puts it within some other genus. The "time quale," the "unique time-character" which Professor Perry thinks constitutes only a specific differentia in the case he instances, really constitutes a generic difference. What we have in this instance is not a species within a genus, but two genera between which, Bergson contends, there is a radical difference. I do not think Professor Perry, in this part of his critique, has successfully met Bergson's contention that the concepts of time and motion which our intellect forms do not give us knowledge of these realities; they do not give us "access to that immediacy" in which real duration and motion are given us.

The second main criticism which Professor Perry makes upon Bergson's anti-intellectualism is that Bergson "puts forth a claim which is unfounded—the claim, namely, to the immediate apprehension of a fused and inarticulate unity" (p. 678).



The substance of the critic's reply to Bergson is that what Bergson puts forth as matter of immediate knowledge is not really knowledge at all. Thus, Bergson says:<sup>2</sup> "The more we succeed in making ourselves conscious of our progress in pure duration, the more we feel the different parts of our being enter into each other, and our whole personality concentrate itself in a point." To this Professor Perry replies (p. 679): "What Bergson is here describing is, I am convinced, the disappearance of cognition into an experience which is not an experience of anything at all. . . . My experience of life has dissolved; but nothing follows concerning the nature of life. I have simply closed my eyes to it. I have blurred and blotted out my knowledge of life."

Now, after reading all the passages in Bergson's writings which relate to intuitive knowledge, I can not convince *myself* that Bergson is not describing a truly cognitive experience, instead of giving us knowledge at the vanishing-point. My own introspection verifies Bergson's statements. I am quite certain that I have an experience of something, namely, of real time in its flow and interpenetration of moments. I have, it seems to me, an immediate knowledge of just that qualitative multiplicity of psychical states which Bergson has clearly described and accurately distinguished from the other kind of multiplicity, of which we have knowledge only through the mediation of conceptual thinking.

I am unable to see on what grounds Professor Perry is "convinced" of the erroneousness of Bergson's description, other than his own introspection, and possibly that of other individuals whose introspection yields the same results. It seems to me that the utmost Bergson's critic makes out against Bergson's position is that Bergson's claim to an immediate apprehension of the sort described is not borne out by the introspective analysis of at least *one* person, and possibly not borne out by the introspection of other individuals. But that the claim to such non-conceptual knowledge is an unfounded one, the critic, in my opinion, has not shown.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Lectures on the Experimental Psychology of the Thought Processes.*  
EDWARD BRADFORD TITCHENER. New York: The Macmillan Co. 1909.  
Pp. ix + 318.

This book consists of five lectures delivered at the University of Illinois; the lectures proper fill about two thirds of the volume, the rest being

<sup>2</sup>"Creative Evolution," page 201.

given to notes. Together they form a needed analysis of the contributions to the experimental investigation of thought by Marbe, Watt, Ach, Messer, Bühler, etc., besides giving the author's estimate of their value, his own present views concerning the problems raised, and his suggestions for fruitful directions of future research. It is doubly welcome because of the author's happy gifts for such a task.

At the very outset it is shown that individual differences in mental make-up must play an important part in the psychology of thought, that, indeed, "a frank acceptance of the teachings of differential psychology will go far to allay some of the perennial controversies of the text-books" (p. 7). What part they may play Titchener indicates by laying bare the workings of his own mind. His mind is markedly of the imaginal—the mixed imaginal—sort. Sometimes one kind of imagery is uppermost, sometimes another. In reading, for instance, his ultimate standard of clarity and consistency in an author is schematically visual—the visual pattern not merely an accompaniment of other processes, but one that "is or equals my gross understanding of the matter in hand" (p. 13). For him either visual or kinesthetic imagery, quite apart from verbal, may be the vehicles of logical meaning—may mean of themselves—and not act merely as guide-posts to something beyond.

This discussion leads to one concerning the possibility of abstract or general ideas. It is pointed out that in the traditional English teaching there has been here a confusion between logic and psychology, for the abstract is not the conscious process, but the logical meaning. Titchener believes, indeed, that a particular definite image might carry abstract meaning and a vague image a particular meaning, since *attentional* clearness is the essential element in the meaningfulness of an image, and not intrinsic definiteness.

The argument thus far points to psychological sensationalism; the book is, indeed, a defense of sensationalism as an adequate instrument of interpretation in dealing with thought processes as well as with others. The author sharply separates modern sensationalism, however, from that of the associationists. They dealt with meanings, thought-tokens, bits of knowledge, with *sensations of* and not with *sensations*; the sensations and ideas of modern psychology are, on the contrary, *Erlebnisse*, data of immediate experience. Meanings, furthermore, are stable and may be ordered mosaic wise or chain-wise, but experience is continuously flowing; a psychology whose elements are sensations is, therefore, a *process* psychology, quite innocent of mosaic and concatenation. Whether referring to "substantive" or "transitive" meanings, the psychological process is always of itself transitory. Nor did the associationists help matters by invoking mental chemistry, for "we do not expect, if two sensations are put together, to obtain a simple concurrence of their two qualities" (p. 32). Finally, modern sensationalism is merely an heuristic principle and not a preconceived theory; to us the sensation is an analytic element, says Titchener, abstracted from complex mental experiences, not a synthetic or generative element—not a "first term" in the construction of mind.



The upshot of this first lecture is, then, that the image may adequately *equal* meaning and that, if the task of modern psychology is analysis of experience into its existential elements, sensation (with affection) is doubtless an adequate tool.

The second lecture deals with "reference to object" as the criterion of mind." In the various "reference to object" theories psychological fact has been cast into logical form; the separation of the conscious experience into act and content, or idea and object, leads to overarticulation and to neglect of analysis, because logical construction and not introspective analysis is here in control of classification and analysis. To extricate psychology from this Titchener invokes the process character of mind: the way a process runs its course (act) makes it sensing, feeling, or thinking, whereas the quality thus in passage (content) makes it tone or pleasure. Furthermore, the pointing relation of the "transitive objectivity" theories (Stout, Witasek) does not obtain in feelings, organic sensations, etc., whereas we do find it in the physical world: the transitive reference is not, therefore, existentially speaking, a unique, characteristic criterion of mind. The concept of objective reference, in whatever form, is thus an irrelevant injection of logic into psychology, warping it away from the direct existential analysis of conscious phenomena where we do, in fact, find objectless mental processes. This exclusion of the "logical" objective-reference postulate from the existential science of psychology frees us from a frequently urged difficulty—that two ideas or images under the form of existence can not make a meaning (because meaning is reference to object and this can be known but not imaged), since, in an existential psychology, the final appeal is to introspection; and introspection tells us, thinks Titchener, that under certain circumstances two ideas do make a meaning.

The third lecture takes up the actual work of the experimental investigators. Their attempt, the details of which can not here be considered, was, essentially, to isolate under experimental conditions some thought process and to require from the subjects careful introspection on its behavior. These introspective data Titchener thinks very valuable. As to the relative merits of the individual investigators, he believes that Marbe and Binet made a good beginning, that Ach and Watt followed logically with respective specializations of the problems involved, that Messer, disregarding the good example of Ach and Watt, tried too much, and that Bühler, in devoting himself to "a revolutionary attempt to rewrite the psychology of thought from the beginning" (p. 98), forsakes rigid experiment and is methodologically retrogressive.

Emerging from the work of these experimenters there appears, as perhaps most characteristic, the *Bewusstseinslage*—"an almost untranslatable term, meaning something like posture or attitude of consciousness" (p. 100), but identifiable, at least, with what Angell had previously phrased as "a tingling sense of irradiating meaning," and Stout as the experience of "imageless thought." Some such attitudes are doubt, difficulty, effort, hesitation, and the opposite experiences of certainty, assent,



conviction, etc. Disregarding differences in usage, classification, and theory of the various investigators, we have here an experience that apparently defies analysis into sensations and images, into, in fine, any terms of content whatever; they are essentially obscure and intangible, "imageless presentations" with, however, perfectly "unequivocal reference," the mind being thrown into a certain set or adjustment, the significance of which may be attentionally clear but empty of imaginal furnishings. There may, of course, be transitional forms (Titchener, indeed, regards the present pressing problem to be the tracing of the development of these attitudes, within the individual mind, from their original imaginal matrix),<sup>1</sup> but the full-blown attitude is apparently contentless. Does, then, consciousness really harbor such things? If so, are they mental elements? If they are not, what are they? The challenge to sensationalism is unequivocal and unavoidable.

It is but a short step to pass, in the fourth lecture, from the *Bewusstseinslage* of meaning to thought itself. Do the experimental results bear out the theory of imageless thought? Marbe, unsuccessful in his search for *psychological* judgment processes, invokes, as the guide in judgment, an unconscious dispositional purpose. Watt proposes, as his psychological criterion of judgment, the *Aufgabe* (problem or task) given, in his experiments, in the instructions of the experimenter and definable, more generally, as the underlying *intention* in control of an activity. This it is that distinguishes a judgment from a mere sequence of experiences, and, although as explicit conscious experience it may be past and gone, it persists as an appreciable influence—as an automatic set, attitude, or adjustment. This determining "problem" is also clear to Messer and Aeh. As the reviewer understands it, we are here again in the presence of a *Bewusstseinslage*—a *Bewusstseinslage* of cognition—that may function effectively, but exhibit no apparent imaginal content. Bühler finds, indeed, the most important factors in the thinking of his subjects to be something without sensible content, referred to as awareness, or knowledge, or "the consciousness that" or, most frequently, thoughts. These are Bühler's *thought elements*, the ultimate units of thought experience. Titchener, it may be remarked, objects to this last result on the specific ground that Bühler's introspective data show what in the sphere of sensation would be called the stimulus error—the observer does not describe his thought, but, instead, what it is about, describes not the conscious process as such, but formulates "the reference of consciousness to things" (p. 147)—a criticism applying also to Binet and Woodworth.

But aside from this and aside from the unsatisfactory state of affairs that exists, as the author shows, as to a proper psychological criterion of judgment, the investigators agree that there is present in the thought process an effectively determining factor, yielding, however, no explicit conscious (sensory or imaginal) content.

The challenge to sensationalism is wholesome and should be frankly and gladly met, thinks Titchener. In the last lecture he does what he

<sup>1</sup> See, on this, Helen Maude Clarke, "Conscious Attitudes," *American Journal of Psychology*, 1911, Vol. XXII., pp. 214-249.

can, at the present stage of investigation, to meet it. The gain from previous work is clear: conscious states like doubt, hesitation, certainty, etc.—attitudes—have been isolated and the fact of determination, *Aufgabe*, has been recognized as a principle of explanation in strict laboratory procedure. The discovery of *Aufgabe* “has made it impossible for any future psychologist to write a psychology of thought in the language of content alone. I believe, indeed, that the principle of determination, taken together with what I may call a genetic sensationalism, furnishes a trustworthy guide for further experimental study of the thought-processes; and I think that the work immediately before us is, under this guidance, to bring the processes, little bit by bit, under rigorous experimental control” (pp. 163–164). The question is not wholly, therefore, Can the sensationalists find in the alleged imageless experiences *always* a sensory content? but rather, Isn’t content more pervasively present than the imageless-thought disciples suppose, and may not such things as Watt’s *Aufgabe* and Ach’s *determinierende Tendenzen* be, genetically, developments from processes essentially imaginal? The further question, it is true, also awaits: If, originally full of content, these experiences are now empty of it, how should a sensationalistic psychology now classify them?

Three regulative maxims are first proposed that should direct inquiry into these matters. (1) Psychology must steer circumspectly between logic, on the one hand, and common sense, on the other. (2) Psychology, in such problems as thought, must supplement the analytic treatment with the genetic, racial as well as individual—an analysis must be repeated at the various formative levels of consciousness. Furthermore, we shall take as a mental element “any process that proves to be irreducible, unanalyzable, throughout the whole course of individual experience” (p. 170). If an attitude can be traced back in the individual to an imaginal source, it is not a new kind of conscious element. (3) “Consciousness may be guided and controlled by extra-conscious, physiological factors—by cortical sets and dispositions” (p. 173)—a determination that may lead, too, to novel conscious connections.

Titchener then attacks the problems directly. Is it nonsense to call a psychological fact or occurrence the meaning of another psychological fact or occurrence? Can two ideas be both idea and its meaning? Yes, under certain circumstances, as already stated in the second lecture. Psychologically, “meaning—so far as it finds representation in consciousness at all—is always context,” and context is “simply the mental process or complex of mental processes which accrues to the original idea through the situation in which the organism finds itself” (p. 175). Originally meaning is kinesthesia—the sensations involved in a characteristic bodily attitude “are psychologically the meaning of that process. . . . Afterwards, when differentiation has taken place, context may be mainly a matter of sensations of the special senses, or of images, or of kinesthetic and other organic sensations, as the situation demands” (p. 176). Kinesthesia and verbal imagery are especially important, since words themselves were originally motor attitudes, kinesthetic contexts.



But, further, meaning is probably carried in purely physiological terms; the *Aufgabe* must be there, but that need not either come to consciousness. As for imageless thoughts, Titchener's own introspection does not show him, in his search for *Bewusstseinslagen*, forms of experience different in kind from such kinesthetic backgrounds as his careful introspection often discovers in the respective attitudes involved in working off, for instance, on a typewriter, a lecture or the daily batch of professional correspondence. But the contention is not at all that attitudes will always, in their developed state, exhibit content, but that, since genetically they probably spring from sensory experiences, they are not distinct conscious *elements*. While still recognizable as *conscious* attitudes, they either show some remnant of imagery or, since they may be, in their development towards physiological dispositions, on the brink of unconsciousness, exhibit none discoverable. In much of this Titchener is, of course, simply expressing tentative belief and not experiment-born conviction, but the main contention, that sensationalism has still a well-considered word or two to say, stands clear. In "feelings of relation," too, Titchener finds content; but here, also, habit operates towards unconscious mechanization, towards physiological disposition. As to judgment, we do not yet know what it psychologically *is*; but the task of psychology is to work out the particular problems set by investigations already made and compare results with the teachings of logic, in order to find out what kinds of consciousness correspond with logical definitions of judgment.

Finally, we are not yet driven to psychological revolution. "My task has been to persuade you that there is no need, as things are, to swell the number of mental elements; that the psychology of thought, so far as we have it, may be interpreted from the sensationalistic standpoint, and so far as we still await it, may be approached by sensationalistic methods" (p. 194).

Titchener's personal answer to the challenge of the exponents of imageless thought is contained, in gist, in the following statement, referring, specifically, to "feelings of relation": "I must declare . . . that I can bear witness both to kinesthesia and to cortical set, but that between these extremes I find nothing at all" (p. 188). That is, in such things as the *Bewusstseinslage*, as the *Aufgabe*, there is either discoverable content (sensational, imaginal) or there is unconsciousness, mechanization, physiological disposition, cortical set. It seems to the reviewer that the "cortical set" is an interpretation of the "nothing at all"; that is, introspection may discover content, but when it finds "nothing at all," it takes the matter to lie outside the conscious field and refers it then to cortical set. Others, however, prefer to keep these *Bewusstseinslagen*, etc., *in* consciousness and to call them "imageless." Introspection may, of course, give you "imagelessness"; it can not give you cortical set. It might be a question, therefore, whether those who prefer to retain attitudes, no matter how contentless, within consciousness, are not adhering the more closely to the introspective ideal. The reply of sensationalism to this is, of course, obvious: when any *attitude* reveals no sen-



sational or imaginal content, one is not directly aware of it at all but infers its presence (as unconscious or physiological set) by its results in (introspective) consciousness; it can not, therefore, be a part of consciousness. But the rebuttal is equally obvious: first, some observers do confess to awareness for which subsequent reflection persistently fails to unmask imaginal content. Secondly, any one's introspection shows that one may be, at least momentarily, naïvely aware of some attitude, like doubt, with, at the time, no awareness whatever of sensations or images; it is only by the subsequent reflective analysis of introspection that the attitude, like a dissolving magic lantern view, may fade away and be replaced by an array of sensations. Now by what license can the first act of introspective awareness (that of doubt) be identified with the second (that of sensations)? Surely, if introspection is the arbiter, as the sensationists would have it, to say that the first is the second is to forsake introspection and invoke logical construction.

But, although even the introspective criterion does not appear to give the honors wholly to the sensationists, the reviewer considers the difficulty between them and the exponents of imageless thought as one that neither experiment nor introspection can settle. It is a matter of just that naughty logical construction which those to whom it is axiomatic that introspection is the final arbiter intrench themselves against. Shall the term consciousness be limited to introspectable content, everything else being cortical set, or shall we leave physiology alone here and affirm that the contentless attitudes and *Aufgaben* are simply forms of consciousness on which the additional reflective process always involved in introspection is not possible? To this question the strictly introspective dispute as to whether one may or may not be directly aware of attitudes empty of discoverable content is, of course, not germane. The dilemma appears clear: either we must reserve the term "conscious" for the gifts of introspection, in which case we have a psychology limited to the field of attainable reflection, all else being extra-conscious—physiological, if you will—or we must maintain that the field of real conscious "stuff" lies underneath and around and about the field of introspection—including, therefore, "mechanized" *Bewusstseinslagen* and *Aufgaben*—the data offered by introspection being simply the possible additional reflections that we may make on a part of it. The attitude in which no content is discoverable is merely conscious process successfully resisting reflection. This is, of course, quite aside from the question of whether it is a distinct kind of conscious *element*, for even if it be true that a process traceable back to a stage involving imaginal content can not be a distinct element, does the fact that in its development from this stage it gradually loses such content mean anything more than that it no longer presents introspectable attributes? Excluding it as a novel *element*, must we also throw it out of *consciousness* altogether? Is it logical to call it a *conscious* attitude so long as it is embedded in an imaginal matrix and then make it a *physiological process* when the imagery has forsaken it? Nor is all this a mere question of naming, of

classification; it is a question of the definition of consciousness, one's answer to which sets the *Aufgabe* that controls even the details of laboratory procedure.

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*Phases of Evolution and Heredity.* DAVID BERRY HART. London: Rebman Limited. 1910. Pp. xi + 259.

The Darwin-Wallace theory falls short in two respects. (1) It does not show where the power of variation in the individual lies. (2) No adequate explanation of the inheritance of variation is offered. Circumcision, practised generation after generation, plainly demonstrates that artificially produced variations in the "soma" of individuals are not transmitted to subsequent generations. Weismann made an advance on Darwinism when he asserted that the power of variation lies in the primitive germ-cells of the sexual glands, but he did not explain adequately the exact nature of the process of transmission. Mendel's experiments in artificial cross-fertilization between tall pea-plants and a dwarf variety showed that the first generation consisted uniformly of tall pea-plants. When these were allowed to self-fertilize, the result was talls and dwarfs in the ratio 3:1. The dwarfs thereafter bred true, but the "talls gave, on self-fertilization, one third which bred true to tallness and two thirds which, as impure talls, gave somatic talls, and also dwarfs breeding true again in the ratio 3:1." From this Mendelians infer that dominance and recessiveness of certain characteristics, called unit-characters, are accounted for by the theory of gametic segregation and combination according to the law of chance. Dr. Hart believes that the principal defect in the Mendelian theory is to be found in the fact that it states the ratio of transmission in relation to the "soma" of the plant only. An organism (plant or animal) consists of the adult individual part or "soma" and the propagative part. The latter is the determining factor in future reproduction. The author holds that the zygotes in each crossing consist of a propagative and a somatic part. The Mendelian ratio obtains in the propagative part only.

In the fifth chapter, the author discusses what he terms an intrinsic theory of variation and transmission. He sums it up<sup>1</sup> as follows:

The primitive germ-cells which give rise to the gametes are derived from an early division of the zygote, and travel through the organism to the sexual gland without undergoing any mitosis, that is to say, without variation in their structure. In the sexual gland they undergo mitosis, which means variation in the determinants of the unit-characters, according to the law of probability. . . . When the gametes unite, we get half of the varied chromosomes thrown off, and then when the zygote with its proper number of chromosomes is formed, we get the phenomenon of Mendelism, by which the unit-characters are distributed in the zygote, again according to the law of probability; so that by all this we get in subsequent generations organs following the curve of probability in their anatomical condition and function.

Dr. Hart declares that this theory "puts variation by environment quite out of question." This conclusion, however, does not necessarily

<sup>1</sup> P. 94 ff.



stand. It remains to be shown that variations which environment—not artificial mutilation—produces on many succeeding generations do not affect the cells that are set apart for propagation as well as those that constitute the “soma.” Tallness and shortness, which are continually transmitted, are themselves often the result of environment. The propagative cells do not exist independent of and apart from the “soma.” In short, it seems best to wait until more evidence is in before accepting a theory which in part falls back on chance, and for the rest posits two independent causal series, the “soma” which is manifestly influenced by the environment, and the cells set apart for propagation, which act independent of environment.

The book, as a whole, is not a unit, but discusses widely divergent phases of evolution and heredity. One chapter is devoted to the life of Mendel. Other subjects taken up are: “Heredity in Disease,” “The Evolution of the Honey-Bee,” “The Handicap of Sex,” “Evolution and Religion.” The author has written a stimulating book. Most of the chapter captions might well serve as titles of books. FREDERICK GOODRICH HENKE.

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## JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. September, 1911. *The Platonic Distinction between “True” and “False” Pleasures and Pains* (pp. 471–497): HAROLD H. JOACHIM.—It is maintained that the question raised by Plato regarding the reality of pleasure and pain is of great importance. For common opinion the question of the truth or falsity of pleasure and pain does not arise, because for them there is no distinction of “the that” from “the what,” thus marking them off from “knowing” and “willing.” Regarding the distinction of the “that” and the “what” in “knowing” and “willing” as untenable, “feeling” is put in the same class, and the question of reality has equal validity with them. *The Rôle of the Type in Mental Processes* (pp. 498–514): W. B. PILLSBURY.—It is stated that consciousness has to do more with things than with sensations. The two current views that perception is a combination of sensations and that it is a group of movements are rejected. Things are “types” developed in experience out of a necessity of “harmonizing various experiences of the same object.” The origin and nature of the “type” is explained as its meaning is illustrated in the processes of perception, memory, and action. *Philosophy in France, 1910* (pp. 515–534): ANDRÉ LALANDE.—A résumé and brief criticism of various recent books on French philosophy. The emphasis is on religious philosophy. The chief works viewed are: J. J. Gourd: *La philosophie de la religion*; M. Charles Dunau: *Les deux idéalismes*; M. Delvalué: *Rationalisme et tradition*; M. Parodi: *Le problème moral et la pensée contemporaine*. *Reviews of Books* (pp. 535–558): Theodore DeLaguna and Grace Andrus DeLaguna, *Dogmatism and Evolution: Studies in Modern Philosophy*; ARTHUR O. LOVEJOY. Edward Bradford Titchener, *A Text-book of Psychology*; JAMES ROWLAND ANGELL. Emile Bréhier, *Chrysippe*; G. S. BRETT. A. Meinong, *Über Annahmen*:



WILBUR M. URBAN. *Notices of New Books. Summaries of Articles. Notes.*

Kühtmann, Alfred. *Zur Geschichte des Terminismus.* Leipzig: Verlag von Quelle und Meyer. 1911. Pp. viii + 127. M. 4.20.

Marck, Siegfried. *Die Platonische Ideen-Lehre in Ihren Motiven.* Munich: C. H. Beck'sche Verlagsbuchhandlung. 1912. Pp. viii + 180.

Taylor, A. E. *Varia Socratica: First Series.* (St. Andrew's University Publications, No. IX.) Oxford: James Parker & Co. 1911. Pp. xii + 269.

### NOTES AND NEWS

FOR an anthropological research expedition to the islands of Normandy, Fergusson and Goodenough, in British New Guinea, as we learn from the *London Times*, funds are being provided out of the Oxford University common fund and by several of the colleges. The work has been undertaken by Mr. David Jenness, of Balliol College, who proposes, unaccompanied, to spend a year amongst people who are admittedly cannibals. It is stipulated by the university, in contributing to the expedition, that the museum shall have the first offer of articles of interest which may be obtained. Assistance has been promised by the missionaries on Goodenough Island, including the use of a boat and native oarsmen. The first few weeks will be spent in cruising around the islands endeavoring to get on friendly terms with the people and in studying the trade relations. As the natives have sea-going canoes and trade with the neighboring coast and the island of Trobriand, 100 miles away, Mr. Jenness will endeavor to obtain the good will of one of the chiefs and settle down for about a year. Later he will proceed on a mission boat to Rossell Island, at the eastern end of the Louisiade Archipelago, to study some ethnological problems concerning the relationships of Oceanic peoples. Mr. Jenness has been provided with the latest scientific instruments, including a phonograph for recording native songs and speech.

It is stated in the *Journal of the American Medical Association* that Professor Theodor Ziehen, director of the psychiatric and neurologic clinic in Berlin, will resign his position at the end of the winter semester and discontinue all medical work, in order to devote himself exclusively to research in psychology. For this purpose, he will remove to Wiesbaden, where he will erect for himself a private psychological laboratory.

DR. G. STANLEY HALL, president of Clark University, delivered the address at the inauguration of Dr. George E. Myers, principal of the State Manual Training School at Pittsburg, Kansas. The subject of the address was "Educational Efficiency."

PROFESSOR R. S. WOODWORTH, of Columbia University, is planning to spend a semester's leave of absence in visiting the psychological institutes of England and Germany.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE CONCEPT OF IMMEDIACY

THE attempt to determine the character and import of immediacy, as a concept in present-day thought, finds its most promising point of departure in the philosophy of Kant. While it is true that the "back to Kant" movement has been in abeyance of late, the present time is peculiarly in need of reflection upon its borrowings from the Kantian philosophy, in so far as these relate to the issues involved in current controversy. The fundamental issue, in fact, between objective idealism and its opponents may be conveniently centered about the treatment which Kant accords to the concept of immediacy. According to recent critics of objective idealism, this concept is made to cover two divergent and incompatible meanings, a confusion which has been perpetuated by his followers down to the present day.

Stated somewhat generally, the problem which Kant set himself to solve was to ascertain how the concepts of the understanding justify their claim to validity within experience. This problem was particularly acute, owing to the sharp separation postulated by Kant between sense and understanding. The categories of the understanding, as he says, "are not conditions under which objects can be given in intuition, and it is quite possible therefore that objects should appear to us without any necessary reference to the functions of the understanding."<sup>1</sup> "It can not be denied that phenomena may be given in intuition without the functions of the understanding."<sup>2</sup> "We could quite well imagine that phenomena might possibly be such that the understanding should not find them conforming to the conditions of its synthetical unity, and all might be in such confusion that nothing should appear in the succession of phenomena which could supply a rule of synthesis, and correspond, for instance, to the concept of cause and effect, so that this concept would

<sup>1</sup> "Critique of Pure Reason," p. 74. All the references are to the translation by Max Müller.

<sup>2</sup> *Ibid.*, p. 75.

thus be quite empty, null, and meaningless. With all this phenomena would offer objects to our intuition, because intuition by itself does not require the functions of thought."<sup>3</sup>

From this standpoint immediacy is necessarily identified with the material of sense, considered without reference to the concepts of the understanding. Concerning this material of sense, considered by itself, there can be no question of truth or falsehood, such as arises at once when the concepts of the understanding come into play. This separation, however, of sense and understanding disappears as Kant proceeds. "Every representation," as he explains, "contains something manifold, which could not be represented as such, unless the mind distinguished the time in the succession of one impression after another; for as contained in one moment, each representation can never be anything but absolute unity. In order to change this manifold into a unity of intuition (as, for instance, in the representation of space), it is necessary first to run through the manifold and then to hold it together."<sup>4</sup> "Connection, however, does never lie in the objects, and can not be borrowed from them by perception, and thus be taken into the understanding, but is always an act of the understanding, which itself is nothing but a faculty of connecting *a priori*, and of bringing the manifold of given representations under the unity of apperception, which is, in fact, the highest principle of all human knowledge."<sup>5</sup>

Considerations of this kind evidently require a profound modification of the standpoint maintained by Hume. In the first place, we are led to a radically different conception of immediacy. The sense impressions which at the outset represented the sum total of immediate experience, are now placed under the ban as empty abstractions. "Perception without conception is blind." And, secondly, we are required to postulate a process of synthesis, not as an experienced fact, but as a precondition of all experience. That is, this reconstruction of immediacy is bound up with a non-spatial and non-temporal fact. "The mind could never conceive the identity of itself in the manifoldness of its representations (and this *a priori*) if it did not clearly perceive the identity of its action, by which it subjects all synthesis of apprehension (which is empirical) to a transcendental unity."<sup>6</sup> While Kant does not set forth clearly the precise character either of this new immediacy or of this numerical identity pervading experience, the implication of both in his standpoint seems to be reasonably plain.

<sup>3</sup> *Ibid.*, p. 75.

<sup>4</sup> *Ibid.*, p. 82.

<sup>5</sup> *Ibid.*, p. 747.

<sup>6</sup> *Ibid.*, p. 89.



Viewed as an argument, Kant's disquisition possesses an inherent weakness to which his critics have given due attention. The fallacy of assuming in the premises what is denied in the conclusion is so painfully evident that extended exposition is superfluous. If we assume, to start with, that experience consists, in the first instance, of relationless sensations, we are indeed obliged to infer a transcendental unity of apperception; but when we look back from the end of the argument to the beginning, we find that these relationless sensations are altogether fictitious. The transcendentalist who reasons in this fashion is simply sawing off the bough by which he is supported. The final result does not stand forth as a demonstrated conclusion, but as an unsubstantiated assertion. This being the case, the vitality of transcendentalism during the nineteenth century seems a fit subject for wonder. As has been indicated previously, the explanation seems to be found in the fact that the two conceptions of immediacy which Kant failed to keep apart have been persistently confused since his day; and it is to this confusion that transcendentalism owes its influence and prestige.

In order to make clear the nature of this confusion, it is necessary to determine more precisely than is done by Kant the character of the immediacy which is involved in the critical philosophy. The repudiation of sensationalism, if it is to mean anything at all, must mean that a different conception of immediacy has come into play. One of the chief merits, indeed, of the "Critique of Pure Reason" is that it is a *reductio ad absurdum* of its own premises. The question which forms its starting-point is how thought can assert its authority over that which is immediately and independently "given." The conclusion at which Kant arrives is that thought can claim authority because there is no such immediate "given" as the argument presupposed. Instead of such immediacy, we have an immediacy of a totally different kind. If we turn to the situations in which the distinction between datum and meaning is present as an experienced fact, we find that the distinction occurs whenever there is a question for which an answer is sought. The "immediate" or the "given" in such cases is that part of the situation which is subjected to scrutiny; the meaning is that which is tentative or hypothetical or "present-as-absent." The distinction is transitory and exists for the sake of a purpose or end; it is indicative of the fact that the situation in which it occurs is in process of reconstruction. Which element in the situation is to function as datum is determined by the end to be attained. The point is that datum and meaning determine each other; they are derivatives which, when held in abstraction from each other, give us sense and thought in the sense of historical dualism.

This interpretation of immediacy, moreover, necessarily pre-determines the conception of "reality" and "truth." Having escaped the incubus of the transcendental, we are enabled to say that the facts with which we become acquainted, so far from being appearances of a more ultimate "reality," are just what they are found to be and nothing else. Any experience, such as the recollection of last week's events, the reflection upon the characteristics of a geological epoch, or the visual perception, clear or confused, of physical objects, is just so much fact, and is hence a datum in any philosophy which has a proper understanding of its own aims and limitations. The question what it "really" is can not properly be asked, save with reference to its "truth" or serviceableness in the guidance of expectation or other behavior. The "real," in short, is whatever we find; it is a domain which tolerates no hierarchy or privileged class. The "true," on the other hand, is that which leads or guides in the way that it promises to do, and hence it is subject to a test or criterion which the true idea itself determines or points out.

A consistent interpretation of immediacy, then, compels us to discard the conventional distinction between "appearance" and "reality." According to the present contention, the fallacy of transcendentalism lies in the fact that sense data are first detached from their context by abstraction, and then reunited with it through the agency of transcendental factors. When sense data are thus detached, the "being" or "reality" of the facts with which we deal becomes a legitimate problem, since we are compelled to regard them as a combination of the non-temporal or transcendental with the temporal or particular. This combination makes our starting-point hopelessly opaque, as Bradley has shown in pitiless detail. But if, on the other hand, we give to immediacy a purely functional interpretation, we escape the opposition between experience and a finished reality which inheres in the idealistic position, in spite of its rôle as the self-appointed nemesis of dualism. This functional interpretation construes the distinction between datum and meaning in terms of a change taking place in things, a change which has as its goal the guidance or control of adjustment. This procedure furnishes us with an entirely different starting-point. It means that all experiences are equally real, though not all are equally true or serviceable. That is to say, the "real" is not a question if we regard knowing as a change which occurs in things for the furtherance of certain ends, but becomes a problem only in so far as we oppose experience and its object, the latter being considered as a finished real passively waiting to be "known."

It was indicated previously that Kant is at no particular pains to develop the implications of this new immediacy to which his argu-



ment leads. The very argument which logically compels the inference to a new immediacy apparently shuts off the light. Between the premises and the conclusion lies the machinery of the Kantian transcendentalism; and neither Kant nor his successors seems to have realized adequately that the rejection of abstract sense impressions carries with it the rejection of the transcendental elements with which they are correlated. This retention of the transcendental elements compels both sense and thought to lead a double life. In so far as the conclusion of the Kantian deduction is emphasized, they are simply derivatives, their status and nature being determined by the function which they fulfil. But in so far as the bias of transcendentalism prevails, they are original constituents or ingredients of the situation from which functional sense and thought proceed by derivation. In other words, objective idealism shelters two fundamental and correlative ambiguities. It treats immediacy both in the sense of historical empiricism and in the sense of present-day functionalism; and it confuses thought as a function in the reorganization of a situation with thought as a transcendental or "constitutive" element. Hence it results that the duality of sense and meaning is often regarded as a "discrepancy," for which there is no remedy within the bounds of human experience. The thought of an object, instead of being treated simply as the "presence-in-absence" which is the indispensable correlate of the "presence" of sense material, is "a 'what' which so far as it is a mere idea clearly *is not*, and if it also *were*, could not be called ideal. For ideality lies in the disjoining of quality from being." Meaning is "a content which has been made loose from its own immediate existence and is used in divorce from that first unity."<sup>8</sup> Here we have once more the separation of "immediacy" from thought, and so the relation of the two forthwith presents a formidable problem. The two can not be wholly disjoined, as the Kantian conclusion attests; hence the puzzling fact that "the essential nature of the finite is that everywhere as it presents itself its character should slide beyond the limits of its existence."<sup>9</sup>

It seems clear that this ambiguity in "immediacy," with its correlative ambiguity in "thought," is essential to the standpoint of objective idealism. If immediacy were consistently treated as absolute, the outcome would not be transcendentalism but sensationalism. Or if immediacy were consistently treated as relative, then again the outcome would not be transcendentalism but some form of functionalism. But, directly or indirectly, the two meanings of immediacy are used in alternation. Bosanquet, for example, states that "it

<sup>8</sup> Bradley, "Appearance and Reality," p. 163.

<sup>9</sup> *Ibid.*, p. 164.

<sup>10</sup> *Ibid.*, p. 166.



makes no essential difference whether the ideas whose content is pronounced to be an attribute of reality appear to fall within what is given in perception or not. We shall find hereafter that it is vain to attempt to lay down boundaries between the given and its extension. The moment we try to do this we are on the wrong track."<sup>10</sup> In other words, the distinction between the given and its extension can at best be only a relative and fluctuating distinction, depending upon the character of the given situation. To all intents and purposes, however, a hard-and-fast boundary line is drawn on the second page preceding the passage just quoted; and as might be expected, the line is run in accordance with the landmarks set up by the Kantian transcendentalism. "The ideas used in judging are not particular existences but general significations or objective references. No mere mental occurrences as such, no series or combination of particular images, can by any possibility be a judgment." The given and its extension apparently tend to fall apart and hence to necessitate a resort to the transcendental in order to unite them again. Thus the following quotation excludes ideas or meanings from presentations, on the ground that the idea is simply a "habit or tendency": "If therefore we are asked to display it [the idea] as an image, as something fixed in a permanent outline, however pale or meager, we can not do so. It is not an abstract image, but a concrete habit or tendency. It can only be displayed in the judgment, that is, in a concrete case of reference to reality. Apart from this it is a mere abstraction of analysis, a tendency to operate in a certain way upon certain psychical presentations. Psychically speaking, it is when realized in judgment a process more or less systematic, extending through time and dealing with momentary presentations as its material. In other words, we may describe it as a selective rule, shown by its workings, but not consciously before the mind."<sup>11</sup>

A similar confusion is present, as I venture to think, in an exceptionally subtle and interesting form, in Royce's "World and the Individual." The world as fact, we are told, must be subordinated to the world as idea. When we study the idea, we find that it includes an internal meaning and an external meaning, the latter being "that attempted correspondence with outer facts which many accounts of our ideas regard as their primary, inexplicable, and ultimate character."<sup>12</sup> There is, however, no purely external criterion of truth; hence it is futile to "stand apart from the internal meaning, from the conscious inner purpose embodied in a given idea, and still attempt to estimate whether or no that idea corresponds with its

<sup>10</sup> "Logic," Vol. I., p. 77.

<sup>11</sup> "Essentials of Logic," p. 78.

<sup>12</sup> Vol. I., p. 26.

object."<sup>13</sup> The experienced inner meaning determines its own task, its own special form of "correspondence." Hence we can define the external meaning as that experience which fulfils the internal meaning. "The fulfilment of the internal meaning of the present idea would leave no other object defined by this idea as an object yet to be sought."<sup>14</sup>

This subordination of the world as fact to the world as idea has the immense advantage that it eliminates the problem how we are to copy or "apprehend" an "external world." The world as fact, in Royce's treatment, corresponds to the position which holds sense and thought in separation from each other. Its criterion of truth is external, whereas from the standpoint of the world as idea, the criterion becomes internal. To say that the meaningful experience determines its own form of correspondence is to deny the separation of sense and thought, or of "experience" and "object." The distinction between the two becomes functional and relative, in the sense previously indicated. It does not occur save where there is a problem to be solved, a task to be performed, a purpose to be accomplished. "A color, when merely seen, is in so far, for consciousness, no idea. A brute noise, merely heard, is no idea. But a melody, when sung, a picture, when in its wholeness actively appreciated, or the inner memory of your friend now in your mind, is an idea. For each of these latter states means something to you at the instant when you get it present to consciousness."<sup>15</sup>

Up to this point the position under consideration is to all appearances in entire agreement with that of functionalism. How meanings can determine their own reference ceases to be a problem when meanings are interpreted as the "presence-in-absence" of their objects. This agreement ends, however, when our human experience, in the hands of its idealistic inquisitor, signifies its willingness to be damned for the glory of the absolute. The immediacy which presupposes the object gives place to the immediacy which is divorced from its object. Our attention is first of all called to the fact that "our direct experience gives us only the passing data and the fragmentary ideas of the moment." This direct experience is compared with "the range of valid possible experience," which "is viewed by me as infinitely more extended than my actual human experience."<sup>16</sup> A valid possible experience, when known as such, is the experience of a fact which is present as absent. But according to Royce this validity is ambiguous. It covers both the validity which is tested

<sup>13</sup> Vol. I., p. 308.

<sup>14</sup> Vol. I., p. 339.

<sup>15</sup> Vol. I., p. 24.

<sup>16</sup> Vol. I., p. 259.



and that which is not. That is, validity is a name both for the experience in which the valid idea finds fulfilment and for the experience in which a fact is presented simply as absent.<sup>17</sup> Considered simply as a matter of terminology, this might be allowed to pass, but the context shows that something further is intended. Only the direct or fulfilling experience, we find, can give us the definiteness which characterizes true being. Until the fulfilling experience supervenes, we have, so far forth, bare validity, mere universality. Hence the question: "What is a valid or a determinately possible experience at the moment when it is supposed to be merely possible?"<sup>18</sup>

To this question the appropriate answer is that it makes an assumption which is both incompatible with Royce's starting-point and untrue to fact. The import of the functional interpretation of immediacy is precisely that datum and meaning can not be separated from each other. It is hardly good logic to begin by making the meaning or "possibility" organic to the given experience, and then to detach it in order to condemn it as "bare validity" or "mere universality." Such a procedure implies the very opposition between sense and thought which constitutes the point of departure for Kant. This separation serves only to justify the appeal to a transcendental, which thereupon becomes at once the sole abiding place for all individual fact, since the latter necessarily remains for us "the object of love and of hope, of desire and of will, of faith and of work, but never of present finding."<sup>19</sup>

It appears, then, that despite the originality of Royce's treatment, his procedure, from the angle of the present criticism, is essentially the same as that of his predecessors, save that he both starts and finishes with the functional point of view. The immediate and the mediate are held apart just long enough to justify the introduction of the transcendental, in order to heal the breach which has thus been created. We have the same alternation between types of immediacy, the same triumphant ushering-in of the transcendental, and, finally, the same bland denial that any separation between the immediate and the mediate was ever made or intended.

A proper reconsideration, then, of the concept of immediacy will show that the "higher standpoint" which Kant enabled us to reach is not that of objective idealism but of functionalism. The former owes its being and peculiar character to the very presuppositions which Kant is supposed to have destroyed once for all. When these presuppositions are set aside in fact and not merely in appearance, we rid ourselves of a troublesome element of vacillation and

<sup>17</sup> Cf., especially, Vol. I., pp. 259-261.

<sup>18</sup> Vol. I., p. 260.

<sup>19</sup> Vol. I., p. 297.



mystery; and the problems which the absolute is invoked to explain find a solvent in our human experience.

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### WHAT KIND OF REALISM?

IN a previous paper in this JOURNAL,<sup>1</sup> I attempted to summarize the arguments against "natural" realism—that doctrine which purports to crystallize the view of the "natural" man, that the very data of his visual and tactile experience are identical with, *i. e.*, go to make up, the "things" in the midst of which he lives and moves. According to that view, the "green" that my experience includes when I look at a tree exists at the tree-point in the world-order, and is not a copy or an effect of what there exists. That is to say, "natural" realism ignores the representative nature of perception, ignores the distinction between the stimulus of perception, the source from which (in the case of sight) ether-waves radiate, and the datum existing in experience after those waves have hit the eye, ignores, to say no more, the time-difference between the stimulus-fact and the experienced-fact.

Obvious as this representative nature of perception is, the temptation to "epistemological monism" is so great that it is a satisfaction to read, in one of Professor Dewey's recent papers,<sup>2</sup> that "it is easily demonstrable that there is a numerical duplicity between the astronomical star and the visible light," that "the astronomical star is a real object . . . the visible light is another real object." Generalized, this is to say that there is a numerical duplicity (but not necessarily a difference in substance, as, physical *vs.* mental) between stimulus-fact and sensation-fact. With these words, as with much in Professor Dewey's characteristically brilliant paper, I find myself in joyous sympathy. Surely we can all agree that the qualia which exist in a man's experience, and which are to him, as he looks, a given star or tree, are not the same existences as the "astronomical star" or the botanical tree. Without asserting what the star and tree of physical science are or are not, at least this "visible light," this visible greenness, are numerically different existences, existing later in time, and largely dependent for their nature upon the characteristics of the perceiver's sense-organs and brain.

Our thanks then to Professor Dewey! But there are certain other statements of his that seem to me questionable and so may serve

<sup>1</sup> Vol. VIII., page 365.

<sup>2</sup> This JOURNAL, Vol. VIII., page 395.

as texts for the inquiry that I suggested at the close of my previous paper and propose here to outline. He tells us that "contemporary realists have frequently and clearly expounded the physical explanation of such cases as have been cited"—the converging railway tracks, the star, pressing the eyeball, etc.—and is frankly vexed with the idealists for not accepting this explanation.<sup>3</sup> Now, personally, I am not an idealist. But if, as one would judge from the columns of this JOURNAL, the idealist is the under dog nowadays, let us be sure to do him full justice! It seems to me, for one, that he has a simple and consistent account to give of these cases, and therefore, even when an adequate realistic account is offered him, need not necessarily bite at the bait; and, moreover, that the accounts which the neo-realists have been offering him of such cases are for the most part so far from adequate that he is thoroughly justified in considering them still as cases that make for his view. Surely, if he is careful in his phraseology (but the realist must remember that in this matter the idealist is at a disadvantage, the practical language of every day being hopelessly realistic, and the expression of the facts in consistently idealistic language a clumsy and confusing matter) he does not commit the fallacy which Professor Dewey ascribes to him. He does not begin, for instance, with a single realistic object, and then, on pushing the eyeball, decide that "there ain't no such animal." He simply finds that on a realistic basis such an experience is difficult to explain, whereas it is very simply statable on an idealistic basis, as: when a single-object experience is followed by a pushing-the-eyeball experience, there is thereupon a double-object experience. Of course some idealists, especially the earlier ones, have put their arguments in ways that justly provoke criticism. But the underlying meaning of these arguments remains a sharp challenge to realism.

The point is, that all these cases can easily be described in terms of actual and potential sensations, while a description in terms of objects leads to grave difficulties. Suppose, for example, the realist is looking at a tree. The idealist would have said that he was having a tree-experience; but the realist says that this tree-that-he-sees is a physical tree, outside of him. He then shakes his eyeball. The tree-that-he-sees moves. But is it conceivable that a physical tree outside of him moves when he shakes his eyeball? So long as that green datum was still it was easy to think of it as a physical tree "out there." When it moves, it is no longer easy so to think of it. No wonder the idealist loves such cases! Especially since early realism was of this "natural" type. But now, if the realist retracts his naïve belief, and admits, with Professor Dewey and the present

<sup>3</sup> *Ibid.*, page 395.



writer and probably most contemporary realists, that the tree-datum-that-exists-within-his-experience (the moving-tree-datum—let us call it *existence B*) is an effect of but not identical with the tree-from-which-ether-waves-radiate (*existence A*), this difficulty is solved, but another arises. The coast is by no means yet clear for the realist. "Frequent and clear" explanations of the situation may exist in contemporary realistic writing, but where, oh, where are they to be found! The crux of the difficulty is this: *where* in the world of the realist does *B* exist? Must we not admit that unless the realist can give a thoroughgoing answer to this question, the idealist still has rather the better of the argument?

That there is a satisfactory answer to this question, and that a complete realistic explanation of the situation in perception is possible, I do not doubt. Several attempts at answering it have been made, but they are not free from objections and have generally been rejected by realists. It seems actually to be the case that the average realist refuses to recognize the need of explanation. When he has declared that perception is a "perfectly natural event," and has shown that a camera likewise produces an image which is an effect and representative of an outer object, he seems to think he has solved the problem. But the fact is, he has not touched it. There are more existences to account for in the perception case than in the camera case. The organism is indeed like a camera. There is produced in the brain through the eyes a physical perception-event (call it *existence C*) which varies concomitantly with the object looked at, and may therefore be called not only an effect, but in some sense a representative of that object—the more legitimately, as it actually serves as a clue for the guiding of the organism in its dealings with it. But does the realist think that this brain-event, *C*, is the green-moving-datum, *B*? If not, where does this latter existence, the surest of all existences, have its habitation? Where are we to put it in our physical scheme? If we have no place for it, how can we think we have given a clear explanation of the facts of perception?

We are not allowed to say that it exists in the mind. The very idea that we have minds seems to be repugnant to the neo-realist. And indeed, if such a statement were made as an explanation of the difficulty, it would be but a verbal one. Calling the fact *B* mental, solves no problem. We have still to ask how it is related to the other existences, *A* and *C*. Here is a well-known physical chain of events, from *A*, through ether-waves, eyes, and nerve-waves, to *C*, and then out again into some muscular reaction. But nowhere in this chain of events do we find *B*. The physical order seems complete and self-sufficing without it. There is no room for it. Instinctively we identify *B* with *A*. It is the tree, what we see of the



tree. But if my previous article holds, if Professor Dewey's statement holds, that "there is a numerical duplicity between the astronomical star and the visible light," between, in this case, the botanical tree and the visible green-moving fact (for the only difference between the two cases is that the time-difference between *A* and *B* is more striking in the former case), that refuge is definitely barred out. *B* exists at a later moment than *A*. *A* may have been annihilated in the meanwhile and may not be existing when *B* exists. *B* does exist simultaneously (or at least nearly simultaneously) with *C*; that is all that we seem to know about the relation of *B* to the *A-C* chain of events, except that *B*, like *C*, seems to be, in some sort, a representative of *A*, since it is the sign in our experience of our dealings with *A*. Are we to be left then with our *B*'s simply hanging on to our *C*'s, without any real footing in the world, with a time of existence but no place? If we call them mental, we have the well-known "psychophysical parallelism" between our *B*'s and *C*'s. This is certainly a mysterious relation; mental *B*'s clinging like barnacles at certain spots in the physical universe, but not really *being* there. If we call them physical, we have an equally mysterious physico-physical parallelism, a second set of physical realities existing at the moment of our *C*'s, but still with no place found for them. Truly, they are adrift in the deep!

One reason for not calling our *B*'s mental lies perhaps in the dualistic implications of that word. The neo-realist is convinced (one wonders if it be not sometimes an *a priori* conviction rather than a humble generalization from experience!) that there are not two substances, mind and matter. Therefore we must call everything "physical"; or, at least, "natural"—"mental" being thus made equivalent to "supernatural"! Professor Dewey likewise waxes satirical over the habit of calling such *B*'s as the visible convergence of railway tracks, or the visible light of a star, mental. "Is a photograph, then, to be conceived as a psychical somewhat?" But in the case of a camera (apart from perception by an observer) there is no *B*; there is only a chain of events loosely similar to the *A-C* chain of object-to-brain events. There is but one event at the moment when the photograph is taken, not two; a certain molecular change in the plate, corresponding to *C*, the molecular change in the brain, or to an earlier event in the *A-C* chain, the molecular change in the eye. There is no datum-within-experience, no *B*, existing at that moment, as there is in the case of perception. There is no mysterious parallelism, no problem, nothing that there is any temptation to call mental.

Personally, I disbelieve in the dualistic theory, and should be

'*Ibid.*, page 393.

quite willing to give up the word "mental" altogether. But I can not see why it should be such a red rag to a realist. Let us agree that any dualistic implications are illegitimate in advance of the establishment of a dualistic theory, and let us use the word in a merely denotative sense, to include our *B*'s, and such other facts as dreams, wishes, pleasure, sorrow, and the like, for which there is likewise no known place available in the physical world. We shall still find the word a useful generic term for these numerous, important, and indisputably real facts. It is, at any rate, the commonly accepted name for these facts. No doubt, the natural man looks upon these same *B*'s as the actual things among which he moves, *i. e.*, as if they were the *A*'s which cause them, and at such times he calls them not mental, but physical. But as soon as you show him the impossibility of that "natural" realism, he hastens to call his perception-datum mental, the green-moving-datum, *e. g.*, a mental image of the really outer tree. It may still be that this fact, *B*, belongs to the same world as *A* and *C*, that it is as "natural" an event as the photographic image of a scene or the echo of a sound. Nevertheless, why disdain the common name for it? I hear a partial repetition of a sound. Why jump to the conclusion that it is an echo? The only answer is, that is what we *call* it. Why jump to the conclusion that these particular events we have specified are "mental"? The only answer is, again, that such is the common generic name for them.

It is presumably true that "the seen light is an event" "standing in a process continuous with the star." Though, as to that, if it can not be located anywhere in particular, and if it has no discoverable relations of energy with any part of the physical chain of events proceeding from the star, it is difficult to see how knowledge can have "supervened" that it does stand in such a continuous process. And, moreover, even granting that it is a link in the process somewhere, is it safe to assert that "since the seen light is an event within a continuous process, there is no point of view from which its 'reality' contrasts with that of the star"?<sup>5</sup> Certainly the reason why the writer has, at times, spoken of the "real" star, contrasting that existence with the "perception of the star," has had nothing to do with any denial of the place of the latter in a continuous process. The "real" star is the star that astronomy describes, the star that is moving at so many miles a second through space. The "real" tree is the tree the botanist describes, the tree that we point to and walk round. These existences, the *A*'s, have their definite and well-known place in the world order. The *B*'s, the data of our experience, are none the less real, but they are less really the star and the tree; they are effects in our consciousness (or on our organisms, if you choose,

<sup>5</sup> *Ibid.*, page 395.



and are prepared to show *where* in the organism), representative to us of star and tree, but distinct existences. The visible light, the *B* of which the "real" star is the *A*, figures to us as the star when our attention is upon that visual experience. But *it* is not flying through space at so many miles a second; *it* is not composed of billions of whirling atoms, etc., etc. So, not to speak of the ambiguous status of these *B*'s in the world, there is as much reason for speaking of the *A*'s as the "real" things as there would be in discriminating between the "real" landscape and the picture of the landscape on a camera-plate. The latter is real enough, but it is not the real *landscape*.

We have then our *A*'s, the "real things," and we have our *C*'s, the brain-perception-events which are effects and in some sense representatives of them, and our *B*'s, the data of conscious perception, which exist synchronously (or at least nearly so) with our *C*'s. According to what we proceed to do with our *B*'s will be our type of realism. The "natural" realist identifies them, *per impossibile*, with the *A*'s. The atomistic realist crams them all into one monad or arch-atom which is located somewhere, but no one can say where, in the brain. The dualistic realist asserts that they get into the causal chain in the midst of the *C*'s, but gives them no place in the three-dimensioned world; they somehow get their fingers in the brain-pie without really being there. Another type of realist puts them frankly in the brain, in between or hanging on to the *C*'s. One variety of this type of theory is that of Professor Montague, which puts the *B*'s wherever we speak of "latent energy" in the brain. And finally, though not of course exhausting all contemporary theories, the panpsychic realist (who has a better name for him?) identifies the *B*'s with the *C*'s, asserts that if we knew enough about what we call brain events we should discover that they really are conscious events.

This last theory is that of the present writer. Space forbids its defense at this time. But the object of this paper will have been attained if it sets any one thinking of the problem a little more sharply than before; if it helps any one to realize that there is a problem here. If we are to be realists, as we seem determined to be, let us think our realism through. Let us not think that by calling perception a "natural" or a "physical" process we have solved the very real and difficult problem of perception, or have won the right to jeer at idealists for clinging to their account of the matter.

DURANT DRAKE.



## DISCUSSION

## EXPLICIT PRIMITIVES: A REPLY TO MRS. FRANKLIN

I WISH to offer a rather belated reply to Mrs. C. L. Franklin's article on "The Foundations of Philosophy: Explicit Primitives."<sup>1</sup> I am aware of the danger of crossing words with Mrs. Franklin in the supposedly special field of symbolic logic, but I am nevertheless moved to suggest, in response to her demand for explicit primitives, that a primitive is an illusion and an explicit primitive a contradiction in terms.

Briefly, my position would be that when a term has been made explicit, it is then a party to a comparison and is thus involved in a relation to another term. Since each term now depends upon the other for its definition, neither can claim priority, much less primitiveness. The locomotive may precede the train and pull the train, but if there is no train to pull there is no locomotive. At least, in that case, the locomotive would call for a new definition in terms of its relation to some other things. But if there were no other things, the locomotive would have no character whatever. And therefore I say that the very notion of a primitive is an illusion.

This is logical commonplace. So much so, however, that I am at a loss to account for the idea of a logical primitive, or even of a logical prior, except as a confusion between a logical relation and a certain familiar mechanical relation, which our logic has inherited from Aristotle and which owes its continued support to its plausibility for unthinking common sense. Mrs. Franklin suggests the point in the "*Foundations of Philosophy*." Now, as we all know, a house must rest upon a foundation, and when the foundation is removed the house falls; that is to say, the foundation is a prior condition to the superstructure. But to assume that knowledge must be thus "founded" is to imitate those of the ancients who affirmed the impossibility of the antipodes. For our human structures, indeed, the ultimately universal foundation is the earth. The earth is therefore a universal ultimate, or "primitive." But a primitive in knowledge marks only the point where knowledge ends. To make it a "foundation" of knowledge is then to found knowledge upon ignorance.

Mrs. Franklin appeals for authority to the logic of mathematics. Now, according to tradition at least, mathematical method consists in laying down a primitive—an axiom or postulate, or what not, which by definition is made an explicit primitive—and then in de-

<sup>1</sup> This JOURNAL, Vol. VIII., page 708.

riving its consequences; and when the primitive is laid down, the consequences are supposed to be not yet in sight. Otherwise there would be danger of a "circle." But we know that the manuscript of a mathematical work is usually completed before the first pages go to press; hence, the mathematician knows whither his primitives are to lead if the reader does not. The comparison will seem irrelevant, but I can not avoid saying that the usual process of mathematical deduction reminds me of nothing so much as the magician who appears before his audience in a tightly fitting dress-suit and then from a roll of tape held between his thumb and forefinger extracts, among a number of other things, two jars of goldfish and a live goose. One may test the justice of the comparison by observing the operation whereby even so critical a mind as Poincaré<sup>2</sup> derives a whole number-system from such ostensibly innocent primitives as  $x + a$  and  $x + 1$  (the latter of which consists in adding a *number 1* to a *number x*). To the uninitiated it would seem that, while the magician mystifies only his audience, the mathematician mystifies also himself.

In the mechanical world, as conceived by common sense, the foundation supports the superstructure, but the superstructure adds no strength to the foundation. In the world of knowledge, I should say, the first principles are just as much supported by the derivations as the latter by the former. Take a mathematical axiom and ask what it means; it means just as much as may be derived from it, and no more. How far is it true? It is true just as far as it yields a coherent system of consequences. That is to say, in a system of *thought* no feature is necessarily prior to any other. Priority is here a matter only of convenience of derivation, as determined by the point of view to which the argument appeals; or it may be a matter only of the paging of the book. Because, however, a book must have a page-order, and a discourse a beginning and end in time, it does not follow that there must be an order of precedence in the ideas. Again, take a witness supposed to be absolutely truthful, so that the truth of what he is to testify will only *depend upon* his veracity; make this supposition as absolute as you please, you can never make it so absolute that his veracity will be unaffected by the nature of the testimony which he is to give. It is just as absurd to speak of a science as being, in Mrs. Franklin's phrase, "at the beginning of things." Where is the beginning of things? If you locate it in the principles of physics, or of mechanics, or even of pure mathematics, I may reply that these "fundamental" principles depend for their final justification just as much upon their working out in

<sup>2</sup> "Science and Hypothesis," Chapter I.



biology, or upon what we decide about the freedom of the will, as conversely.

Mrs. Franklin points out that a failure to make your primitives explicit is apt to result in a "circle in definition." But for my own part, although I stand for "straight thinking," and although I should be at a loss to invent a circular system of logic as a substitute for the rectilinear system of Aristotle, I find it difficult to see that the circle is not a better figure for thinking than the straight line. At least I should say that the test of a finally transparent idea is the ability to argue from *b* to *a* as readily as from *a* to *b*. To say that circular thinking leaves you just where you were seems to me not quite true—this seems to refer to circular walking. In the first chapter of "Pendennis" I find the Major reading his mail. "But," you say, "who is the Major? Let us first define our terms." "Well, the Major is Arthur's uncle." "But who is Arthur?" "Why, he is the Major's nephew." This seems very inane, and yet I beg you to note that we are not as free to define the Major in any way we please as we were before, and the question remains whether the paucity of the result is not due solely to the smallness of the circle. Can we deny that the whole course of the novel, by virtue of which alone we are enabled to say quite definitely who, after all, the Major was, is anything more than an extension of just this circular process? And can we then point to any absolute difference, especially to any "abstractly logical" difference, between the plot of a novel and a mathematical system, or a really organized natural science? Mrs. Franklin cites, as an illustration of the vice, Clerk-Maxwell's definitions of matter as "that which may have energy communicated to it," and of energy as "that which passes from matter to matter." But it is hardly true that these definitions are altogether futile; at least one learns that energy is communicable and, by implication, that matter is not. Mrs. Franklin seems to hold that a definition must settle the character of its object once for all, that is, must be finally explicit, if it is to do any defining whatever. Hence it is, no doubt, that in a "sound epistemology" consciousness must be "the first great indefinable." But in a world where everything is involved in everything else, nothing can be defined once for all; and if consciousness is wholly indefinable, we shall be compelled, not to stop talking, perhaps, but at least to stop thinking about it.

As a matter of fact, however, any actual process of thinking is far more circular than rectilinear, and I am unable to see how it could or ought to be otherwise. Suppose that one is writing a book. On the rectilinear theory, the first chapter should be written first and once for all, and in writing this chapter the author ought himself to be as naïve with regard to the outcome in later chapters as he



may, perhaps, suppose his reader to be. In other words, the later parts of the argument or the story should only *depend upon* the earlier. But of course this is never the case. Indeed, it is notorious that the first chapter is the hardest of all to write, and probably the chapter which is to undergo the greatest amount of revision; first, because the ideas can never be so clear as they will be after writing the whole, and secondly, because of the extreme difficulty of making any part of an argument clear to a reader who is not more or less familiar with the whole. Hence, though we begin with the first, after each new chapter we return and revise and we never cease revising, here, there, and everywhere, until, to our view, there is a *mutual* harmony of all. And upon this mutuality of dependence the argument is finally "founded."

Mrs. Franklin tells us that "Nothing must be admitted . . . in the way of terms . . . or propositions . . . except upon rigid inspection and fully aboveboard." I find it difficult to characterize this advice appropriately and yet with proper courtesy. For it reminds me both of my own first philosophical paper and of the attitude of many of my students, especially of those who are trained in mathematics, just when they begin to think about philosophy at all. The trouble with philosophy is, they tell me, that it fails to define its terms. The answer is obvious. Popular opinion to the contrary, students of philosophy are, at least, not less conscientious in their thinking and their expressions than other persons. Nor are they less disposed to recognize the practical wisdom of "Be sure you are right and then go ahead." But had this been their fixed rule, there would be no philosophy. For, in the end, the trouble is not with the definitions but with the ideas. If we could make the ideas clear, we could easily define them; or, rather, the clarification and the definition would be one and the same thing. But the clarification of the ideas is just the beginning and the end of what philosophy has to do.

Having said something similar to this in a paper published several years ago, I was accused, rather, I was offered the right hand of fellowship and a certificate of good standing in the school of pragmatism. I have been unable to accept this generous, though embarrassing, invitation, but I will not say that the doctrine is not pragmatism, because I do not know what pragmatism would exclude. My belief is, however, that the foregoing criticism of the conception of primitives should belong in any view which makes coherence the test of truth.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Charles Darwin and the Origin of Species: Addresses, etc., in America and England in the Year of the Two Anniversaries.* EDWARD BAGNALL POULTON. London: Longmans, Green and Co. 1909.

The year 1909 was at once the centenary of the birth of Charles Darwin and the fiftieth anniversary of the appearance of his greatest work. The occasion was fittingly commemorated by scientific meetings and addresses in all parts of the world. Professor Poulton, as a leading exponent of the Darwinism of twenty years ago, and an active investigator of certain difficult evolutionary problems, was inevitably an important contributor to some of these programs, both in England and in America. Considering the circumstances of its preparation, it is no damaging criticism of the present volume to say that it contains little that is new, and little, indeed, that the author has not himself already told us.<sup>1</sup>

To the reviewer, the most interesting pages of the book relate to Darwin's personality and to his frame of mind in dealing with various scientific problems. In this regard, he will ever remain as an ideal to successive generations of younger investigators, whatever may become of his special hypotheses in the field of biology. A number of hitherto unpublished letters are introduced by Poulton, which serve to confirm the impressions which the world has already formed of the great naturalist's modesty and his boundless sympathy with the work of others.

In recent years, along with the growing mass of legitimate criticism of certain of Darwin's theories, there has sometimes been displayed a tendency to belittle his scientific attainments, even to the point of charging him with superficiality and a proneness to forming unwarranted conclusions. Indeed, it does not appear difficult to select passages from Darwin's writings in support of this view. Such charges reveal, however, an unfortunate lack of historical perspective. To begin with, Darwin was a *naturalist*—a thing almost impossible at the present time—and the data for his speculations were drawn from every branch of biology, as well as from geology, geography, and other sciences. This, indeed, was inevitable for the man who should establish the theory of organic evolution. To the present-day specialist, who must concentrate his activities upon a very few organisms viewed in a very few relations, the work of all the great pioneers in his science must, in a sense, seem superficial. The latter were forced to admit much evidence provisionally, which the twentieth century experimentalist would very properly reject as inadequate. Thus alone could the broad outlines of the science be sketched. It is in no way to the discredit of these great pioneers that some of their outlines were later erased in the light of more exact knowledge.

Poulton is at considerable pains to refute that much hackneyed bit of moralizing over the blighting effect of a scientific career upon the esthetic faculties. As is well known, Darwin's own autobiography affords a much-

<sup>1</sup>"Essays on Evolution, 1889-1907," reviewed in this JOURNAL, Vol. VI., page 185.



quoted text in support of this thesis. But Poulton dwells upon the wretched health endured by Darwin throughout nearly the whole of his active life, and points out that this concentration upon his scientific pursuits was, in his case, a condition essential to the accomplishment of his work. Darwin's experience—so often held up to us as a dreadful warning—thus seems to afford no evidence for the mutual exclusiveness of scientific and esthetic development in the same mind. The author cites his own wide acquaintance with scientific men in support of the contrary view, and it is likely that most readers will draw similar evidence from their own experience.

Much of the volume at hand is devoted to Poulton's own speculations in explanation of the colors of certain butterflies and an elaboration of the theories of "mimicry," originally framed by H. W. Bates and Fritz Müller. From the standpoint of organic evolution, these cases undoubtedly raise some very difficult problems, and Darwin himself thought them worthy of considerable attention. To Poulton they become the central theme in his view of nature, and the various hypothetical types of "mimicry" and protective coloration—each designated with a rather unwieldy name—are discussed as fundamental realities, regardless of the very slender thread of experimental evidence on which they depend. It is true that he concedes the "paramount need for experimental research and field observations . . . [which] should be undertaken on the largest possible scale" (p. 191). But for him, the case seems to be pretty conclusively settled without recourse to such experiments, and he later qualifies his demand for investigations of this sort with the assurance that "while human performance is of the deepest interest for the solution of mysteries innumerable, of more profound significance still, for the comprehension of the method of evolution, is the vast performance of nature herself" (p. 201). True, but it is that very performance itself the method of which is here in question. Nature is not yet such an open book that he who runs may read.

Poulton believes that "the Müllerian hypothesis appears to explain a series of remarkable relationships which remain coincidences under any other hypothesis" (p. 191). On the other hand, Punnett<sup>2</sup> has pointed out the existence of some evidence that, in one alleged case of "mimicry" at least, the coloration of two "mimetic" forms, belonging to a single species (supposed to be modeled after two distinct species, belonging to a different family) behave to one another as Mendelian alternatives. "On this view," according to Punnett, "the genera *Amauris* and *Euralia* [the "mimicked" and the "mimicking," respectively] contain a similar set of pattern factors, and the conditions, whatever they may be, which bring about mutation in the former lead to the production of a similar mutation in the latter." The fact that among domesticated rodents (rats, mice, guinea-pigs and rabbits) not only the same colors, but some of the same general types of color *pattern*, have arisen independently argues for the possibility of such an origin of "mimetic" resemblances in insects. This view, like its alternative, is at present wholly unproven, and a final

<sup>2</sup>"Mendelism," pp. 144 et seq.



decision of the question is probably still remote, but the Mendelian-Mutation explanation certainly relieves us of the truly terrible strain imposed upon our imagination by the classical "mimicry" hypotheses, as elaborated by such writers as Poulton.

As regards Mendel's Law, our author has plainly shifted his point of view somewhat since the time when he could refer airily to "Mendel's interesting discovery." He now thinks that known facts "are enough to stamp Mendel's discovery as among the greatest in the history of the biological sciences" (p. 278).

Poulton appears to feel keenly the contemptuous attitude of many of his younger colleagues toward the real founders of the theory of evolution, and deprecates severely the gregarious tendency of the great body of minor workers, who rush to fall in line with every procession which seems to be marching behind a promising leader. I can not refrain from quoting some of the strong words with which our writer seeks to relieve his feelings: "In these later years the multitudes seem, for the moment at least, to recognize a prophet in every reed shaken with the wind. It would be interesting to know the number of forgotten works, of works soon to be forgotten, of works dead before they were born, which have been proclaimed as 'the most important contribution to biological thought since the appearance of the *Origin of Species*.' I would that the multitudes were not mere followers of the fleeting fashions of a day, but that they were right in their intuitions: I would that Newtons and Darwins might arise in every generation. I can not admit that the inability to see them on every side is merely the natural consequence of a cynical and pessimistic spirit" (p. ix). Which one of us has not been in just that mood?

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*Schopenhauer's Criticism of Kant's Theory of Experience.* RADOSLAV A. TSANOFF. New York: Longmans, Green, & Co. *Cornell Studies in Philosophy*, No. 9. 1911. Pp. xiii + 77.

The purpose of the author of this monograph was "to analyze closely" the three phases of Kant's philosophy which Schopenhauer regarded as most significant, viz., that philosophy must (1) "recognize the purely phenomenal character of knowledge," (2) "realize the primacy of will over reason," and (3) "be kept distinct from theology," and then "to inquire into their consistency and philosophical significance, as well as to determine as nearly as possible their historical value as interpretations of Kant's philosophy." The "inherent incompatibility of the two systems" receives the emphasis rather than "the psychological aspects of the problem." A brief discussion of the literature in English, German, and French shows the need for such a work as this.

The four chapters which constitute the body of the book have the following titles, indicating the nature and scope of the discussion: (1) "The Nature and Genesis of Experience: Perception and Conception"; (2) "The Principles of Organization in Experience: The Deduction and

the Real Significance of the Categories"; (3) "The Scope and Limits of Experience: Transcendental Dialectic"; (4) "Experience and Reality: The Will as the Thing-in-itself." The author's method in treating these topics is to present Schopenhauer's exposition and criticism of Kant with reference to each, and then by quotations from Kant and his own interpretation to show wherein Schopenhauer erred, or was correct. Not infrequently, too, he introduces pertinent material from writers who were contemporary or nearly so, and also makes comparison with recent views which are the outgrowth of the Kantian movement or had a comparatively independent development. The author's own position seems to be "instrumental" and "organic."

Schopenhauer accepted the doctrine of Kant's "Esthetic" "unreservedly," and then made a "clear-cut distinction between *Verstand* and *Vernunft*." His distinction, however, is not the same as that Kant himself made, and this initial error vitally affected Schopenhauer's further treatment of Kant. It is true that Kant was not always precise in the use of these terms, but his "confusion is the confusion of depths not yet clarified," while "Schopenhauer's lucidity manifests epistemological shallowness."

"The radical fault which Schopenhauer finds with Kant's deduction of the categories," Tsanoff maintains, "is its abstract character. . . . This protest against Kant's abstract formalism is most just; but his own theory of judgment incapacitates him at the very start from indicating the fundamental error." Tsanoff states Schopenhauer's "theory of judgment" briefly, compares it with Kant's, and then takes up the categories in their respective groups. In each case, Schopenhauer's interpretation and criticism are given, together with what seems to the author to be the proper evaluation. The "schematism" is treated briefly, since Schopenhauer was inclined to dispense with it altogether, along with all the categories save "causality," upon the basis of his own distinction between perception and conception. Tsanoff, too, thinks the "schematism" unnecessary, but for a different reason. "A correct diagnosis," he says, "would locate the trouble in Kant's departing from his own ideal of the organization of experience from within and attempting to explain that organization, as it were, *ab extra*. The deduction of the categories, therefore, should be reinterpreted in the true Kantian spirit, its abstract formalism eliminated, and the immanent character of the organizing principles of experience clearly emphasized. This would obviate the difficulty by showing the irrelevancy and the needlessness of any schemata."

In connection with the "Dialectic," Tsanoff admits that Schopenhauer was right in maintaining "that Kant's use of the term 'idea' is essentially different from Plato's," but he also points out that Schopenhauer's use of the same term was not "true to the spirit of the original Platonic doctrine." The origin of these "ideas," as Kant used the term, is indicated, and each is discussed in turn, both from Schopenhauer's and from Kant's point of view. Incidentally, Schopenhauer's interpretation of matter is presented, and the propriety of identifying it with substance denied. Without dwelling upon the discussion of the mechanical and



teleological categories involved in the antinomies, Tsanoff's conclusions may be stated. "In spite of essential differences in standpoint," he says, "which have been at least sufficiently accentuated in the above comparison of their treatment of the teleological principles, Kant and Schopenhauer make the same fundamental mistake. Neither fully realized the essentially instrumental character of all categories. Each and every category considers experience, all of it, from its own point of view. Experience is one, and the categories are its categories, the points of view from which it may profitably be regarded; no one of them can exhaust its meaning, nor can any truly significant category find its own meaning exhausted in any one part of experience, for the simple reason that experience is organic and is therefore not divisible into discrete parts." This, also, clearly indicates the author's point of view.

In his interpretation of the "thing-in-itself" as will, Schopenhauer made what he regarded "as his own great contribution to philosophical thought." At this point, "Schopenhauer's philosophy joins on to the Kantian, or rather springs from it as from its parent stem." "By 'will' Schopenhauer does not mean 'merely willing and purposing in the narrowest sense, but also all striving, wishing, shunning, hoping, fearing, loving, hating, in short, all that directly constitutes our weal and woe, desire and aversion.'" Now while this "will" may have qualities absolutely unknowable to us, "it is by no means an unknown quantity, . . . but is fully and immediately comprehended, and is so familiar to us that we know and understand what will is far better than anything else." Consequently, although "on Kant's basis" Schopenhauer thinks that "metaphysics is impossible," he feels that he himself has ground for "asserting the possibility of an immanent metaphysics, a metaphysics of experience." This view Tsanoff rejects, because Schopenhauer "seeks his ultimate reality . . . in some one sort of experience. . . . The spirit of Schopenhauer's theory of reality" is that "to learn metaphysics, we must unlearn science."

In conclusion, Tsanoff suggests "that Schopenhauer is *not* the true successor of Kant. Instead of being a neo-rationalist, as Kant, on the whole, remained, he is fundamentally an irrationalist, so far as his attitude towards ultimate reality is concerned. He also insists that the "world as idea and world as will are at least as incompatible philosophically as Kant's two worlds of phenomena and noumena. Schopenhauer failed to profit by his own criticism of Kant. . . . Experience must be interpreted in terms of its own self-organizing totality. In the solution of its problems we can ignore no one of its elements or aspects. Cognition is an essential aspect of experience, but cognition is not all; this is the lesson to be learned from the 'Critique of Pure Reason,' and especially from the 'Dialectic.' The same is true of will. . . . Schopenhauer's philosophy . . . represents an endless conflict. . . . His every problem is stated in the form of a dilemma. . . . He never fully comprehended the immanent unity of experience. . . . This is the fundamental defect of his philosophical system, which makes him incapable of



grasping the real problems of Kant's philosophy, and of indicating a consistent method for their solution."

The work, as a whole, is a thorough, scholarly treatment of a particular problem, and is based upon an independent handling of the sources. It should prove very serviceable for an enlarged knowledge of Kant and of Schopenhauer.

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*La Nouvelle Psychologie Animale.* GEORGES BOHN. Paris: Alcan. 1911. Pp. ii + 200.

American students of animal behavior have come to look upon the work of Dr. Bohn with a certain suspicion. Yerkes' thought his earlier papers "not thoroughly satisfactory scientifically, for they continually suggest questions, doubts, and new problems," and Jennings, reviewing "*La Naissance de l'Intelligence*,"<sup>1</sup> finds that Bohn does not stand "the test as to accuracy and trustworthiness of his scientific results in difficult fields . . . and that such confusion, inaccuracy, and misstatement of fact are almost or quite sufficient to remove the book from the field of science." An American reviewer is likely, therefore, to approach this new work of Dr. Bohn, which is "the continuation and complement of '*La Naissance de l'Intelligence*,'" with misgivings. The pudding is hardly better than the anticipation for "*La Nouvelle Psychologie Animale*," though a brief and clear statement of the author's views bears evidence of bias in favor of a theory of animal behavior which to say the least is but little more than a good working hypothesis. This presupposition in favor of a physicochemical explanation determines not only the author's criticism of other men's results, but it also seems to determine the presentation of the facts.

Relying upon "the more recent studies which have been conceived in a really scientific spirit" (Preface), the author divides his treatise into three parts: "the activities of the inferior animals, the instincts of the arthropods, and the psychical activity of the vertebrates."

The phenomena of behavior in lower animals may be grouped under three principal orders: "tropisms, *sensibilité différentielle*, and *mémoire cellulaire*." The first is the well-known local action theory of Loeb; the second is the tendency of the animal "to pause, to recoil, and to turn through one hundred and eighty degrees when the environment changes abruptly"; the third group of phenomena are the evidences of associative memory.

In defense of his physicochemical theory, for which he does not cease to praise Loeb, the author attacks Jennings's theory of trial and error and insists that "the movements of infusoria are subject to very simple laws." But when did Jennings deny the explainability of infusorian behavior? If I have understood his work, Jennings's protest has not been against a physicochemical interpretation of animal behavior, but against the ten-

<sup>1</sup> *Journal of Comparative Neurology and Psychology*, No. 66, p. 233, 1906.

<sup>2</sup> *American Naturalist*, No. 43, p. 619, 1909.

dency to find that explanation without considering all the facts. He has insisted on seeing the behavior in detail rather than in bulk and has refused to accept, as final, explanations which are based only on mass observations. This, Bohn does not seem adequately to have realized. There seems a strange tendency on the part of certain writers, the moment you deny the sweeping character of their physical formula, to think that you have abdicated causal explanation altogether and are lost in the realms of mystery.

In the second part, Dr. Bohn reviews the so-called instincts of arthropods, giving in turn the detailed studies on "feigning death," "return to the nest," "food-seeking," "mimicry," and "the social instincts." Instinct he regards as a blanket term covering a "complex of activities, some simple and some complex, some inherited and some acquired in the course of individual life, all, it being understood, resulting from the diverse qualities of living matter, inherited more or less independently, the one of the other" (p. 125). Most experimental students will agree with this tendency to replace the term instinct by more analytic concepts.

"Among vertebrates psychical activity acquires, owing to the brain, a very great complexity" (p. 129). Hence, ten pages devoted to brain anatomy, and then follow fifty-six pages treating in turn the method of Pawlow, the labyrinth method, the puzzle-box method, the method of imitation, and the method of training as these have been applied in the study of vertebrates. Thirty-one of the fifty-six pages are given to Pawlow, evidently because his method lends itself to the support of the author's theory. "The method of Pawlow is infinitely precious for psychology, because, *after a sure fashion, it leads to the discovery of the laws of associative memory among superior animals*" (p. 158, italics mine). Much less important is the labyrinth method because it gives "only synthetic results . . . laws do not appear from the experiments which have been made" (p. 175). However, in the hands of Yerkes and Watson, the author admits this method has given results of some importance. Of still less importance are the remaining methods, since the data that they give are "uncertain and contradictory" (p. 188), and the author contents himself with giving the results with little comment. The method of discrimination recently elaborated in such detail for the study of vision by Yerkes and Watson receives only passing notice.

In the reviewer's opinion the order of merit for the several methods of animal investigation is hardly the one likely to be adopted in the further work of men who are really interested in getting all the facts. If we must have a physicochemical explanation of animal behavior to-morrow it will be well to let labyrinths, puzzle-boxes, imitation, and all go, and theorize ourselves into a state of complacent belief. If we would understand animal behavior it were better to realize that in the case of the vertebrates we have hardly gotten as yet the first inklings of how to attack our problems, that all the methods are yet on trial, and that what we need is refinement of experimental procedure in connection with every method yet proposed. The methods which Bohn rejects have yielded results as important as any which have come from the Pawlow Laboratory, and if it



were not for preoccupation with certain theories he would probably have seen them in a truer light.

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## JOURNALS AND NEW BOOKS

MIND. October, 1911. *Mr. Bradley's Doctrine of Knowledge* (pp. 457-488): E. H. STRANGE. — Mr. Bradley's thesis that it is in "feeling" that one directly encounters reality is called in question. The contention that feeling is the original mode of consciousness is challenged, and for the existence of Mr. Bradley's "whole of feeling" there is no evidence. The criticism contains a refutation of Mr. Bradley's doctrine of perception as sentient experience, and judgment as divorce of content from existence. *Mind and Body* (pp. 489-506): J. S. MACKENZIE. — The difficulties arising out of the relations obtaining between conscious states and body center around the doctrine of the conservation of energy, and it is suggested how these difficulties may be met without abandoning the doctrine. Mind is distinguished from conscious states and the problem of its persistence is considered. *Aristophanes and Socrates* (pp. 507-520): R. PETRIE. — An examination of Professor Taylor's volume of essays, entitled "Varia Socratica," relating to Aristophanes's "Clouds" in its bearing upon the historic Socrates. Professor Taylor dismisses the evidence of Xenophon maintaining Socrates's interest in physics and mathematics. This view is opposed, and it is maintained that the caricature in the "Clouds" does not contradict the account given by Xenophon. *Negation Considered as a Statement of Difference in Identity* (pp. 521-529): AUGUSTA KLEIN. — The thesis is that "Negative predication should be interpreted as asserting neither a Difference in Difference (Miss Jones) nor an Identity in Difference (Hegel), but a *Difference in Identity*." *Discussions: Self-consciousness and Consciousness of Self* (pp. 530-537): G. W. CUNNINGHAM. "Self-consciousness is completely realized only in the experience of the absolute." *Truth as Value and the Value of Truth* (pp. 538-539): J. E. RUSSELL. *A Point in Formal Logic* (pp. 540-541): T. B. MULLER. *Critical Notes*: E. G. Haldane and G. R. T. Ross (translated by), *The Philosophical Works of Descartes*, Vol. I.: A. E. TAYLOR. Natorp, *Die logischen Grundlagen der exakten Wissenschaften*: P. E. B. JOURDAIN. A. D. Lindsay, *The Philosophy of Bergson*: H. W. CARR. A. W. Moore, *Pragmatism and its Critics*: D. L. MURRAY. William James, *Some Problems of Philosophy*: F. C. S. SCHILLER. *New Books. Philosophical Periodicals. Notes.*

REVUE PHILOSOPHIQUE. October, 1911. *Le pragmatisme et le réalisme du sens commun* (pp. 337-367): L. DAURIAC. — Pragmatism has its source in an attitude of mind, perhaps as old as mind itself, but it is the honor of William James to have detached it from rationalism, of which it now appears to be the absolute antithesis. *Les tendances actuelles de la psychologie anglaise* (pp. 368-399): G. CANTECOR. — The



progress and transformations of English psychology in the last thirty years as it appears in the work of Sully, Ward, and Stout. *Méthode de la science pédagogique* (pp. 400-421): L. CELLÉRIER. — The method includes a definition of education drawn from experience, the determination of pedagogical fact, observations of the facts of education, and the study and classification of elementary pedagogical facts. *Analyses et comptes rendus*: G. Dromard, *Essai sur la sincérité*: FR. PAULHAN. G. Simmel, *Soziologie*: DR. S. JANKELEVITCH. E. Durkheim et ses collaborateurs, *L'année sociologique*, t. XI: G. BELOT. A. Dupont, *Gabriel Tarde et l'économie politique*: G. JOUSSET. J. Delvaille, *Essai sur l'histoire de l'idée de progrès*: L. ARRÉAT. *Revue des périodiques étrangers*.

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## NOTES AND NEWS

THE New York Branch of the American Psychological Association met, in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences, at the American Museum of Natural History on Monday evening, February 26. The following papers were read: "The Heredity of Mental Traits," Dr. H. H. Goddard; "The Medical Course in Psychology," Dr. F. Lyman Wells; "Rate Norms of Mental Development," Professor J. E. W. Wallin; "Auditory and Visual Memory," Mr. A. E. Chrislip; "The Influence of Narcotics on Physical and Mental Traits of Offspring," Mr. J. E. Hickman.

Dr. J. E. Wallace Wallin, who has been engaged in the psychoclinical study of various types of mental defectives for over two years, and who has recently worked in the clinics at Johns Hopkins Hospital, has accepted a call from the University of Pittsburgh to organize a department of clinical psychology in the School of Education and also to lecture in the summer school on clinical psychology, the education of exceptional children, and experimental education.

UNDER the auspices of the College of Sciences, a series of lectures has been recently given at the University of Illinois by Professor W. Johann-

sen, of the University of Copenhagen. The subjects treated were "The Primitive Conception of Heredity," "The Principle of Pure Lines," "Mendelism," "Complications and Exceptions," "Mutations," "Continuity or Discontinuity."

DR. ELEANOR H. ROWLAND, professor of philosophy at Mt. Holyoke College, has resigned to become dean of women and professor of philosophy at Reed College, Portland, Oregon. Her place at Mt. Holyoke, for the current semester, will be taken by Dr. Kate Gordon.

ON account of illness, Professor Josiah Royce, of Harvard University, has been compelled to give up the course of Bross lectures on "The Source of Religious Insight" and has been given leave of absence for the present academic year.

THE Sarah Berliner research fellowship for women has been awarded to Miss Marie Gertrude Rand, of Brooklyn, a doctor of philosophy of Bryn Mawr College, for her work on the psychology of vision.

DR. W. A. HEIDEL, professor of Greek at Wesleyan University, gave an address on "The Beginnings of Science" before the Middletown, Connecticut, Scientific Association on February 13.

A NEW department in psychology and education is to be established at Swarthmore College next year, of which Dr. Bird T. Baldwin, now professor of education at the University of Texas, will be in charge.

PROFESSOR CASPER RENÉ GREGORY, of the University of Leipzig, is giving a series of lectures at the University of Illinois on "The Development of Science in Germany." Dr. Gregory is the first American-born professor to receive appointment in a German university. He holds the chair of theology at Leipzig.

ELIZABETH KEMPER ADAMS, of Smith College, has been promoted from associate professor of philosophy and education to professor of education.

DR. B. W. VAN RIPER, of Nebraska Wesleyan University, has been elected assistant professor of philosophy in Boston University.

DR. S. P. HAYES, professor of psychology in Mt. Holyoke College, has been granted a leave of absence for the second semester. He will spend the time abroad, chiefly at Cambridge University.

THE Ichabod Spencer foundation lectures are being given at Union College by Professor Hugo Münsterberg, of Harvard University. His subject is "Applied Psychology."

THE death is announced, at seventy-one years of age, of Dr. Otto Liebmann, formerly professor of philosophy in the University of Jena.

DR. JOHN J. TIGERT has been appointed professor of philosophy in the University of Kentucky.

DR. WENDELL T. BUSH, associate in philosophy in Columbia University, has been appointed associate professor of philosophy.

PROFESSOR JOHN JOLY, F.R.S., has been appointed Huxley lecturer at Birmingham University for the current session.

# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE RELATIONS OF INDIVIDUAL AND EXPERIMENTAL PSYCHOLOGY TO SOCIAL PSYCHOLOGY.<sup>1</sup>

PROFESSOR JUDD gives a brief statement<sup>2</sup> of the way in which the problem of modern experimental psychology arose. The account is interesting as showing how, as an integral part of the development of a certain form of control, a new "science" may be differentiated. From the standpoint of psychology the origin of the experimental method was wholly external and for a long time unrecognized. From the demands of another sort of experimentation, and in the service of another science, experimental psychology came into being. Some consideration of this fact may prove of general interest.

The specific problem to be solved in this case was that of determining the amount of error that was involved in certain astronomical investigations, the inquiry arising from a suspicion that the hand was slow in recording what the eye perceived. Theoretical exactness required that the hand should record, without loss of time, what the eye noted through the telescope. For the purpose of correcting the error, the astronomers, as a mere matter of developing their own technique, and with no interest whatever in the problems of psychology as such, measured the eye-hand reaction-time of the one who made the record. In this process, as an interesting fact (of erudition), it was noted that the reaction times of different persons, the "personal equation," varied.

Now, had these men been interested in this direction, this great discovery might have become immediately the basis of definite psychological method; but for these astronomers it was only an incident, more or less regrettable, of the day's work; and the psychologists of the time seem not to have been able to make any constructive use of the facts or to fit them into their subject in any way. To the extent

<sup>1</sup> For standpoint and material suggestions I am indebted to Professor George H. Mead, of the University of Chicago.

<sup>2</sup> "Psychology," p. 333.



that it was noticed, or used, at all, it was taken over in a wholly external sort of fashion, without analyzing the problem farther; it seems to have been a kind of scientific toy, making some curious, rather than useful, additions to knowledge. They used the method as if they, too, had turned astronomers, and as if the whole interest of science was in providing data for the correction of "personal equations." Little attention was paid, in these earlier days, to introspective reintegration of these facts: the results of their observations and measurements were averaged in a purely external way, and consequently added little to the actual knowledge of psychological processes.

But little by little the technique and method of experimental psychology have been developed; and the field of operation has been changed from that of external observation and mechanical measurement to that of charting out the whole field of the psychical life. But it would seem that a certain exhilaration has carried the experimental psychologist too far, until we have to-day a very great overworking of the method, though it is likely that this misuse will have its value in helping to more completely determine the field and problem of psychology. Let us carry the argument through to the end.

Modern science, growing out of individual experience, found the forms of psychological measurement and analysis helpful in providing a check upon its own developing technique. In its turn, psychology, as it became conscious of itself and began to call itself a "science," considered individual experience its proper field of investigation, like the other and older sciences: it assumed that it could render very much needed service by investigating in accurate ways the whole round of mental phenomena; and its method was to be a generalization of the incidental work of the astronomers. It was thought that, since the method gave valuable results in the case of its use by these devotees of the oldest of the sciences, there could be no doubt of its legitimacy and adequacy as a method in the newest. But it is to be noted that the astronomers used this psychological method for the purpose of perfecting their own operations, not for the sake of the psychological information: that is to say, psychology was, for them, not a "science" in itself, but an important element in the technique of their science; and it would seem that the generalization of their method would give us, not a new "science" of psychology, but a very important new sort of check upon the general technique of science. The mere generalization of the work of the astronomers does not give us a "psychology" with scientific standing; what we get is an *ancilla scientiarum*, and of the physical sciences at that.

For the method was, and is, essentially an abstraction. As used

by the astronomers it was perfectly concrete: an effort to more adequately control a specific social experience. But when it was generalized into "experimental psychology," it became abstract, as any mere technique must inevitably become. To be sure, psychology has strenuously denied this, insisting upon its right to scientific standing. But when closely pressed to define its actual field of knowledge, it has never been quite able to answer conclusively. For example, if we take such an avowedly functional treatment as that of Angell we find a rather questionable statement of the field of knowledge. He says<sup>3</sup> "psychology is commonly defined as the science of consciousness." But when we turn to page 65 of the same book we find consciousness spoken of as the instrument of development "of those fixed and intelligent modes of reaction which we call habits." Now, any particular scientific fact, or law, or system, is, for the time, a "fixed and intelligent mode of reaction," that is, it is a social or individual habit. Accepted sciences are the intellectual and practical habits, or fixed modes of controlling experience, in any period. Consciousness, from this point of view, becomes the tool of scientific development; and psychology as the "science of consciousness" becomes the method of developing the technique of general science: and this brings us back to our astronomers.

Most modern writers take the point of view of Angell. Some have tried to get an undisputed subject-matter for psychology by a process of eliminating all the physical and physiological materials of experience, hoping to have something left. But from the standpoint of the sciences which deal with the materials thus eliminated, there is to be nothing left: all is to be finally stated in terms of the iron law of cause and effect. And just as the astronomers had no interest in their results, save as a part of their own technique, so modern science seems to care little for any "science of consciousness" that offers itself as an abstract and independent field of knowledge. That which has been called prejudice on the part of the older sciences is probably just the healthy and justifiable feeling that psychology as it has been known in the past can have no other standing in any real organization of the sciences than it had with those first astronomers: it is a part of the technique of science, not a science in itself.

The experience of the individual has been the rich field of development of modern science; and this has been but the more clearly seen as psychology has developed and the technique of control of experience in the various sciences has been refined. But this development of physical science, with psychology as its general technique, has been accomplished at the sad cost of leaving psychology itself objectless, homeless, like the "man without a country." But, not

<sup>3</sup> "Psychology," p. 1.



only has this development, as thus stated, left psychology as a tool, rather than a science; it has also made it, practically, utterly useless in the field of the social sciences. It is not without reason that the sociologist has denied the right of the psychologist to any voice in the determination of the method of sociology. It is not to be wondered at that the educationist has been skeptical of the value of psychology as an aid to the teacher. Psychology as it has been known, that is, experimental psychology developed on the basis of the work of the astronomers, has had very little to do with that stage of experience that precedes the differentiation of the physical object. It has been called into existence for the purpose of a clearer definition of the physical object (note the astronomers again), and it has had, in the past, no method of dealing with the social object save in terms of the abstractions which it employs in the case of physical objects: that is to say, it must reduce the social object to physical and abstract terms,—just what the sociologist and educator have not wanted.

And here we come to the point made earlier in this discussion, that in the development of psychology there has been a miscarriage of method, or else that which appears so has been but a necessary stage in the development of the subject. Psychology itself has passed through several stages in the whole course of its development. Before the beginnings of the experimental point of view, the object of knowledge in such psychology as there was, was psyche,—the soul,—disconnected, or only temporarily connected, with the world of observable phenomena. Then there came, after the development of the experimental method, a very orgy of "scientific" progress, in which the ideal was that along with the world of physical objects the world of psychical existences was to be reduced to a statement in terms of motion; the soul was ruled out of existence. To this end was psychology, handmaid of the physical sciences but ambitious for a realm of her own, thus sadly reduced.

But of course the whole range of the social sciences, the whole wide content of morality and religion, and the sober common sense of the physical sciences themselves, all rebel against the extreme implications of this doctrine, because it leaves out of account the whole world of the ends of life, the vitally human side of life: it loses sight of the *ends* of life, and focuses all its attentions upon the "means" of life; but without ends the very need of "means" passes, and the so-called "means" pass also. The effort to state the self, or to sum up psychology, in terms of molecular motion had, of course, to run its full length and determine its own impossibility. *But* if this attempt is impossible, it is so because there is something in the field attacked by psychology that can not be stated in terms of molecular



motion; that is to say, there is something which the physical sciences can not take care of. And, in recent years, in the general development of the theory of evolution and its wider generalization and application to more inclusive ranges of materials, the mind, or the self, has slowly become recognized as the center of organization of experience: this mind, or self, is now no longer a mere left-over, but a real and positive factor in the world, a fact in the full sense of the term, and as such as much an object of knowledge as the molecule or the atom. Psychology thus becomes the science of the self,—the self as a reality for experience; it has accordingly a subject-matter of its own, and a right to be called a science in at least as real a sense as is physics the science of the molecule, or chemistry the science of the atom.

But from this point of view psychology can no longer be defined as the science of consciousness; it is now the science of the self, and the self is larger than consciousness; it is at least as large as the whole of experience. This means that psychology must give up its old position (a position that is still maintained in the laboratory attitude) as the handmaid of the physical sciences, and become the science of the self in all the relations of that self, its genesis, its development, and all its rich differentiations of activity, interest, and content. But at this point we see that psychology has thus become social psychology. And there can be no escape from the fact that if psychology is to be a real science in its own right it must become social; for in no other way can it find a real object of knowledge that shall be its own.

When, however, psychology has thus become social, it can absorb all the materials that the laboratories can bring it, and give to those materials a meaning they have never had before. These results, worked out in psychological laboratories, are just like the results of the work of the astronomers, materials that have, or may have, a social value in perfecting the general technique by which science is ultimately to control all experience in the interest of a nobler human living. And from this point of view psychology becomes of use also in the social sciences; becomes, indeed, as the science of the self, the basis of the technique of the social sciences; and no follower of any of the special social sciences can ever again, save by confessing his ignorance, deny to the new psychology, as science of the self, the right to some voice in determining the materials, methods, and results of that special science. Social psychology will be heard from in every one of the special social sciences in the near future.

Essentially, then, psychology has left the narrow field of service to the physical sciences (though its service is still at their disposal), and, finding a proper object for a special science in the "self," is

about to find a scientific standing it has never had before. At the same time it is going to find a wider range of usefulness as the technique of all the sciences: the social sciences, first of all, and the physical sciences, also, as these arise in the constant definition of the conditions of life. Psychology has become social psychology, the science of the whole concrete activity of the social self, or selves; social psychology is the science of the active self, the self at work, organizing and reorganizing its world of experience. The impulses to organization of experience are native, and, in man at least, they are social in their nature. The act needs no motive, and it presupposes a social situation. In the carrying out of the act, in so far as there is a conflict or a hindrance to be overcome, there will appear a need of a definition of means to the end in view, a more complete determination and organization of the conditions under which the act may go on. This was the situation in which the astronomers had found themselves many times; they had made many corrections and readjustments, of which the one here described was for them only another. In many of their adjustments ordinary reflection upon the situation had been sufficient. But in this particular case mere reflection was not sufficient; the telescope did not solve the problem: there was still a difficulty that had to be more adequately understood and controlled; and a further refinement of method was necessary. Thus were undertaken the first experiments along psychological lines; only, they were not experiments in psychology at all; they were efforts to secure practical efficiency and a greater social utility in a science that cared nothing for psychology; and for the astronomers they never became psychological materials. That is to say, the astronomers never saw the full implications of their incidental experiments.

Now, it is only a social psychology that can see the whole act in all its bearings. The social psychologist sees the astronomer himself engaged in the more comprehensive problem of a careful determination of the character of the universal human environment: he is a social worker, in spite of his protests, and his need of a more complete determination of the "personal equation" is ultimately a social need. Social psychology can also see why this method was finally seized upon and hypothetically erected into a science in its own right. And it is possible to see how, and why, psychology had to come back from its intellectualistic, individualistic, and purely mechanical vagaries to the more human conception of the whole man living his whole life in a complete social world. Social psychology is undertaking to deal with a concrete social situation, the wholeness of an act in all its immediate richness of emotional and conative elements as well as its purely intellectual or "scientific" phases.



Within this whole concrete act lies the specific problem of determining the *means to the end*: this is true for the simplest act and for the most complex. So within the whole of social psychology lie the various problems of the experimental determination of the actual conditions of activity; but this experimental determination is but one phase of the whole act; and if this determination is to have any other than a purely erudite interest, the demand for it must rise out of a concrete situation, and the determined result must be such as can get back into concrete activity and be tested by more organic conditions than those of the laboratory.

The self develops through activity and emotional experiences which are organized into older experiences, as occasion demands, by the intellectual processes. Social psychology of the McDougall type is the science of the development of the self or selves; its unit of study is the concrete act, in all its organic richness. Within this concrete act lie the beginnings of all the sciences, social as well as physical, just as the beginnings of psychology lay within the concrete act of the astronomer. These germs of rudimentary sciences come to consciousness at the call of some specific need. Experimental psychology arose to meet the need of more exact methods of determination of an object in a particular physical science, but it might just as well have arisen in any other of the sciences: it came in to help physical science. It proved so helpful that some who became interested undertook to give it an independent scientific standing. But after thorough tests it has been found that that hypothesis is partially unfounded: psychology as a purely laboratory performance can have no real scientific standing, because it has no real object of knowledge. But the hypothesis was not utterly false; and the feeling that there was room for a real science of psychology was well founded, though its foundation is not in the laboratory. After these fifty years and more of experimentation and discussion, psychology is coming into its own, the actual object of a real science is emerging into consciousness, and social psychology, having as its object of knowledge the development of the concrete social self, is here to stay.

Under this larger conception, the work of the laboratory psychologist comes to have a value it never had or could have before: it has a social meaning; his work arises out of actual social situations, more or less immediate, and his results go back into social situations, more or less close by; if they do not, then he is losing his way among barren and profitless abstractions.

And under this conception psychology comes to have meaning, essential meaning, for all the social sciences, but especially for education and the work of the teacher. In the midst of the growing



modern world, with its demands for more democracy and at the same time more efficiency, the teacher is hard pressed. The whole modern world, but especially the school, needs a new insight into the concrete processes of the developing self. The laboratory can offer detached fragments of isolated cases; the older analytic psychology can offer some general suggestions on mental processes: these are good when they can be seen in their concrete setting in the actual course of the child's developing experience. But they are decidedly bad, as Münsterberg has shown, when they are taken as final statements of processes and blindly followed without thought as to the organic relationships they sustain to the rest of the developing experience of the victim. Social psychology is the modern attempt to reintegrate the experiences of the individual, to present that experience in concrete forms, with as much richness of detail as the analytical psychologist and the laboratory operator can furnish. For while the experimentalist is a good man to go to for data as to detailed operations, it is only as he leaves his laboratory to find his problems, and takes his results back into the social world, there to restate them concretely in the flow of living human experience, that he can truly be said to be a real psychologist.

The hope for the schools and for education generally, even the very hope for democracy itself, lies in making the teacher conscious of the processes of development as these are being restated in terms of social psychology. The teacher will have, must have, psychology of some kind; the only relief from the intolerable psychology which Münsterberg so rightly criticizes is found in the social psychology which can see the child as child, and also as mechanism; that is, as *end* of education and as *means* to education, at the same time. The educational psychology of the future must be a genuinely social psychology.

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## SOCIETIES

### TWENTIETH MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE twentieth annual meeting of the American Psychological Association, held in Washington, D. C., December 27, 28, 29, 1911, in affiliation with the Southern Society for Philosophy and Psychology, was of rather unusual interest. The fact that it was the twentieth meeting brought up reminiscences regarding the founding of the association and rather gratifying reflections on the growth

of psychological science in America. At the smoker given by Professors Franz and Reudiger at the New Fredonia Hotel on Thursday evening, following President Seashore's address, the company fell into a reminiscent mood and called on President Hall, Dr. Ladd, and Professors Cattell and Münsterberg for speeches as to the early history of psychology in America. This occasion and the luncheon given by Dr. Franz at the Government Hospital for the Insane on Thursday made up the social features of the meeting. The program contained several unusual features, including double sections, a large exhibit of apparatus, advanced abstracts of the papers read at the symposium on instinct and intelligence, and the conference on psychology and medical education. Special sessions were given over to mental tests, animal behavior, medical education, experimental psychology, general psychology, and educational psychology. Taking the program as a whole, it is fair to say that applied psychology bulked larger than any other topic, one third of the more than sixty papers being devoted to various subjects falling in this field, an evidence that the day of the consulting psychologist is about to come.

The symposium on instinct and intelligence opened the meeting, Mr. Marshall being the first speaker. He considered the activities of animals from two view-points, the subjective and the objective. Speaking from the latter point of view he divided the activities of animals into two groups, one characterizing the simplest animals and the other the complex animals. The first group of activities display: (1) evident biologic value; (2) directness; (3) immediacy; (4) "perfect very first time"; (5) non-modifiability; (6) innateness. The second group are not evidently of biologic value, are indirect, hesitant, highly modifiable, not evidently innate and not "perfect the very first time." But in complex animals there are certain activities of the first sort and these occurring in the midst of activities of the other sort may be called "instinct-actions." They may be regarded as due to the instinct actions of the cells and this cell instinct-action may be looked upon as the biologic unit. But these varied activities due to the compounding of instinct actions are what we call intelligent activities. Hence, we argue that intelligence is statable in terms of "instinct feelings," the psychic correspondents of instinct actions. If we could grasp the full psychic significance of an instinct-feeling, by slowing down the process, we should find in it all the essentials of intelligence; and if intelligent acts could be made immediate, they would appear objectively as "instinct-actions" and subjectively as "instinct-feelings."

Mr. Herrick held that the term instinct as popularly used is incapable of scientific definition. He would replace the terms instinct and intelligence by the terms innate action and individually



variable action, and maintained that these two types of action are separate biological functions, both of which are exhibited in some degree by all animals, and that they are individually variable. Under innate action, he would include the fundamental physiological properties, tropisms, taxes, reflexes, compound and chain reflexes, and the inherited elements of all higher behavior complexes. Under individually variable action he would include all non-heritable, acquired behavior from simple, physiological modifications resulting from practise at the lower extreme to learning by experience and the higher intelligent adaptations at the other extreme. A special mechanism has been differentiated for the higher forms of variable action, namely, the association centers of the brain.

Mr. Yerkes held that instinct and intelligence are two functional capacities or tendencies of the organism and that neither has developed from the other. Now the one and now the other predominates in the life of the organism or the species. No organism lacks either the instinct capacity or the intelligence capacity. Instinctive activities are practically serviceable on the occasion of their first appearance, strikingly perfect in important respects, predictable, heritable in definite form, and suggestive of experiences which the organism has not had. Intelligent activities, by contrast, are serviceable as the result of trial, practically unpredictable, not definitely heritable, and suggestive of experiences that the organism has had.

Mr. Judd emphasized the importance of defining intelligence in positive rather than negative terms. It is by intelligence that an organism becomes superior to its environment and capable of modifying its environment. It is the power of initiating activities from inner motives; and the intelligent individual, instead of reacting upon objects in a manner determined by their sequence in nature, is able to bring objects distant in time or space into close relation with each other. This bringing together of remote objects is the result of inner processes of comparison or association, which group of processes marks the highest stages of evolution.

The conference on psychology and medical education was opened by Dr. Franz, who spoke on the present status of psychology in medical education and practise. The recent favorable growth of psychology in connection with medical affairs was held to be due to the realization of the importance of psychiatry and to the success of non-medical healers. In most schools, the speaker thought, psychological matters are discussed in the courses in physiology, psychiatry, neurology, and medicine. Psychology was held to be of value to research in psychiatry and neurology, and also in pharmacological studies. To the physician psychology has its chief value in the consideration of mental diseases, in both diagnosis and treat-



ment. It is also of value to all physicians because they must depend upon mental processes for diagnosis and for the estimation of the effects of remedial agents. This subject, which is so important for all physicians, can not be picked up incidentally, but there must be given some special attention to it in the medical course.

Dr. Adolph Meyer spoke on the practical relation of psychology and psychiatry, holding that both fields are open to expansion. He spoke of a psychology that will cope with the problems of introspection and also with the other problems dealing with the biological, physiological, and even anatomical conditions of mental life. It is the psychologist alone who can deal with the great borderland that lies between the physiology of special organs and the behavior of personalities. Psychiatry is forced to deal with psychological material. It determines mental facts partly as symptoms of diseases back of the conditions and partly as biological reactions of the type of mental integration, which, like suggestion, once induced, play a more or less well defined dynamic rôle. The first task is to describe critically the plain events of abnormal reactions and conduct as experiments of nature for the conditions under which they occur, the subjective and objective characteristics which allow us to differentiate the reactions from one another, the events and results in the conduct and life of the person, the dynamic factors and their modifiability, the time and influences needed for a readjustment of a state of balance. With this rule of formal technique and logical arrangement of the inquiry, we are bound to get sound common ground for a psychiatry which aims merely at the identification of given conditions with accepted disease-processes, and also for a dynamic pathology which gives psychobiological data a dynamic position.

Dr. E. E. Southard contrasted the problems of teaching and research in the fields of psycho- and neuro-pathology. He insisted first on the unique value of the pathological method, not merely for the diagnostic and therapeutic purposes of medicine, but for biology as a whole and for the most vital of the biological sciences, psychology. He pointed out the perniciousness of psychophysical parallelism in the discussion of matters psychological because it inhibits the free interchange of structural and functional concepts and the passage to and fro of workers in the several sciences. He pointed out that psychology and physiology have more in common than either has with such structural sciences as anatomy and histology and that the main common element of both mental and cerebral processes is the time element as against the space element of the structural sciences. He conceived that the mind twist and brain spot hypotheses for the explanation of certain forms of mental dis-

ease are entirely consistent with each other, since from a different angle each is dealing with the same facts.

Dr. Watson gave the outline of a proposed course in psychology for medical students. The course might be given as an elective in the second or third year of the medical school and should occupy two laboratory periods per week and one lecture. The course would presuppose a thorough course in elementary psychology as a part of the student's premedical training and would deal with the objective material of psychology. Such topics as the following should be considered: visual and auditory sensation, thorough tests and application of the Binet-Simon system, work in mental and muscular fatigue, acquisition of skillful acts, learning plateaus, conflicts, stamping in and retention of wrong methods of response, association, memory and retention, association method of Jung, reaction time. The aim would be not only to supply information regarding these subjects, but also to give training in the objective study of psychological processes and to prepare the student for the work of the clinic and the study of hypnotism, multiple personalities, aphasia, etc.

Dr. Morton Prince doubted the value of the teaching of structural psychology to the medical student already almost submerged in the number of subjects he is called upon to master. He thought normal psychology should be to pathological psychology and psychotherapeutics what physiology is to pathological physiology and physiological therapeutics; but to attain this position, processes and mechanisms should be elucidated rather than structure. He insisted that the professional psychologist has not occupied himself sufficiently with this sort of research and consequently the applications of psychology lagged far behind other applied sciences. He advocated what he chose to call "a new psychology" for the medical student, the chief features of which he outlined as follows: the subconscious, hypnosis and allied conditions; suggestion and its phenomena; memory as a process; amnesia and its mechanisms; fixed ideas, conscious and subconscious; dissociation and synthesis of personality; emotions as dynamic forces; instincts as impulsive forces; sentiments as complexes of ideas and emotions; phenomena of conflicts, repression, resistance, inhibitions; mechanisms of thought; attitudes of mind; associative processes and reactions; habit processes; automatisms; mechanism of dreams; influence of mind on the body; fatigue.

This course Dr. Prince insisted would supplement the course suggested by Dr. Watson and should be taught in the premedical course.

In respect to this program Dr. Meyer thought that the college curriculum should not preempt the field of psychopathology, unless it has clinical material to work upon.

The discussion which followed the reading of the papers was



prompt and was engaged in by an equal number of physicians and psychologists. In general it centered about three topics: first, emphasis on the importance of psychology to the medical student; second, the kind of psychology that should be given; third, the time and place to be given to psychology in the medical and premedical program. The following quotations were significant of the whole discussion.

Dr. Jelliffe: "Let us picture to ourselves the medical student of the remote future. Diseases of the body will be prevented and there will be three functions for the medical practitioner; to deal with the preservation of the species, with senility and with mental aberration. There will be the obstetrician and pediatricist, the specialist in old age, and the psychotherapist. If the problems of mental activities are to occupy such a large share in the future, the subject of psychology should bulk large in the medical curriculum."

Professor Angier gave an outline of the course given to medical students at Yale and insisted that it would be "unwise for a man to go into medicine or into psychotherapeutics particularly and not be acquainted to some extent with normal psychology."

Dr. Hoch: "It is quite evident that the importance of mental factors, not only so far as psychiatry is concerned, but so far as all diseases are concerned, is being more and more appreciated. Physicians need much more training than at present, not only in psychiatry, but also in other branches, but the more marked need is along mental lines. We must not forget that common disorders that come to the physician and are looked upon as essentially physical would sometimes be much better treated from a mental point of view."

The speaker commended the course outlined by Dr. Watson, but doubted whether there would be sufficient time for it. He rather favored the course suggested by Dr. Prince.

Professor Haines emphasized the fact that "the psychology that the physician is coming to use is departing in no radical way from the psychology in which members of this association have been interested. We must not forget that at bottom psychology grows by the method of introspection. What the young medical student needs is to get the attitude of the psychologist. He needs to know that there is such a thing as a mental phenomenon."

Dr. Koder: "I believe that there should be greater attention paid to the subject of psychotherapy, and also to psychology of the normal mind; the psychologist should be introduced into the medical faculties to teach his subject as a part of the curriculum of the medical school. It seems to me at least the equal in importance of anatomy and physiology and a part of the time that should be given to psychology may well be carved out from the hours now devoted to the



subjects of anatomy, physiology, *materia medica*, and therapeutics. We devote forty hours to *materia medica*, and we all know that the practising physician uses only two or three dozen remedies and there is no need of overburdening the medical student with the almost useless knowledge of drugs which have little or no value."

Dr. Starr outlined the work that is given in the medical and pre-medical course at Columbia University and said: "If the subject of psychological therapeutics is increasing in importance—and we are appreciating it every day, and that students must be trained along that line—they must obtain a knowledge of physiological psychology which must then be supplemented by some knowledge of pathological psychology." The speaker then spoke of the great value which pathology had been to psychology and suggested further cooperation from both psychologist and physician in research and teaching.

Professor Angell: "I am very much more interested for the moment in the problem of psychology for the general practitioner than in that of the value of psychology for the medical specialist in psychiatry. . . . The rank and file of students are not becoming specialists in psychiatry. In the medical school in Chicago, as a result of my conferences with men of the medical faculty, I conclude that it is desirable that every medical student should have the equipment of an elementary and introductory course in general psychology. . . . I have in mind the aspect of psychology as a science of mental behavior, one dealing with the common affairs of everyday life. . . . A psychology of this functional and dynamic character can be taught without any elaborate terms and this kind of psychology certainly would give the student a point of view for the exploration of the human mind. I can not for a moment believe that the dissecting of the mind would make a physician a better general practitioner. What the physician needs is to consider the living dynamic individual, not the human being of the dissecting table, but the living being who has a developing mind."

Dr. Williams objected to Dr. Prince's course, insisting that "it was putting the cart before the horse," and declared that "some such course as Dr. Watson suggested was absolutely essential."

Professor Münsterberg thought, after listening to the discussion, that the best thing we can do is to teach medical students "a little philosophical foundation for their psychological conceptions."

The upshot of the conference was the appointment of a committee at the business meeting of the association, this committee to represent the association in conferences with similar committees, appointed by the American Medical Association or other medical associations, regarding further discussions of the relation of psychology to medical education. Professors W. D. Scott, E. E. Southard, and J. B. Watson were appointed to this committee.

In his address as president of the Southern Society, Dr. Franz held that it can not be concluded at the present time that the psychic localization is more specific than that mentality is connected with brain activity. We are unable to say that the activity of the cerebrum alone is the concomitant of mental processes. He reviewed the work of Gall, Broca, Flechsig, and the more recent histological studies of localized function. He denied the proof of the relation of the so-called sensory and perceptive areas and showed that there has been no sufficient explanation for the histological differences between the various motor areas. The disorders of speech can not be considered to be associated with definite parts of the brain and there are no facts which warrant a localization of definite mental states in the several layers of the cortex.

At the session on animal behavior three papers were presented on sensory discrimination in mammals. Mr. Johnson reported tests on auditory discrimination in dogs which tended to show that after eliminating all secondary criteria and with the operator removed from the room, the dogs were unable to choose between middle C and the E above, the stimulus being given by the Helmholtz method of "tandem-driven" forks equipped with Koenig resonators, giving practically pure tones. On the basis of these results criticism was offered of the work done by Kalischer and Rothmann and it was held that there was no certain evidence that in any of their experiments were the dogs reacting to tone at all.

Dr. Shepherd reported studies on the discrimination of articulate sounds by cats. The method was to speak a name to which the cat should make a positive response and get food. A cat seven months old learned the reaction in thirteen days and a three-year old cat learned the same reaction in twenty-five days.

Professor Yerkes criticized the experiments on the ground that there had not been sufficient caution to prevent the animals choosing by secondary criteria, unconscious movements of the operator, etc.

Professor Washburn, in reporting some experiments on color vision in the rabbit, gave as a criterion that an animal sees color rather than a gray, the animal's ability to discriminate between a color and any and all brightnesses whatsoever. In the course of experiments in which colored papers were used the rabbit showed some ability to select a door on account of the relative brightness of the paper pinned on it, but the experimenter concluded that the rabbit's hold on this principle, which involves a comparison of two papers, is very unstable. With red and a very dark gray (Hering number 46) four rabbits, which had learned to discriminate red from the lighter grays, failed to make any discrimination whatsoever and there was no evidence that rabbits see red as a color.



The following results regarding the modifiability of behavior in the earthworm were presented by Professor Yerkes: (1) the worms have not acquired the habit of turning directly to the open arm of the T-shaped glass labyrinth and thus escaping to a moist dark tube; (2) certain modifications have appeared during the daily series of trials; (3) there are indications of tracking; (4) the animals fatigue rapidly; five trials per day prove more satisfactory than ten, fifteen or twenty; (5) in so far as the worms learn to follow a direct path through the T, they do so apparently by the use of certain eutaneous sense data rather than by inner kinesthetic data; (6) the first trial each day invariably presents numerous mistakes; (7) there is some indication that the sandpaper becomes a "warning" against the salt which lies beyond it in the arm of the T.

Two experimental studies of the human learning process in the maze were reported. Mr. Boring used the Watson circular maze duplicated on a large scale and two observers who learned the maze made a numerical estimate of the processes involved in the learning, the two reports agreeing in 85 per cent. of the cases. Three phases were noted: the determination of direction after making the turns, guidance within the passage, and the location of the turns. Complete analysis of the first phase only was reported. This involved five factors: attitudinal, verbal, visual, kinesthetic, and automatic. Each of these followed a definite course throughout the learning process, varying somewhat with the ideational type of the learner. Attitudes were of importance in only the first two or three trials. The verbal factor reaches its height very early and the visual later. They both give place to kinesthesia, which, in turn, is resolved into a somatic automatism. The course of learning in this first phase falls into three periods. In the first, attitudes and verbal and visual imagery are advantageous, and the introduction of motor imagery is disadvantageous; in the second period, kinesthesia becomes favorable, while attitudes and verbal and visual imagery become unfavorable; in the third period, automatism predominates and learning is retarded by the introduction of any form of imagery.

Mr. Perrin reported similar work in which he had used two types of maze, a pencil maze and another through which the subject walked. In both cases the subject was blindfolded. The time and error curves were quite comparable with those based on the records of white rats in the maze. The introspection showed, however, so it was claimed, that the learning was essentially that of the human instead of the animal mind, inasmuch as there was evidence of conscious factors, attending, discriminating, judging, inferring, and reasoning. Ideational controls were built up through the play of the cognitive faculties. While the learning curves showed that



learning was by the trial and error method and that the human did not improve upon the time and error records of the rats, they do seem to have the advantage when the conditions are altered as in changing the maze. The human subjects make their adaptations more easily.

In his president's address Professor Seashore spoke on the measure of a singer. He set forth the possible measurements of sensory, motor, associative, and affective powers and argued that technical psychology may be so employed as to furnish qualitative and quantitative classified knowledge about a singer, which knowledge may serve immediate and direct practical purposes. This sort of applied psychology, the speaker thought, will lead to a keener and more penetrating insight into the nature and the conditions of both the individual and his art, and this will result in helpful guidance and a more vital appreciation and respect for the possibilities of the singer and his song. Using the case of the singer as an example, President Seashore went on to emphasize the importance of applied psychology, and in particular, the need for training up experts who will be able to fill the places of consulting psychologists in the various fields that are asking help from psychology.

Quite in the spirit of President Seashore's address the vocational bureau at Cincinnati is trying to be of help—in determining a scientific ground upon which to make recommendations for the employment of children. The work of this bureau, which was reported by Dr. Wooley, is still in the research stage and has planned a five-years' investigation of the children who leave the public schools at the age of fourteen years and a comparative study of other children who remain in school. A thousand children are to be studied in each case. The series of tests include sensation, motor ability, perception, learning power, the use of language, ingenuity. The immediate problem is to determine the value of the tests in use, with the hope that later such tests may be used as criteria of the general or special ability of such persons as come under the bureau's jurisdiction.

Five papers dealing with the learning process were presented. Dr. McGamble reported experiments which showed no correlation between the facility of learning and the tenacity of impression. When longer series of nonsense syllables are learned and relearned at the same rate of presentation, the fraction of the learning time saved in the relearning is greater if the presentation rate is neither very fast nor very slow. When the series are learned at different presentation rates, but relearned at the same rate, the fraction of the learning saved is greater for the series which were originally learned at the slow rate of presentation, unless the absolute learning time of the slow series is very small.

Mr. Lyon in reporting on the same general problem thought that those who learn quickly remember longest where the material used is logical or meaningful in character, but forget quickest where the material is such as involves the memorizing of motor associations, which is generally the case with digits, words, and nonsense syllables. Mr. Lyon agreed with Dr. McGamble that the difference in retentiveness between the fast learner and the slower learner is much less than is generally believed.

Mr. Henmon took issue with the oft-quoted results of Ebbinghaus that the number of repetitions increases at first with great rapidity as the amount to be learned increases and that the increase in repetitions is relatively greater than the increase in the length of the series. Systematic investigation, he held, fails to confirm the law. On the contrary, there is a relative decrease in the number of repetitions as the length of series increases, and an increase in retention after an interval of time. This result holds not only for practised, but also for unpractised, subjects and is most marked with sense material.

Professor Lough gave a partial report of extended studies in habit formation and called particular attention to the absence of plateaus, such as were found by Bryan and Harter some years ago. The complete report of these tests is soon to appear and will cover the study of such factors as practise, fatigue, distribution of repetition, diurnal efficiency, changing keys, sex, age, ability, and individual variation.

Dr. Rall presented some experimental evidence of the transfer of training in memory. As test material, lines from "Evangeline" and nonsense syllables were used. Training material included poetry and prose in English and foreign languages, irregular verbs, and vocabularies. Training period lasted four weeks and was for twenty minutes per day. Results showed wide variation, but in general there was gain in the test given at the end of the training period, amounting in all observers to 32.5 per cent. Control experiment on 28 untrained observers showed a gain of only 17.8 per cent. The results were held to show that there was a transfer of 21 per cent. in learning "Evangeline" and 36 per cent. in the nonsense syllables.

Why certain advertisements fail to force themselves upon our attention, and why certain others arouse our interest so that we read them clear through, is the problem that Mr. Strong has set himself to solve, and a preliminary statement of method was made under the title of the rôle of attention in advertising. The first problem of method indicates that the method of simultaneous presentation of many advertisements gives no valid results, while the successive pres-



entation of the same material gives surprisingly constant results from different subjects. One of the by-products of the investigation so far as completed was that there is no indication of the potency of either primacy or recency when more than ten advertisements are shown successively and then tested for attention-value and memorability by the recognition method; secondly, advertisements are as simple psychically as nonsense syllables, at least as far as attention and recognition enter. This latter fact, Mr. Strong held, was evidence that the simple physically was not the simple psychically, and that it is now time in experimental work to advance from the use of simple to the use of complex material, particularly in the study of esthetics.

Professor Warren challenged our entire system of elementary education in a review of Montessori's method of teaching reading and writing. The Casa dei Bambini, it was held, is an important modification of the kindergarten and is founded upon an accurate knowledge of the ability of children to do certain kinds of work at certain stages of development. In this system the training of touch and the kinesthetic senses are emphasized as important preludes to the teaching of writing, which in turn precedes the teaching of reading proper.

For some years, papers dealing with mental tests and the treatment of defectives have found a place on the general program. At the twentieth meeting a special session was set apart for this aspect of psychology under the title of mental tests. Dr. Fernald discussed a kinetic will test, the device for which was on exhibition in the adjoining apparatus display. The apparatus measures fatigue in terms of units of time. The subject stands on his toes on an indicator which registers the amount of failure to keep the heels clear from the plates. The fluctuation of the heels is registered on a dial before the subject's face and this acts as a stimulus to keep the effort going. The test was applied to 116 reformatory prisoners and to 12 manual-training school students. The disparity of lowest and highest scores is remarkable, *i. e.*,  $2\frac{1}{2}$  and  $52\frac{3}{4}$  minutes in the former group and 12 minutes and  $2\frac{1}{2}$  hours in the latter group, and the difference in the average and median for these two groups is 35 minutes, about twice the average of the reformatory group. No subject involuntarily rested his heels while still striving, but each decided to yield.

Dr. H. H. Goddard described an adaptation board and its use and also discussed the present status of the Binet tests. He reported tests on 400 feeble-minded children, 2,000 normal children, 56 delinquent girls, 100 juvenile court children, 100 children admitted to the Rahway reformatory, and on an entire private school in Penn-

sylvania. Further tests were reported on the insane, and the speaker concluded that "the tests go a long way toward giving us what we want, are accurate far beyond belief. While it is true that they need supplementing and improving, yet it is quite possible that this supplementing will have to be in the nature of a consideration of individual cases and special tests for children. It is a problem that may well occupy the attention of psychologists, but no one should attempt to criticize the tests until he has used them on some hundreds of children."

Dr. Wallin agreed that the Binet tests possess considerable value as an instrument for gauging mental station and classifying groups of mental defectives. He gave methods for testing the accuracy of the scale as follows: (a) Extensive surveys of normal children to ascertain if the age norms are correct; (b) annual tests of the same groups, to determine whether the amount of actual growth corresponds to the growth norms laid down in the scale; (c) the plotting of curves of efficiency or capacity for each age for the various traits tested in the scale.

At this same session Dr. Hollingworth presented a brief account of elaborate experiments on the influence of caffeine on mental and motor efficiency. Extensive accounts of these tests have since appeared in the January numbers of *The American Journal of Psychology*, *The Psychological Review*, *The Therapeutic Gazette*, and in the *Archives of Psychology*, *Columbia University Contributions to Psychology*.

The Cornell experiments on the difference between memory and imagination images, reported by Mrs. Perky<sup>1</sup> and generalized in Titchener's recent text-book, received pointed criticism in a paper by Dr. Martin, who, on the ground of experimental evidence, refused to accept the results in question except as having an individual character. The differences between the two kinds of images were not present in Dr. Martin's results, her experiments being made on students and professors at Bonn and Stanford universities.

Professor Washburn reported a new method of studying mediate association, which was defined in the following manner: a process *A* is followed in consciousness by an apparently unassociated process *C*; later it is found that the connection was made by the process *B*, formerly associated with both *A* and *C*, but not at this time appearing in consciousness. The method used was as follows: The observer was given a stimulus word and instructed to react with a wholly unassociated word. 662 experiments were performed and a number of typical mediate associations resulted. A full report of the experiments appears in the January number of the *American Journal of Psychology*.

<sup>1</sup> *American Journal of Psychology*, No. 21, p. 422.



Another paper from the Vassar Laboratory given by Miss Abbott dealt with the effect of adaptation on temperature discrimination. The method was to adapt the right and left hands to temperatures differing by five degrees, and then to test for slightly warmer temperatures. Such adaptation had more effect on the power of discrimination than adaptation to extreme temperatures.

Mr. G. R. Wells reported the results of studies on the relation of reaction time to the duration of auditory stimulus. Five lengths of stimuli were used, viz., 76, 306, 516, 766, and 1066. No characteristic difference was found in the reactions to these different stimuli.

Dr. Reudiger gave the results of a series of experiments made with the Bloch instrument to determine the ability of four subjects to localize 1 gram and 10 gram weights. The surfaces explored were on the forearm and the weights were applied to a vein and to surfaces where no vein was in evidence. Localization was just as accurate with one gram as with ten grams and it was even more accurate on a vein than on other parts of the skin. These facts, the speaker held, were contrary to the sensation-complex theory of space localization, and indicated that space perception on the skin was to be explained on the ground of the sensation-element theory.

An experimental study of self-projection, meaning thereby any explicit form of self-reference, was reported by Professor Richardson, the work being that of Professor Downey. Two chief forms were recognized, the visual and the kinesthetic. Different reagents saw themselves as actors in or spectators of a visualized scene. Kinesthetic or organic self-reference was found to occur frequently and to assume the following forms: (1) objectified and fused with the visual self; (2) oscillating with the visualized self and localized in the body of the subject; (3) objectified and fused with a visualized object or a visualized person other than the self; (4) abstracted from all visual content and objectified or not.

The rôle of the organic factor in the consciousness of meaning was emphasized in the report of experimental work by Professor Murray. The use of an extended imagery questionnaire in a group of elementary students brought out the fact that the organic imagery was accessible to introspection. Such stimulus words as expectancy, impatience, fright, surprise, relief, etc., were used, and definite organic imagery was roughly demonstrated. Further tests with such words as mental, delicate, difficult, mistake, possible, etc., showed that organic and motor imagery claimed an equal share with visual and auditory imagery.

Dr. Starch described a method for the objective measurement of handwriting by means of a celluloid graphometer, which measures the mean variation of the slant letters and their mean deviation from

the base line. These two are reduced to the same units of linear distance and averaged. In this manner all the samples in Thorndike's scale were measured, which showed that the uniformity of letters regularly decreases as the quality decreases.

The relation between the retina and right-handedness was discussed by Professor Stevens in reporting experimental results on the study of the space sense of the retina. His conclusions are as follows: (1) in the horizontal meridian, the right half of an extent in the field of vision is overestimated; (2) this overestimation holds true for both right and left eyes; (3) the extent which is overestimated forms its image upon the left corresponding halves of the two retinas; (4) the left corresponding halves of the retinas are connected exclusively with the left hemispheres of the cerebrum; (5) by reason of the fact of a marked difference in the space sense of the two halves of the retina, those objects in the right half of the field of vision, by appearing larger, attract the visual attention which in turn leads to grasping movements of the right hand. The hand thus favored by the earliest experiences acquires a special skill which causes it to be used in all manual acts requiring the greatest precision.

Professor Magnusson reported experimental data on visual sensations caused by changes in the strength of a magnetic field. The results verified the work of Dunlap and Thompson; ascertained that the magnetic field induced by making and breaking a direct current gives a visual sensation; gave threshold of the sensation in terms of ampere turns and the dependence of the sensation upon the frequency of the current. No sensation other than visual occurred and no after effects were experienced.

Professor Cannon reported the work recently done at the Harvard Medical School on physiological changes attending fear and rage in cats. It was shown that the emotional excitements caused the adrenal glands to pour adrenalin into the blood, and it was thought that this might account for the continued excited state of the body. It was further shown that glycosuria occurred, following the production of adrenalin and the conclusion was that in the wild state the production of sugar furnished new energy and the adrenalin prevented fatigue. In this case these physiological changes would be distinctly useful functions.

Introspection is not only an instrument of psychological investigation, it is also itself a psychological process or group of processes, and as such must be capable of psychological analysis. This was the point of view defended by Professor Dodge in a paper on the nature and limits of introspection. Such an analysis should furnish data for the evaluation of the products of introspection, for an estimate of its reliability as an instrument, and for an estimate of the factors



of mental life that it is best calculated to disclose. The world of things is the result of the integration of sensory experience while introspection furnishes material for the integration of unitary experiences. The phenomena of introspection are not final facts of mental life, but like the phenomena of sound, are indicators for scientific construction.

Professor Dodge also described two new sphygmographic instruments. The first which was demonstrated is a pneumatic photographic recorder of extremely low latency and high sensitivity. Used in connection with any good microscope, it records vibrations of over 1,000 per second, shows overtones of vowels and heart tones, and gives pulse waves of any desired amplitude without changing its latency or other constants. Suitable for class lantern-demonstrations of pulse and plethysmographic changes, it is durable and practically fool-proof, at least for any one who can use a microscope. The second recorder was not demonstrated. It provides for recording the pulse of a distant and active subject by means of a string galvanometer.

Mr. Munsell described his pigment color system and exhibited his books and models and apparatus, including a daylight photometer which attracted considerable attention. Lack of space forbids adequate description here, but extended explanation may be found in *The Psychological Bulletin*.<sup>2</sup>

Propos of the doctrine of reserve energy, Dr. Williams pointed out that the inhibition of energy is not synonymous with storage and the energy which is not expended so as to be seen by the superficial observer is not merely held in reserve to be set free by therapeutic treatment. What does happen is that the energy is rechanneled, *i. e.*, set going into new directions.

Dr. Burrow objected to the present anatomical, static, bureauological ideas in connection with the definition of neurasthenia, and contended for a more restricted, individual, dynamic interpretation, such as may be yielded through a physiological analysis of a particular case. The conception of functional changes having their basis in disintegrations occurring within the elements of the nervous system so minute as to escape ordinary objective tests he held to be a dodging of issues. He thought rather that important affective trends, obstructed in their natural course, bring about vicarious gratifications in unconsciously motivated reactions, allied with the affective state through somatic associated connections. Such somatic connections are the so-called symptoms of neurasthenia. This point of view, he thought, was supported by the evidence from dreams where there was a close parallel between the imagery of the patient as presented in his dreams and the organic imagery presented in his symptoms.

<sup>2</sup> Vol. 6, No. 7.

Professor Jones, accepting Freud's definition of the term sublimation as "the capacity to exchange an original sexual aim for another no longer sexual aim, though a psychically related one," argued that these discarded desires form the basis of many of our interests and activities in later life and insisted that a fuller knowledge of them would be of the greatest value to education by indicating the most fruitful paths along which sublimation could take place.

That the real cause of emotion is a failure in the mechanics of brain integration, immediately occasioned by the occurrence of factors, inner and outer, that are too difficult of synthesis under the given conditions and to whose action the organism may be abnormally sensitive, was the thesis advanced by Professor Huey in a discussion of emotivity and emotion in their relations to adaptation. The brain, the speaker thought, may be as basal an organ of emotion as the heart, and for many persons, disturbances of the pharynx, bladder, genitals, or skin "mirror the soul" more than do the heart and blood vessels. Emotional expression depends on (1) what functionings are called for by the situation; (2) what functionings happen to be in use at the time; (3) early acquired habits of reacting in a given manner to a given emotional situation; (4) what organs or functions are most enfeebled, these being affected preferably; (5) occurrence of misfit, instinctive functionings of possible utility in race experience; (6) functionings suggested to the individual in the fatigue of emotion, social custom, contagion, or auto-suggestion.

At the business meeting, the committees on mental tests, on teaching experiments, and on periodicals, reported progress and were continued. The following recommendation of the council was adopted: "The council, believing that the members of the association should consider exercising a more direct control over the choice of its officers, recommends the appointment of a committee of three to consider this question, and, in the event of their approving a change in the present arrangements, to submit to the next annual meeting the necessary amendments to the constitution." Professors Aikins, Minor, and Pierce were appointed to this committee.

On the recommendation of the council, Professor Thorndike was elected president for the ensuing year and Professors Margaret F. Washburn and Max Meyer were elected to membership in the council for three years to succeed President Sanford and Professor Thorndike. Professor Seashore, the retiring president, was elected to represent the association on the council of the A. A. A. S.

The next meeting will be held in Cleveland, in affiliation with the American Association for the Advancement of Science, during the Christmas holidays, 1912. The International Congress for the spring of 1913 is abandoned.

M. E. HAGGERTY.

INDIANA UNIVERSITY.



## REVIEWS AND ABSTRACTS OF LITERATURE

*Animal Intelligence: Experimental Studies.* EDWARD L. THORNDIKE. *The Animal Behavior Series.* New York: Macmillan. 1911. Pp. viii + 297.

All psychologists will be glad to have Thorndike's experimental work on the intelligence of animals brought together in this convenient form. The thesis on "Animal Intelligence," which was for many of us the first intimation that a real science of comparative psychology was possible, has been for some time out of print. It is here reprinted, together with the paper on "The Instinctive Reactions of Young Chicks," the "Note on the Psychology of Fishes," and the monograph on "The Mental Life of the Monkeys." To these papers there have been added an introductory chapter, an essay on "Laws and Hypotheses of Behavior," and one on "The Evolution of the Human Intellect."

It is the new chapters, of course, that demand discussion in the present review. Thorndike's experimental researches have now undergone the test of time, and their influence has been valuable enough to satisfy any worker in a scientific field: few doctors' theses, indeed, have been so fruitful as "Animal Intelligence." The introductory chapter in the present book defends the study of behavior as opposed to that of "consciousness as such." The chapter on "Laws and Hypotheses for Behavior" proposes, as laws of behavior in general, that behavior is predictable, that "every response or change in response of an animal is the result of the interaction of its original knowable nature and the environment"; and the law of instinct, that "to any situation an animal will, apart from learning, respond by virtue of the inherited nature of its reception-, connection-, and action-systems." All learning can be brought under the law of effect, that "of several responses made to the same situation, those which are accompanied or closely followed by satisfaction to the animal will, other things being equal, be more firmly connected with the situation, so that, when it recurs, they will be more likely to recur;" the reverse being true of responses accompanied by discomfort; and the law of exercise, that "any response to a situation will, other things being equal, be more strongly connected with the situation in proportion to the number of times it has been connected with that situation and to the average vigor and duration of the connections. The satisfaction and discomfort mentioned in the law of effect are correlated with advantage and disadvantage, not necessarily to the organism as a whole, but to its neurones." Accessory conditions to the laws of effect and of exercise are the closeness with which the satisfaction is associated with the response, and "the readiness of the response to be connected with the situation." The chief point at which the reviewer would take issue with the author in this chapter concerns the relation between an act and the idea of an act. As is well known, Thorndike opposes the doctrine that an idea of a movement causes the movement. The reviewer, for whom this doctrine is one of the really valuable and fruitful discoveries of modern psychology, has long felt that its critics misunderstood the meaning of the term "movement idea," and the arguments put forward in the chapter under consideration confirm this opinion. Take for instance the following: "It is certain that in at

least nine cases out of ten a response is produced, not by an image or other representation of it, but by a situation nowise like it or any of its accessories. Hunger and the perception of edible objects far outweigh ideas of grasping, biting, and swallowing as causes of the eating done in the world." It is surely sufficient to reply that the doctrine of the movement idea is applied to the perfecting of new responses, not to the performance of instinctive responses, and that of course even in new responses the place of the movement idea is commonly later taken by an associated idea or perception. "It is also certain," the author continues, "that the idea of a response may be impotent to produce it. I can not produce a sneeze by thinking of sneezing. And, of course, one can have ideas of running a mile in two minutes, jumping a fence eight feet high, or drawing a line exactly equal to a hundred millimeter line, just as easily as of running the mile in ten minutes, or jumping four feet. It is further certain that the thought of doing one thing very often results in the man's doing something quite different. The thought of moving the eyes smoothly without stops along a line of print has occurred to many people, who nevertheless actually did as a result move the eyes in a series of jumps with long stops." The sneeze, of course, as a reflex, may be left out of consideration; nobody ever claimed that movement ideas produced reflexes. As for the other instances adduced, it is sufficient to say that no one has ever had an idea of running a mile in two minutes, or of any of the other impossible feats mentioned, or of moving the eyes smoothly along a line of print. The ideas which people may have thus labeled would be revealed by even a moderate degree of introspective analysis to be ideas of movements that had actually been performed by the persons entertaining the ideas. A movement idea is the revival, without peripheral stimulation, of the sensations that resulted from the actual performance of the movement: if the movement has never been performed, its idea is impossible.

Further, Professor Thorndike appears to think that the admission of the law that the idea of a movement can cause the performance of the movement would add a third principle of learning to the laws of effect and exercise. It would never have occurred to the reviewer not to see in the law of the movement idea a striking instance of the law of effect. It is of course always understood that a movement idea will not produce the corresponding movement if it or any of the associated processes that may be substituted for it has been connected with sufficiently strong unpleasantness. Just as an outside stimulus that by virtue of an inherited nervous connection naturally produces a movement may cease to do so if the movement has unpleasant consequences, so may a movement idea lose its movement-generating power. And the movement idea is itself based on the most immediate effect of the movement; the sensations, kinesthetic and otherwise, that are aroused by the motor process as it takes place.

In the last chapter, on "The Evolution of Human Intellect" the writer points out that the superiority of the human mind consists in the power of analyzing situations, which, in turn, depends on "the increased delicacy and complexity of the cell structures in the human brain."



*A Text-book of Experimental Psychology.* (With Laboratory Exercises.)

CHARLES S. MEYERS. Second Edition. 2 volumes. New York: Longmanns, Green, and Co. 1911.

The first glance at the second edition of this useful book reveals a striking improvement in general appearance, in binding, quality of paper, and in other details that go far toward making a book agreeably received. From the point of view of content, the references at the chapter ends have been brought up to date and the following changes have been made in the text.

In chapter two (Cutaneous and Visceral Sensations) the recent work of Head and Rivers is amplified, and Head's assumption of the existence of two differently distributed systems of peripheral nerves underlying the two systems of cutaneous sensibility gives way to the suggestion of a single physiological system dissociated into separate psychological systems. The paragraph on "The Specific Nature of Pain Sensations" is omitted. To chapters three and four (Auditory Sensations) are added a paragraph on vowel quality of tones and two on consonant intervals and fusion. From chapter five is omitted the section on "Nervous Connections of the Motor and Labyrinthine Sensory Apparatus." Hering's colored diagrams, showing the relation between the pairs of antagonistic colors, are added to the chapters on "Visual Sensations." Chapters twelve and thirteen, on "Memory," remain unchanged except for the inclusion of the "method of reconstruction." Various parts of these chapters remain obscure to the average student, but this difficulty largely inheres in the nature of the material itself. Chapter sixteen, "On Weight," is recaptioned "On Muscular Effort," and supplemented by recent work on ocular movements. The chapter on "Local Signature" contains a new section dealing with "Autokinetic Sensations," and in the chapter on "Experiences of Identity and Difference" appears a paragraph on "The Influence of the Sensory Cortex." The chapter on "Feeling" now precedes that on "Attention" and is supplemented by a statement of the effects of thalamic lesion. A final new chapter on "Thought and Volition" gives a brief view of the recent experimental investigations of imageless thought, the conative experience *sui generis*, determining tendencies and attitudes of consciousness, chiefly from the point of view of method.

Volume two, of one hundred and seven pages, contains the laboratory exercises. The manual is inadequate as a guide in the hands of the beginning student, since it lacks sufficient prescription of method and detailed procedure. It will serve better as a manual of suggestions to the instructor, who, unless he can work personally and continuously with each pair of students or satisfactorily rehearse the experiment in a preliminary way before the class as a whole, must work out his own outline in detail. For suggestions toward the contents of such an outline the manual is very useful in the fields covered. The reviewer regrets that the publishers have announced that the two volumes will not be sold separately.

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## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. November, 1911. *Le problème sociologique et le problème philosophique* (pp. 449-490): E. DE ROBERTY. - The neo-positivistic position, that philosophy, like all branches of knowledge, has been in the past beset with illusions, "a real astrology and alchemy of general thought," is going to result in a new study, purely sociological, of the concepts of the mind and the laws of nature. *Freud et le problème des rêves* (pp. 491-522): KOSTYLEFF. - Freud's principle, the progress of sensorial regression, finds in objective psychology a physiological basis that responds to all the varieties of dreams. *Vie animale et vie morale* (pp. 523-528): A. LALANDE. - A response to an article of Le Dantec on "Vegetative and Intellectual Life." *Revue Générale. Les périodiques allemands de psychologie*: FOUCALT. *Analyses et comptes rendus*. Schiller, *Riddles of the Sphinx*: L. DAURIAC. Moore, *Pragmatism and its Critics*: L. DAURIAC. L. Davillé, *Leibnitz historien*: A. PENJON. K. Vorländer, *Geschichte der Philosophie*: M. SOLOVINE. Bernardino Telesio, *De Rerum Natura*: M. SOLOVINE. A. Wohlgemuth, *On the After-effect of Seen Movements*: B. BOURDON. *Nécrologie*.

Keyserling, Hermann Graf. *Prolegomena zur Naturphilosophie*.

München: J. F. Lehmann's Verlag. 1910. Pp. xii + 159. 5 M.

Ostwald, W. *Natural Philosophy*. Translated by T. Seltzer. New York:

Henry Holt & Co. 1910. Pp. ix + 193. \$1.00.

## NOTES AND NEWS

THERE has been established in Geneva an Institute for the Science of Education, which will be opened October 15, 1912. M. Pierre Bovet, professor of philosophy and pedagogy at the University of Neuchatel, has been chosen director, and Professor Ed. Claparède, director of the psychological laboratory at the University of Geneva, will give instruction in psychology. The institute will be open to those who wish to follow the vocation of teaching.

MAURICE DE WULF, professor at the University of Louvain, announces that the new edition of his work, "Histoire de la Philosophie Médiévale," contains many expansions in the text and the addition to the bibliography of many titles of books produced within the past five years.

THE Holiday Course organized by the University of Lille, with the co-operation of the Alliance Française, will enter upon its eighth year at Boulogne-sur-Mer in August, 1912. The course is planned to appeal to all students, whatever their knowledge of the French language may be.

PROFESSOR CHARLES SEDGWICK MINOT has been selected by the German government as Harvard exchange professor at the University of Berlin for 1912-13. Dr. Rudolf Eucken, professor of philosophy at Jena, has been appointed exchange professor at Harvard University.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### STUDIES IN THE STRUCTURE OF SYSTEMS

#### 1. THE SEPARATION OF PROBLEMS

MATHEMATICS, physics, astronomy were mere chapters in the philosophy of Greece. Gradually they became conscious of their own problems and matured into relative independence. This process of emancipation is typical: many classes of problems (an infinite number perhaps!) are contained in the realm of what is commonly called philosophy; more or less vague efforts at solving them are made, and these absorb the attention for a while until there comes a day when one class is recognized as distinct from the others, and a new science is born out of philosophy. Mathematics arrived at this condition early; physics only in the days of Galileo. It is true the experimental method which he used would alone assure him immortality. But it is not this new method which emancipated physics; it is the particular type of problem which Galileo set. At first sight it might seem limited in application and insignificant in interest; but it proved fruitful in calling forth other problems of the same type, in whose solution the same or similar methods of procedure were effective. Singling out a new type of problem gave birth to a new science.

This process of emancipation of philosophy's progeny is going on vigorously even to-day. It seems only yesterday that chemistry was born; and now psychology is asserting with gentle emphasis that it is weaned from the mother milk of philosophy!

In the realm of the old Aristotelian logic there are four distinct classes of problems that are still treated promiscuously and without regard for their inherent distinctions. Solutions of one are given out for solutions of another, though in reality they may be perfectly irrelevant to it. To separate these disciplines by clearly distinguishing the kinds of problems which they present will greatly help in their development; it is the first and indispensable step toward their proper solution.

They all refer principally to what may be called "cognition," i. e., knowledge of a certain kind characterized by the property of being coherent, necessary, systematic, etc. Mathematics, physics, may stand as examples of what is here designated by cognition and may always be substituted for it in the present discussion.

Suppose a system of cognition, such as plane geometry, to be given, *e. g.*, in the form of Euclid's "Elements." Various questions may be asked regarding it, such as: Are the propositions clear and convincing? Do you grasp them readily, or only with difficulty? Are the "axioms" more "evident" to you than the propositions? How is your attitude toward the truth of a proposition affected by the "proof" which is given of it? Is your study aided or impeded by "logical rigor" in the formulation of the "axioms" and the arrangement of the propositions? How were these propositions discovered, and what natural conditions are most favorable for discovering new ones? These questions can easily be multiplied indefinitely. They are all of a certain type which may be characterized as follows: They imply that, besides the system of geometry, an "I" or "you," in general, a "consciousness," a "subject" is given, and the questions concern the relation of this "consciousness" to the system of propositions of geometry. Both are, in the meaning of the questions, separate, distinct, though in relation to each other. What this relation is in particular is not stated. The propositions of geometry may be conceived as "acts" of this "subject," as "content" of this "consciousness," and thus as residing in this "ego"; but the words "acts," "content," "in" indicate again special relations of these propositions to the "subject," just as did "evidence," "clearness," "difficulty of apprehension." Any question even whether a proposition may "exist" independently of a "human consciousness" or whether it is, first and last, nothing but a "content of some human consciousness" must be considered to be of the same type.

In order to make this clearer let us call the propositions, concepts, etc., such as form plane geometry, "*logical entities*," and let us say that they have "existence" in a definite realm which we will call the "realm of logical entities." Distinct from this "realm of logical entities" is the "ego" which enters into (or is in) relation to them; and I shall call this relation the "*subject-relation*" of the logical entities. Some such distinction is indeed required by any of the above questions and it does not in any way prejudice the decision as to *what* the subject-relation will be: the whole realm of logical entities may be "immanent" in the "ego," or "transcendent"—immanence and transcendence would merely express definite kinds of subject-relation.



It is apparent that what ordinarily passes for "idealism" is concerned primarily with problems regarding the subject-relation. And it has often passed for "obvious" that a consideration of the subject-relation is primary, indispensable, unavoidable, decisive. Quite on the contrary it seems to me necessary to recognize that problems regarding the subject-relation are merely *one* type of problems, that other, distinct types of problems are possible and important in the solution of which a decision regarding the subject-relation is *irrelevant*. This does not derogate in the least from the importance of carefully studying the subject-relation.

It seems to be recognized more and more that problems of this type belong to psychology; and I shall therefore speak of "*Psychology of Cognition*" to designate the discipline which studies the subject-relations of logical entities. It may be that this type of problems can fruitfully be subdivided; it may be that this whole type should be classified differently; it will have no bearing on the present study, so long as problems regarding the subject-relation of logical entities are recognized as distinct from others regarding the logical entities themselves.

It is a platitude that nothing is *true* for me unless it is true for *me*—though much discussion has hinged on this platitude. An extreme individualism has based on it the theory that no truth exists for me, unless it is recognized, seen, apprehended as such by me. All those who urge "evidence" as *the* test of logical truth, maintain in the last resort, or frankly even from the beginning, this theory. They base "logic" on "psychology"; for "evidence" is one kind of "subject-relation." So long as this subject-relation remains the problem under investigation, their claim may be made with much force. We seem indeed to be constantly guided in our search for truth by the "clair et évident" of Descartes—though it may well be suspected that the subject-relation corresponding to what we call "truth" is much more complicated, as the pragmatists are showing with convincing force. But when we set the problem of the truth of a proposition, *apart* from its power of convincing me or you, provided such a problem is admitted as possible, we enter a completely different realm of investigation. Still clearer is this when we state such problems as: Does proposition  $p_1$  "imply"  $p_2$ , or not? What is the exact relation of  $p_1$  to  $p_2$ ? Can  $p_2$  be "proved" by assuming  $p_1$ ? We then do not ask: Can "we" prove  $p_2$ , but: Can it be proved? And these two do not by any means coincide. We must often admit the logical existence of relations, though "we" are unable to exhibit them. Every algebraical equation *has* a root, *i. e.*, a root "exists," but given an algebraical equation "we" can but rarely find it. It is by no means necessary to go to special cases in mathematics to show

the distinction between "logical" and "psychological" existence, though it is good to give a radical example where no "knower" exists who psychologically "perceives" the existence of the logical entity. For whilst in the ordinary examples we readily admit that a certain relation may logically exist between  $p_1$  and  $p_2$ , though "you" or "I" do not "see" it, *i. e.*, though it does not exist for "us," we are apt to overlook the radical nature of the distinction, because we may still, and often rightly, say: but it exists "psychologically" for "somebody." This blurs the distinction; for instead of entering into the purely logical question of the relation of  $p_1$  to  $p_2$ , we fall back into the psychological question of the subject-relation of this logical relation, by reiterating: but the relation  $R$  must be in subject-relation to "somebody," some "consciousness," some "subject," some "knower"! This is a mixing of problems, for the question was not: How do we, or how does anybody, perceive, or find, or in whichever manner establish a subject-relation to  $R$ ; but: does it "exist"; does the proposition that "the sum of the angles in a plane triangle is equal to two right ones" presuppose the "parallel axiom"?

To some it will, no doubt, be quite impossible to "ignore," for the time being, the psychological problem of the subject-relation, and to them the "realm of logical entities" will always flit around some "consciousness"; as the platonic ideas always had physical existence somewhere, as Kant's "transcendental ego" was hidden in the innermost depths of the brain. And yet, it is just this "*ignoring*" of one problem when moving in the realm of another which is so characteristic of all fruitful work: in any "object" many kinds of problems intersect; properly and systematically to ignore the "others" is the first and necessary step toward the solution of the "one."

Whatever theory is accepted regarding the subject-relation of a logical entity does not in any way decide the question of its logical existence. If it is held that all logical entities without exception are in subject-relation to some "consciousness," it is still necessary to establish the distinction between "existing" and "non-existing" logical entities. This may be done by saying: a logical entity "exists" if it is "necessary," "of general validity"; whether such an attempt would prove successful or not is not our concern here; but it is our concern to insist that the mere relation of *all* logical entities to some consciousness is not capable of serving for a criterion to establish this distinction. *It is irrelevant to the problem of the existence of logical entities.*

If this distinction of the problems regarding the subject-relation of logical entities from those regarding the logical entities themselves is admitted, we may proceed to exemplify the latter types of



problems. I shall call them "*Logic of Cognition*," "*Critique of Cognition*," and "*Structure of Cognition*."

"*Logic of cognition*" treats of the relations of logical entities, not to a subject, but to each other. What are the propositions of plane geometry? Does a certain proposition  $p_1$  "imply" another  $p_2$ ? What consequences follow from certain assumptions? What laws are valid in the drawing of inferences? Logic of cognition constructs, from the true beginning, systems of cognition. Attempts such as Whitehead and Russell's "*Principia Mathematica*" are essentially examples of what is meant here by "logic of cognition." It is dogmatic in form; it does not justify or criticize; it exhibits, it hypothesizes, it proves; in brief, it constructs.

But with its special type of problems "*logic of cognition*," particularly in its beginning, combines (and often confuses) problems of the third type: "*critique of cognition*." "*Critique*" determines the logical "value" of systems of cognition; its main problem is the determination of the "truth" of a system, whilst "*logic of cognition*" should be indifferent to the question whether the hypotheses, whose consequences it develops, are true or not. When mathematicians exhibit sets of postulates of algebra, of geometry, they move in the realm of "*logic of cognition*"; when they add proofs of the "independence" or "consistency" of these postulates, they enter into the realm of "*critique of cognition*." Critique elaborates and applies certain criteria (which may be called "*criteria of truth*") to systems of cognition.

Construction and critical examination of systems of cognition, embracing as they are, leave still another type of problems dealing with the logical entities themselves. To state this new type of problems, I find it convenient to take up the old distinction between "form" and "content" and apply it to systems of cognition. Suppose we are studying the properties of parallelograms. We could write down a system of propositions, such as: the opposite sides are parallel; the opposite sides are equal; the opposite angles are equal; etc. But we might next ask: Are these propositions "independent" of each other? Or can we, in a plane geometry, by assuming some of them, deduce the others? We might then elaborate a different set of propositions, in which we proceed from some "defining" the parallelogram to others which we "prove." In both cases the same logical "content" is presented, namely, the properties of a parallelogram, but in different "form": a mere enumeration was "transformed" into a deductive system. And therewith a whole class of problems is presented all of which refer to the *structure of these possible forms*, in which the logical content of systems of cognition is or may be presented. What are the structural elements of a

"deductive system"? How is it to be distinguished from "inductive systems"? What are the advantages of either form? What conditions must a certain logical content satisfy so that it can be put into the deductive system form? Are other, better forms existent or possible? What is the nature and function of "axioms," "definitions," "proofs"? The problem of the "new" in mathematics, the advantages and disadvantages of applying the deductive system form to "philosophy," all these are examples of the type of problems which constitute "*structure of cognition*."

These preliminary remarks may serve to direct attention away from some problems and toward the type to be examined in these studies, namely, the ones pertaining to "*structure of cognition*." Toward the necessity of keeping these problems distinct the following studies will add new evidence. Yet, the relation of these four disciplines to each other is so peculiarly close, that it is small wonder they have not been clearly distinguished before. No system can be presented without an appeal to the understanding of the reader, *i. e.*, without some subject-relation; every system will use concepts and propositions of logic of cognition; every system will have some structure, and endeavor to conform to the criteria of truth. This tends to confuse the issues; but if the emphasis is laid on the *problem* which is presented for solution, the distinction becomes simple. Every system *has* a definite structure, but this structure need not be the *problem* of every investigation; every system shall enter into a definite subject-relation, but this subject-relation need not be the problem of every investigation, etc.

Since the days of Kant, and largely in consequence of his work, our thinking has been controlled by the idea of "presupposition." Categories and fundamental judgments were to him "conditions of the possibility of experience," *i. e.*, that which is necessarily presupposed by experience itself. This idea has been extended to apply to sciences as a whole when we say: mathematics is presupposed by physics and attempts have been made to order the various disciplines in a series from this point of view of "presupposition." It is necessary to insist here, however, that this idea of "presupposition" leads readily to vagueness and confusion if applied promiscuously. It requires two restrictions.

In the first place it is by no means "self evident" that the various disciplines can really be arranged in serial order by this principle of presupposition; and this applies to the four disciplines which we have differentiated above. In a certain sense any one of them "presupposes" all the others. You can not study the subject-relation without using logical concepts and methods, without applying a definite ideal of truth, without putting the logical content of your



study into a form of definite structure; and the same applies around the circle. Not only is it vain thus to try to find the "more fundamental" of the four, but it is positively misleading and injurious: we are apt to think that the questions of one can not be answered unless those of all the others are answered, somehow or other, first. We become so involved in "presuppositions" that we are unable to move a step forward or backward. The lesson of this predicament is instructive for all other cases. We must break through the idea of "presupposition" as applied to the various disciplines and recognize that each discipline makes its own presuppositions, its own hypotheses on which it builds; and in doing so may ignore the hypotheses of others. Mathematicians let "solids" interpenetrate each other, assume lines without breadth, weight, or color; to the physicist or psychologist such entities may be quite chimerical.

In the second place the idea of "presupposition" is meaningless, unless the "point of view" is added from which the presupposition is considered, in other words unless we state in the realm of which problem the particular presupposition is studied. The discipline which is "presupposed" by another in the realm of one problem may in turn presuppose it in the realm of a different problem. And thus we are led back again to the first distinction between the various *problems* which control our procedure: not methods, not objects, not principles and presuppositions separate these disciplines "psychology of cognition," "logic of cognition," "critique of cognition," "structure of cognition," but their problems!

If this is kept in mind, a paradox which may otherwise be puzzling will readily dissolve. In this study of the structure of systems we shall frequently "criticize" other accounts, and in this critique apply criteria which can be developed satisfactorily only in "critique of cognition." Thus we shall frequently apply the criterion of "completeness": certain accounts will be found defective in completeness in that they do not account for certain "facts." This would indeed be an infringement on the proper province of "critique of cognition," were it not for the circumstance that such critique is here merely incidental and for purposes of exposition. When some day the structure of systems will be studied more elaborately, we shall be able to dogmatically develop the various possible accounts, and then submit them to a systematic "critique." The growth of any science illustrates this, though what has been done more or less instinctively we can to-day see rationally. The change in procedure between Russell's "Principles of Mathematics" and Whitehead-Russell's "Principia Mathematica" is instructive in this respect, and illustrates the maxim that the reduction in polemic is proportional to the degree of logical perfection of a discipline; for

the logical development of a system is one thing, its critical evaluation a second and distinct problem.

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### A SIMPLE METHOD FOR THE STUDY OF ENTOPTIC PHENOMENA

THE introspective examination of the eye is interesting, both in experiments and in classroom work. The general name of entoptics for this subject was suggested by J. K. Listing. The method of studying the interior of one's own eyes, by letting light shine through a small pin-hole held close to the eye, has been carefully developed. Barrett constructed an elaborate instrument on this plan and made some detailed experiments which are reported in the *Proceedings of the Dublin Royal Society*, 1906. That the inside of the eye can be illuminated by the light reflected from a bright surface held close to the eyeball has been frequently mentioned, but the possible improvements in method that this fact provides have not been developed so far as I am aware, nor have their great advantages been appreciated.

A very simple and very effective apparatus for becoming acquainted with some of the characteristics and phenomena of one's own eye is provided by small silver beads strung on a wire in a spectacle frame. From the standpoint of psychology, perhaps the most important use of such an instrument is in the study of the movements of the iris.<sup>1</sup> If, for instance, three beads are strung for each eye on a wire adjusted to the spectacle frame so that they are horizontal just below or perpendicular to one side of the pupil, they will throw three circles of light upon different parts of the retina of each eye. For some experiments it is well to cover the frame with black cloth, allowing the beads to show through a slit. The beads may be moved back and forth and the intensity of the light increased or diminished by approaching it or removing from it until the middle circle is exactly tangent to the two others.

In the first place we have here a means of observing the reflex action of the pupils in both the eyes at the same time. Their co-ordination may be examined.

In the second place we have a means of measuring quite exactly

<sup>1</sup> Badol reports an instrument to study dilations of the pupil in *Transactions de la Société de Biologie*, 1876. He used a cylinder and two cards with pin-holes. For the study of iris movements from the medical standpoint, see Bumke, "Pupillenstörungen," 1904, and Bache, "Pupillenlehre," 1908.



the enlargement and contraction of the pupil. The middle circle will go over into the field of the other circles or will draw away from them. A scale at a fixed distance from the eye may be used to interpret dimensions objectively.

In the third place and this is an exceedingly important point—the observer may take an easy position, settling back in his chair and permitting everything to fall into a normal condition. Such a condition is hardly possible where the eye is being looked at from the outside.

The reflex movements due to quantity of illumination, to converging movements of the eyeballs, to bodily irritations, and to mental states can be examined at one's leisure. A physician who undertakes to study iris movements in a patient would do well to be familiar with the reflex action in his own eye. Interesting are the changing jerkiness of the continual oscillations, the influence of fatigue, the reaction time, etc. It is noticeable, for instance, that the motion of the circles of light away from the center is greater than that about the macula. Again, the student will probably be surprised to find that, given a certain coordinated dilation with one eye closed, the opening of the closed eye brings about a quick contraction. He might have expected that, as the intensity of the sensation is not increased when objects are seen with two eyes, so the reflex motor effect would not be increased.

The use of a single bead with two or three sources of light moved nearer and farther away enables one to light up surfaces of the retina with different intensities. This different lighting is an advantage when one wishes to compare entoptic shadows falling on the outer portions of the retina with shadows at the center. If the lighting be of the same degree, the central shadows are so much clearer that it is hard to pay attention to those away from the center. The difficulty may be partly overcome by strengthening the illumination which is thrown upon the outer parts of the retina. This advantage becomes quite important when one is trying to locate the position of the bodies which throw the shadows. Those near the center of the lens do not change their respective location on the different circles of light. Those in front move apart and those behind move together.

In my own eye there is a fixed opaque body at about the center of the lens. A body like this enables one to confirm the blind spot. There is also a movable anchored body on the nasal side just back of the lens. I can throw this into the field of vision by a quick movement of the eyeball, and then it will slowly draw back out of sight. If the light be dimmed the iris curtains are drawn away and show it stationary.

These circles of light give indirect information about the place

of the veins and arteries that appear upon the retina when a light is moved about just below the pupil. The student will probably be surprised to learn first of all that none of the blood-vessels are made visible when the circles of light are thrown upon the retina from his bead. Our method of studying entoptic phenomena allows a simultaneous combination with Purkinje's experiment. The arbor-like branches will then be seen passing right across the circles of light.

I will mention one more fact observed on using one bead with two lights, which seems to have a rather special psychological interest. If a light of a certain intensity is throwing a circle upon one portion of the retina and another stronger light is turned on to throw a circle upon another portion quite a distance away, there is an immediate dimming of the first circle. The dimming is of such a character as to appear to be entirely a peripheral matter and not due to mental interpretation from contrast. A possible analogy might be the disturbance of one current of electricity by the proximity of a much stronger current.

The same bead arrangement may be used to throw different colors from colored electric light globes upon different surfaces of the retina. These circles may be superposed, the different parts of the retina compared as to color sensation, the effects of contrasts brought out, etc.

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## DISCUSSION

### ON MIND AS AN OBSERVABLE OBJECT<sup>1</sup>

A PAPER of this same title which I offered a year ago met with a success beyond my expectation. It is something to have aimed at brevity and to be assured one has not missed completeness. Now there are a number of ways in which a theory of mind may be vitally amiss: in its epistemological background, in its psychological application, in its ethical consequences. Yet brief as was my exposition, my critics gave me to understand that I had let none of these ways of going astray escape me.

If then I return to my thesis, if I am led into an insistence neither justified by its merit nor excused by its interest, something

<sup>1</sup> This paper was prepared to be read before the Philosophical Association at Cambridge; but owing to a misunderstanding on the author's part was presented too late to be included in the program. With this explanation, the paper is offered without change of form.



must be forgiven a scruple: I would make sure that my sinning was as round and perfect as my critics would have me think.

As for background, it can not be painted in with a word or two. Professor Miller in the *JOURNAL OF PHILOSOPHY* has called attention to the defects of an epistemology that would let one speak of mind as a trait of behavior, and I have met as best I could objections so well considered and so clearly put.

This matter of background may then be allowed to rest for the moment, but it is with no little regret that I postpone the consideration of ethical consequences. For I was greatly interested in a deduction of Professor Ormond's making: One who regards mind as a trait of behavior, must he not hold that when the body is dissolved in death the soul that once inspired its outworn flesh is also dissipated and lost?

I have spoken too hastily of criticism. Mr. Ormond would justly blame me for classing under this head remarks that were meant for no more than question. Mr. Ormond would be no more inclined than I to assume that a philosopher is bound to save his soul. On the other hand, I am at least as unwilling as Mr. Ormond could be to divest myself of any rag of immortality that may still cling to me in this cool age. But there are immortal souls and immortal souls. The learned in their high power of abstraction have pretended to find solace in the thought of a soul that, surviving the body, continues to enjoy all the individuality embodiment once conferred on it; living on, I know not where; experiencing, I know not what—I can't think how. This very algebraic soul, this diagram of an ethical idea, my thought may inadvertently have rubbed out. If so, let that rest which never has rested.

But simple folk too have their notion of immortality, and with the simple I would seem to have much in common. I should be sorry to feel that nowhere in my philosophy might I come across the like of that brave and kind soul which has gone marching on now these many years in the songs that men sing. Would you say that my thought had fallen into undignified ways if it sought this spirit in the very world that still sings its name, in the world which still holds a grave where its body lies a-mouldering?

Of all these delicate, difficult matters I would willingly speak another time. Just now there faces me an issue more vital than the destiny of souls after death—it has to do with the nature of souls during life.

To Miss Washburn, whose interest lies in comparing souls, I am indebted for a criticism that cared little enough what theory of knowledge may have gone before my thesis, what ethics might follow on it. Miss Washburn's criticism aimed at things practical: What

are you going to do with a being who thinks, but who exhibits no behavior for the very reason that he thinks? What are you going to do with the passive, the utterly passive thinker?

Before the Panthéon at Paris sits Rodin's image of the Thinker. I know that a statue doesn't really think, but I know too that those who think may sit as stonily statuesque as Rodin's Thinker. Of one who has dared to suggest that mind is a trait of behavior it must inevitably be asked, What in the behavior of the thinker who doesn't behave is his thought?

In the face of criticism so sympathetic and yet so thoroughgoing, it would be vain to point out the differences that make flesh not marble and marble not flesh. Of course the creature of blood and muscle is not wholly inert: his heart beats, he breathes, his eyes blink. More than that—the dendronated termini of the axis cylinder processes of his cortical nerve cells may now and then put forth a new shoot; at the very least, some molecules of him may effect an interchange of atoms while he thinks. The trouble is that Miss Washburn refuses to identify any sort of a motion of atoms with a thought, and this makes the whole situation trying. If I say that the movement of certain atoms is what I mean by the behavior which is thought, the hands of Vogt and Büchner will reach out from Oreus and have me. If I refuse to say this, my own hands will seem to cast me off.

One who has to surmount an obstacle of magnitude is entitled is he not to a running start, a start from old and settled things if any such can be found that hold an analogy? Now this image of the passive thinker does suggest to me something so old as to be almost forgotten—it is the figure of dormant life.

In the *British Foreign Medical Review* for January, 1839, appears the review of a recent medical work. The author, Mr. Carpenter, had defined life as action and had shown—so the sympathetic reviewer sums him up—"that instead of looking for its cause in an imaginary vital principle . . . presumed to exist for the sake of explaining the phenomena, we ought to study the properties which organized structure enjoys and the agents which produce their manifestation."

Even to this reviewer of 1839 the idea that life is behavior has nothing new about it, for he continues, "Some observations are made (by Mr. Carpenter) in refutation of the doctrine of a vital principle and we do not think them supererogatory; for although the hypothesis would hardly have been expected to survive the fine scientific thrusts of Dr. Pritchard's classic weapon or the strokes of Dr. Fletcher's more truculent blade, it seems even yet not quite extinct."<sup>2</sup>

<sup>2</sup> M. Paine, *Med. and Phys. Com.*, I., 13.



The theory that life was something other than behavior was not quite extinct in 1839! Will any theory that substitutes a *Ding an sich* for observable phenomena ever win to extinction? After dormant life comes passive thought.

But to return to 1839 and the years that follow. Among our early American physiologists is to be numbered Martyn Paine, whose work is characterized by the late Dr. Gross as "of great scope and much erudition." Of much erudition, surely, and I beg to recommend Paine's "Medical and Physiological Commentaries" to any in search of sources for a history of vitalism. Of what scope too I know to my sorrow. And yet of the pages and pages of erudition and scope would you know the one image that sticks firmly in my mind, Martyn Paine's arm and shield against classic weapon and truculent blade? It is just a seed, just an ordinary grain of corn, say. For one may defy the world to prove that this little dried-up thing is doing aught to support the hypothesis that it is alive. Yet one may take testimony of all the world that it is a living thing. Dormant life! What does it mean? It takes more than classic weapon and truculent blade to establish life as the thing Bichat defined it to be "the *ensemble* of functions that resist death." There is the seed corn that refuses to function, refuses to resist—for what is there to resist—and yet it lives! But what in it is its life? Ah, it is a certain principle called vital, dormant now, but only awaiting the right conditions to wake into the free gesture of life, into the blade, the ear, the full corn in the ear.

So Martyn Paine. But is it hard for us, who are not of 1839 or 1840, to see that the desiccated seed-corn is living not for what it does, if it does aught in a faint-hearted way to resist death, but just for what it might do? It is still on account of its doing that we call it alive; but on account of its prospective, not of its actual doing. It is *now* alive, for we may now calculate from its condition what under other conditions it would do.

If there is any analogy between dormant life and passive thinking I take some comfort in the formula in which my thesis was presented. Consciousness is behavior, if you will, but "more accurately, our belief in consciousness is an expectation of probable behavior based on an observation of actual behavior, a belief to be confirmed or refuted by more observation as any other belief in a fact is to be tried out."

If Martyn Paine had so viewed dormant life, he would not have felt the need of appealing to a vital principle. He would not have added this unobservable thing to facts observable in order to explain the meaning of the terms we use in describing these facts. If we can bring ourselves to view the passive thinker as we view passive

life, we shall not have to add an "eject" or "thing-in-itself" to the behavior we see in him in order to explain what more than this meager behavior is the rich thought we attribute to him. We shall perhaps find that what we add to behavior actually observed is an actual calculus of probabilities; but the nature of this calculus demands the nicest analysis both as to the grounds on which it rests and as to the kind of test to which it can ultimately be put.

To come at the matter from another angle: the analogy argument for other minds would not be so pernicious if it were not so true. It offers an accurate account of what I do when I furnish a passive thinker's mind for him, only it fails to suggest any grounds on which I may justify my doing; it avoids pointing out a way by which I may discover a mistake if I have made one or enjoy the sense of truth if I have hit on it.

Yonder, say, is my thinker. It is of course the observation of past and present behavior that invites me to consider him as a thinker at all and may even suggest to me that his thought is dwelling on a mathematical problem. But sooner or later in defining his thought I venture a leap in the dark—fill his mind with the kind of thing that goes on in mine. I am not justified by observation, but since I know that a mathematician can not think about mathematics in the abstract I give him a definite problem. He is trying to integrate a differential equation; now he has seized upon a transformation that looks promising; for a moment he hopes, in another moment he has cast the suggestion aside—it has not worked. One may elaborate to one's taste, one is still abstract while the fact before one must be concrete. Our mathematician is integrating? Very well, what is he integrating? Is it an equation of the third order and fourth degree, or of the fourth order and third degree, or of some other order and some other degree?

The obvious resource of one who wants to know is to ask the thinker what he is thinking about. Whereupon the obvious remark of one who regards consciousness as expected behavior is that one who so asks is appealing to behavior to confirm or refute his expectation. But such a triumph is brief. The man who replies is already other than the man who thought. He is in a more advantageous position than I to venture a guess in the same sense that he is better placed than I to see the wall behind my head; but for him as for me it is only a guess. Memory is generally less fallible than divination, but it is fallible enough. Meanwhile if the question as to this thinker's past has a meaning it has also an answer and there is a definable method of arriving at this answer or at least of indefinitely approximating it. An appeal to the thinker to tell us what was his thought can not give us the truth nor open a way by which we may approach



the truth. The thought just past is lost in the infinite ocean of the past, the pebble just now dropped into this ocean is no easier of recovery than is the treasure sunk there a thousand years ago.

Let us then merge our present problem in a more general one; let us try to solve the difficult in terms of the more difficult; let us substitute for our passive thinker another hero.

From certain letters of his, I judge that George Washington spent Christmas Day, 1790, at Mount Vernon. That there was a George Washington and that he was in a certain neighborhood at a certain past time an examination of now existing things will enable me to establish. But what of his slave-boy Cæsar? Was there such a slave-boy? At noon of this day was he in the kitchen of Mount Vernon helping the cook? And what was going through his mind at the moment? Was or wasn't it a thought of approaching dinner?

These questions, humble in themselves, acquire an immense dignity when we realize that it tasks all our philosophy to answer them. Yet there must be a way of answering such questions, or else there is in the domain of reality such a thing as an unknowable fact. This is an equally portentous figure to introduce into one's philosophy, whether it stand for the being and thought of a slave, or whether it be taken for the hidden name of God. In either meaning, in all meanings, it is a term that I have long decided to leave out of my philosophy. The right to do so is one of those questions of background with which I am not on this occasion dealing.

For me, then, and for all who so far agree with me, there must be a way of reconstructing the past. Now the only way of reconstructing the past which science has so far developed is suggested by the classic saying of La Place: "Give me the mass, position, and velocity of every particle of matter in the universe, and I will predict its future and recount its past." I say this utterance of La Place suggests a method of reconstruction: it does not define one; he existed at a moment of the history of mechanics that took too seriously the conception of law at which it happened to have arrived. Of the refinements and generalizations that would have to be introduced in order to convert this suggestion into a definition, I have treated elsewhere, and as they do not affect the issue with which we are now dealing I shall pretend to take La Place quite seriously.

If we do take such ideas seriously, we realize that the conditions on which the whole past may be reconstructed can never be realized. The data La Place asks for are infinite, the law by which he pretends to handle these data is a law that is known to hold only within limits of probable error which can never be reduced to zero. But what is interesting in the situation is that we can see no obstacle to the gathering of more and more of the data demanded, nor to the endless re-

duction of the probable error which attaches to any law in which we propose to substitute the data gathered.

We have here then a method of approximating indefinitely a certain order of facts; but alas! it seems to be an order very different from that in which lay the facts about which we enquired. We asked, Did such a being live? Did he have such and such a thought? And we are answered, At least you may find out within any degree of accuracy required what atoms were in the neighborhood at the time you mention and how they were moving.

I was asked at the outset, Is the movement of an atom a thought? I was afraid to answer yes, and I was afraid to answer no. But such courage has come to me with study that I am now prepared to answer, yes and no. In order that this answer may not seem in any way ambiguous or evasive, I must explain that the movement of an atom is the movement of an atom and a thousand things beside.

When my love swears that she is made of truth  
I do believe her though I know she lies.

As these lines passed for the first time through the poet's mind, I am ready to believe any La Placé who tells me that an atom of carbon in the poet's brain described such and such a path. But if the same reconstructor assured me that another atom of carbon, more like the first than one pea is like another, described just such another path as a certain lump of coal was being shot into my bin, I know not how I should disbelieve him. What then? If moving atoms are thoughts, had not that lump of coal a bit of the poet in its make up?

Love, as our poet sings it, is not the only god that teaches the ear to be willing and the heart to accept truths it knows to be untrue. Mathematical science with its beautiful simplicity has a way of casting spells as deep. The lust for mechanical images is as seductive to the intellect as are other desires to the flesh. One may laugh, but one may not by laughing cure. William James pointed out that the most ravishing music was *after all* but the rasping of hairs from a horse's tail on the intestines of a cat. Plato, with gentler irony, had the Socrates of his *Phædo* explain his situation in like terms. Why was he sitting there awaiting the eup, instead of flying to Megara or Bœotia? *After all* it was because his bones were at a certain angle with each other and his muscles drawn in such a way as to keep them so.

Such sayings as these would be without humor if they were not true. There is nothing false in any of them—or at least there is nothing more false than the recurrent “after all” which seems merely to introduce them. However, nothing can belie a truth as can the gesture with which it is presented. Granted that the poet, the



musician, the moral being, is a congeries of moving atoms, is he *after all* nothing more? Gossmann in his *Empirische Teleologie* has a way of answering the question which has always seemed to me full of meaning. Because, he says, mechanism is *allgültig* it is not therefore *alleingültig*. Mechanical insights give the truth, they only deceive us when we take this to be the whole truth.

Now the vice of those who in the past have criticized the view that would treat mind as an aspect of mechanical behavior is that the critics themselves have been the slaves of mechanical and mathematical ideas. They have seen that there is a sense in which the movement of atoms taking place in a body can not be the thought of that body viewed as a thinker. They have proceeded with the instinct of a mathematician to add something, just as a cook whose dish is tasteless adds seasoning. But as they couldn't get the right flavor by adding more atomic movements, they added an "eject," a "parallel series," an "epiphenomenon."

My whole suggestion is that instead of helping out the shortcomings of a mechanical description of experience by the mechanical addition of something not falling within experience, we simply change our point of view toward the mechanism with which we are presented when that mechanism *also* behaves in a teleological way. Then we shall not be tempted, in trying to say what the movement of a certain atom of carbon has to do with Shakespeare's thought, to study its analogy with all similar movements of atoms of carbon in the wide world. If we insist on doing this we can not fail to arrive at the conclusion that such movements as a class have nothing to do with thoughts as a class. But then, if in order to learn what the turning of a certain wheel in my watch had to do with keeping time, I compared it with all the wheels in the world, those of locomotives, those of rapid-fire artillery, and the rest, I should have to conclude that wheels as a class have nothing to do with chronometry.

I come back at last to my passive thinker. What I observe of his present behavior is not his thought; what I expect in the way of future behavior is not the full meaning of his thought even though that behavior be a minute exposition on his part of what he *believes* to have been his thought; what I might observe of the minutest mechanical changes in him is or is not his thought as I view it. Detail by detail these atomic movements may be classed with other atomic movements and the class has no common function. Putting all together—all that are contained within his skin—I should think it unlikely that if they occurred within another skin placed in other surroundings they would work the same ends, be essential to the same activity of mind. But in so far as they are the mechanism by which the same peculiar aspect of teleological behavior may everywhere be

worked out—then I am willing to say, This is the behavior of the passive thinker that I mean by his thought. I should begin by looking for such movements of atoms as actually moved too slightly for us to notice it—the organs of expression, the tongue, principally, and the eyes. Or perhaps I should find part of the movements to be of this nature, part of them such as strained the muscles that inhibited such expression. Either would be the first step toward a teleological interpretation of a mechanical event. But of these details I am not sure. To find just what that behavior is which others call the criterion of mind and which I call mind is a problem of long and careful analysis. For this analysis we must turn to the psychologist, and, above all, I have recently come to hope, to the comparative psychologist. Yet even this hope must learn to be patient. When one passes beyond new observations to look for new interpretations one finds the shadow of the eject clouding fresh fields.

“Bien entendu,” writes Georges Bohn in a chapter discussing the “criteria of psychism”<sup>3</sup>—“bien entendu, je ne parlerai pas ici de la conscience des animaux. Je ne la nie pas, mais je ne peux rien savoir à son égard. Je parlerai de psychisme, ce mot designant la complexité de phénomènes que je parviens à analyser plus ou moins.”

I can not think a metaphysics useless that might prevent a writer of the keen intelligence of M. Bohn from perverting his own sense of what words should mean to the use of those whom he occasionally refers to as “metaphysicians.” In science as elsewhere it is not a bad thing to have one’s courage with one, and a very little, I should think, would suffice to “deny” what one “will not speak of”—what one can not speak of for the simple reason that one can know nothing about it. Isn’t it saner to seek the meaning of consciousness itself among “the phenomena one can more or less analyze”?

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Elements of Physiological Psychology.* GEORGE TRUMBULL LADD and ROBERT SESSIONS WOODWORTH. New York: Charles Scribner’s Sons. 1911. Pp. xix + 704.

The “Elements” has served a generation of psychological students as a storehouse of information, covering not only the phenomena of nervous structure and function in their relation to the processes of consciousness, but practically the whole domain upon which experimental psychology had entered at the time of its publication, embracing all the orders of

<sup>3</sup>“Naissance de l’Intelligence,” p. 111.



sensation, perception of objects, the time-relations of mental phenomena, emotional states, the system of expressive reactions, and reproductive processes. If the great extension of research, not only into new fields, but also within each individual group of problems, be kept in mind, it is high praise to say that the new edition has fully maintained the standard of comprehensiveness and exactness by which the work was originally marked.

What this extension means in mere bulk and in the tax it imposes on the authors, in making the work representative of the status of research throughout the field discussed, may be inferred from a comparison of the number of sources cited in the two editions, respectively. In the old, there were some hundred and fifty, all told; in the new, considerably over five hundred, or well on for four times as many, appear. The increase in number of individual citations in the new edition is even greater than is indicated by a comparison of authors, for while in the original edition only one fourth of the names occurred more than once, repeated citations in the present mark nearly one half the names.

Yet the bulk and weight of the volume have not been increased. The numbered pages of text in the new edition are less by one than in the old; and while the total number in the revised edition is greater by some half dozen pages, the use of a thinner, but tougher and more flexible, paper has slightly decreased the thickness of the volume. At the same time, nothing has been sacrificed in the way of topographical excellence. The paper is solidly opaque and white, the type large and clear. The pages, also, are of the same size as in the original and the number of lines to a page remains unchanged.

The subject-index of the new edition shows an enlargement even greater than that which marks the list of authors, increasing from about one hundred and forty titles to almost eight hundred, or nearly six times. When it is recalled that not only has the general product of experimental research during the last quarter of a century been added to the matter contained in the original edition, but that wholly new chapters have been introduced, such as the discussion of the process of learning and of the place of the nervous system in the animal kingdom, the successful confinement of bulk within the limits of an easily handled volume is the more remarkable. This has been accomplished in two ways. The more obvious of these is the omission of certain chapters of a more theoretical or speculative character which leaves the empirical summation unaffected. The more important modification in this regard, however, is the painstaking economy of statement which is maintained throughout the work. How much has been done in this way, even in those parts which have undergone the least material changes or additions, can be appreciated only by a careful comparative reading of the two editions, chapter by chapter. The whole work is a close-packed compendium of research which represents nothing less than the history of physiological psychology during the past twenty-five years, the first generation of its continuous and general activity.

What that period of time has meant in the history of experimental

psychology in America, in its bearing both upon the general extension of interest in the study and in the development of the technical means of research, is indicated by a comparison of the place which American titles hold in the two editions. In the original work a half dozen such names occur, or one in twenty-five; in the present edition there are, roughly, six times that number, or nearly one fourth the total. Even allowing for greater completeness in the review of American literature, this change of relative position is impressive. Nor is the advance restricted to any individual province; it appears in the comparative study of organic types, in physiological research, and in the field of exceptional and pathological phenomena as well as in the study of normal processes in the human subject.

The general arrangement of the original edition is retained without change. The summary of psychological data is supplemented by a description of the physical basis of mental activities and by a discussion of the theoretical relations which exist between the two systems of phenomena. The work thus comprises three general divisions: first, a detailed account of the structure and functions of the nervous system; secondly, the presentation of the qualitative, quantitative, and temporal correlations of nervous and mental activities; and lastly, a consideration of the nature of mind in the light of the preceding discussion.

The first part presents two departures from the first edition, apart from the many internal modifications and additions by which it is marked. The one departure consists in a transference of the two chapters on cerebral functions from their original place in the second part to the close of part one. The change brings these chapters at last into a proper relation with the discussion of the mechanics and activities of the nervous system, to which the first part of the work is devoted. The second departure appears in the introduction of a prefatory chapter on the significance of the nervous system in the animal kingdom, in which the different organic types are characterized as well as the general functions of nervous elements, tissues, and systems pointed out. The chemistry of the nervous system is properly given a separate place (new ed., Chap. V.). It is not, however, the addition of a new discussion to the text, since the same problem is treated in the first chapter of the old edition ("The Elements of the Nervous System"). The subdivision was desirable, not only in view of the more substantial knowledge now possessed, but also on the ground of improvement in the logical scheme of treatment.

It seems to the reviewer scarcely correct to say in the preface to the new edition (p. vi) that "two entire chapters . . . have been added to part one," the second being chapter two (new ed.) on the "Development of the Nervous System in the Individual." The sixth chapter of the original edition entitled, "The Development of the Nervous Mechanism," is devoted to this question, and its account runs parallel to that of the new. What does mark the revision is the greatly increased precision with which the intimate process of development is traced. The author of the original edition, limited by the results of investigation at the time, was able to follow, by contrast, only the gross features of the process. In con-



cluding the chapter he adds the words: "All the coarser differentiations of structure to which reference has thus far been made are only the expression—so to speak—of certain histogenetic changes which have been secretly taking place." These changes are now largely an open secret, and it is in the detailed description of the histological development of the nervous system that the new edition differs from the old, rather than in the introduction of an organic part of the discussion previously omitted.

The advance in histology is also reflected in the admirable and abundant illustration which accompanies this section of the new edition. It is shown, for example, in the description of the elements of the nervous system,<sup>1</sup> especially in the new series of cuts (Figs. 46-59). In the original edition there was not a single illustration of the minute geography of the nervous system and its elements which this series of figures represents in such variety and detail. The evidence of progress in this direction is not confined to a single chapter, but extends throughout the anatomical part of the work; compare, for example, as regards both text and illustration, the discussion of the microscopical structure of the cortical layers of the hemispheres. The full treatment of the nervous system from all standpoints—structural, functional, chemical, developmental, etc.—as an introduction to the psychological discussion of problems of psychophysiological interrelation gives the work an independent value for the medical physiologist and alienist which no description of the purely mental phenomena could possess. At the same time the "Elements" provides only the general basis for the work of physician and psychiatrist since its scope is restricted to the phenomena of normal psychophysiology, a limitation which is strictly adhered to even when it involves the exclusion of data repeatedly dealt with in psychological laboratories, such as the influence of drugs upon reaction times, expressive movement, and the perception of objects and space relations.

The second part of the work retains the arrangement of the original edition throughout. Its general subject is psychophysical correlation which is treated qualitatively in relation to three groups of mental phenomena—sensations, perceptions, and representations; quantitatively, in the discussion of the psychophysics law, so-called; and temporally, in the review of reaction time and its complications. Apart from the revision and supplementation which mark practically every page, this section of the work is notable chiefly for the new matter added in the later chapters, in which are summarized the experimental investigations of association and memory; of the nature and forms of learning, both in man and simpler organic types; and of the mechanism of thought processes, attention and its fluctuations, varied reactions, comparison, abstraction, and the forms of reasoning.

In this central division of the work, as well as in the first part, certain general features of the revision may be noted. First, of course, is the great addition to the mass of individual observations recorded, but this is only the beginning of what the new edition represents. Equally strik-

<sup>1</sup> Old Ed., Chap. I.; New Ed., Chap. IV.

ing is the reinspection within each individual field which, through its determination of the more intimate nature of the processes involved, has resulted in many important changes in our conception of the phenomena—for instance, in the distribution of elements in the time-scheme of reactions, in eye-movements and the visual perception of objects and space relations, in the orientation of the body and its sensational basis, etc. A third feature is the application of experimental methods to a larger range of psychological problems which is illustrated in the study of learning and the acquisition of skill and in the analysis of thought processes through controlled introspection. A fourth phase may be added, namely, the endeavor, in both sections of the work, to bring together the results of investigation upon human subjects and various types lower in the organic series, in order to achieve a more adequate view of the forms of behavior and their systematic modifications. This last point of view, however, is not maintained throughout the work, but rather appears as a conception applied in connection with specific problems, such as the development of a nervous system in the organic kingdom and the comparison of processes of learning in man and brute.

In the third part, "The Nature of the Mind," the more theoretical or speculative problems concerning the relation of mind and body are discussed in later and earlier editions alike. To this section in the original plan should properly be assigned the last chapter of part two on "Certain Static Relations of the Body and Mental Phenomena." The five chapters, which this rearrangement gives, are reduced to two in the present edition; roughly, the discussion is cut down to one half its bulk. This modification is in service of the specific aim of the book, to confine attention as closely as possible to the summation of empirical investigations and the correlation of their results in descriptive and explanatory concepts. This reduction has made possible a very considerable addition to the facts discussed, without increasing the bulk of the volume.

Throughout the work the authors show an admirable common sense and succinctness of statement in their presentation of the multitude of facts with which, in its several parts, the work deals. In very many places a fine expository sense is necessary to set forth intelligibly the results of complicated investigations without that elaborate description of methods and instruments which the scope of the "Elements" makes impossible. In very many cases, also, a sustained critical judgment is essential to the appraisal of both methods of research and bearing of results upon debated theories. In all these ways the authors seem to have maintained an attitude for which they deserve the highest praise.

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*Geschichte der Psychologie.* OTTO KLEMM. (No. VIII. of the Series, "Wissenschaft und Hypothese.") Leipzig and Berlin: B. G. Teubner. 1911. Pp. 387.

A general history of psychology, not limited to one period (like the work of Siebeck), nor to one nation (like that of Dessoir), certainly



answers a felt need, and such a history is here attempted in commendably brief compass. No limitation of scope is stated by the author, but it is evident that he does not attempt to do justice to the most recent period; otherwise he would scarcely have sketched the development of experimental psychology with no mention of the work on memory; nor the development of individual psychology with no mention of Galton nor of any other author from 1782 down to Stern. Had he seriously meant to trace the recent course of psychological discussion, he would probably have deemed James worthy of more than seven lines and Ebbinghaus of more than five, and found occasion to mention such names as Ward, Stout, etc. The references to recent work lack balance and perspective, and the history should properly be taken as ending at about 1870-1880.

The older history is rather attractively told. There is, indeed, little of the personal note; biographical facts are usually limited to dates. A knowledge of the history of philosophy is presupposed in the reader, for the development is here traced topic by topic, a very serviceable mode of presentation, though it leads to some disjointedness in the treatment of related topics, and to the omission of any consecutive account of the psychology of such men as Aristotle or Locke. The main headings under which the subject is treated are: metaphysical psychology, empirical psychology (the faculty psychology, the inner sense, the association psychology, Herbart's psychical mechanics, comparative psychology, and modern scientific psychology), fundamental concepts of psychology (definition of psychology, consciousness, classification of the contents of consciousness, psychological methods, psychical measurements), the most important theories (of sensation in general, of sight and hearing, of space perception, of feeling, and of will).

The value of the different sections will, of course, differ with the reader; to the reviewer one of the most instructive chapters was that on the faculty psychology. Probably every reader will find many pages for which he will thank the author.

Though the history of psychology, up to recent times, is closely bound up with the history of philosophy, the psychological importance of the several philosophers is by no means always proportional to their importance in metaphysics, and thus it happens that many an author who is passed over lightly in the histories of philosophy is worthy of considerable attention from the psychologist. Such were, to judge from the present book, Alcaban, Buridan, Vives, Bonnet, names unfamiliar to the psychologist, but deserving to be brought to his attention. A defect of the book in this regard is assuredly the almost complete neglect of the Scottish school, with the exception of Hamilton. The eighteenth and first half of the nineteenth centuries receive, on the whole, the most attention, and it is in regard to this period that the author's treatment is most valuable. Most of the psychological beginnings of the eighteenth century were, as the author says, submerged by the flood of critical and romantic philosophy; only the associationist psychology was saved by the continuity of British tradition.

Objections might be raised at several points to the author's historical

interpretations. His conception of the origin of empirical psychology is, for example (p. 45), that "inner perception first became aware of the greatest differences between complex experiences," and that the classes of experiences so separated were substantialized and made over into powers or forces; and so arose the conception of faculties of the soul, a conception which, in spite of its scientific deficiencies, "was yet suited in a high degree to portray the course of experiences as they presented themselves to primitive inner perception." It is improbable that the notion of faculties arose from inner observation, for when, in recent times, the attempt has been made to find the introspective differentiae of judgment, will, memory, imagination, etc., no obtrusive and characteristic differences have appeared. It is much more likely that the faculties were from the beginning functions, performances, modes of behavior, and that they were distinguished not by introspection, but in terms of their end-results, even as the faculties of nutrition and reproduction were distinguished. The faculty psychology was based on a teleological classification, and this was its deficiency, since, being contented to define mental performances by their end-results, it felt no need either for introspective description or for a causal mechanics of mental processes.

Again, it seems likely that in tracing the beginnings of modern scientific psychology back almost wholly to physiology and especially to German sense physiology, the author is guilty of a serious though common omission. Two other streams of influence have certainly been potent in producing the psychology of to-day. One is a biological influence, which, through Darwin and Galton, has given us our child and individual psychology, studies of mental heredity, of the correlation of abilities, etc. The other is a medical influence, very strong in French psychology, and probably traceable back to Charcot more than to any other one man. This influence, as every one knows, was potent in forming the psychology of James as well as of many living psychologists in all lands. Each of these two lines of study brought to psychology a wealth of empirical data as well as of problems and methods; and though both of them have been and still more will be indebted to the experimental psychology of Helmholtz, Fechner, and Wundt, yet the historian must recognize their independence as sources of the fruitful empirical movement.

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*Hegels Grundlinien der Philosophie des Rechts: mit den von Gans redigierten Zusätzen aus Hegels Vorlesungen.* Edited by GEORG LASSON. Leipsic: Felix Meiner. 1911. Pp. xcv + 380.

The present edition of Hegel's "Rechtsphilosophie" is without doubt the most satisfactory that has as yet appeared: indeed, it will probably take its place as the standard text of that work. The faultiness of Hegel's original text (1821) has always been apparent enough: its defects are probably due to the fact that Hegel never read the proof-sheets a second time, although he had indicated many corrections and additions upon the first proof which made a second scrutiny necessary. At any rate, the text



as it appeared was full of passages which have baffled the student and have been the vexation of translators. The only reconstruction of the text worth mentioning, during the ninety years since, is the well-known edition of Gans, appearing in 1833 and 1840, made familiar to English readers through the translation of Dyde. To be true, there is the edition of G. J. P. Bolland (1902), but this is based upon the Gans edition, and, while improving the text in a number of places, is hardly a critical attempt of a fundamental sort.

The present edition takes its point of departure, not from the Gans edition, but from the original text of 1821. The editor has attempted to clear this text of its obvious inconsistencies and unintelligible passages and to make it the most readable text possible. This he has achieved, first, by adding words where they seemed necessary to the sense probably intended, and secondly, where this device failed, by downright alterations in the sentence construction. These changes, as well as the variations from Gans and Bolland, are carefully noted in a table at the close of the volume. Where words have been merely added by the editor, they have been bracketed. Thus, the Hegelian text is still kept apparent—a care which Gans did not always observe, since he sometimes mingled added matter from the lecture-notes with the text itself, although he usually segregated them as addenda to the paragraphs they were meant to illumine.

The present text, then, is essentially a critical restoration. However, the lecture-notes of the Gans edition are included; only they are here gathered together in a separate portion of the book. In the original text, Hegel had given a number of references to passages in his "*Phänomenologie des Geistes*" and to the "*Encyclopädie*." These references, which Gans for the most part omitted, are reinstated.

The full and excellent introduction by the editor is especially commendable. Pastor Lasson is so well known as a sympathetic and patient student of Hegel, and has so clearly evinced his thorough scholarship in his editions of the "*Encyclopädie*" and of the "*Phänomenologie*" that one expects to find a luminous commentary in the first-hand analysis of the relation of Hegel's "*Rechtsphilosophie*" to his system as a whole. There is also a summary of Hegel's main positions in the book, as well as a section relating Hegel's views to the philosophic interpretation of history, in terms of the characteristic Hegelian conceptions.

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## JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. October, 1911. *Psychopathology of Every-day Life* (pp. 477-527): ERNEST JONES, M.D.—According to the interpretations worked out by Freud many of the abnormalities of every-day life are determined rather than accidental. Examples of forgetting, lapsus linguæ, lapsus calami, misprints, false

visual recognition, mislaying of objects, and symptomatic acts, are cited with their Freudian explanations. Some general observations on the scope, possibilities, and influence of this kind of observations are made. Modifications of the normal routine of mental activity come as a result of a counter-impulse or as a restraint to some tendency associated with it. *A Case of Colored Gustation* (pp. 528-539): JUNE F. DOWNEY. - A report of colored gustation like the more common instances of colored audition. The synesthetic factor is sensational in value. Often the color of the objects may enter into a fusion with their taste. *A Note on the Consciousness of Self* (pp. 540-552): E. B. TITCHENER. - Several subjects who had been trained in experimental introspection report concerning the consciousness of self. It appears that self-consciousness appears intermittently in many cases. *On Meaning and Understanding* (pp. 553-577): EDMUND JACOBSON. - The report of a study on the perception of letters, understanding of words and sentences by the report of what happens in a temporal order when certain stimuli are presented, also known as the Binet or Wurzburg method. *Minor Studies from the Psychological Laboratory of Vassar College. The Effect of Area on the Pleasantness of Color* (pp. 578-579): DOROTHY CLARK, MARY S. GOODELL and M. F. WASHBURN. - Preferences are indicated as follows: saturated colors, small areas with the exception of red, a large area for tints and shades. *Fluctuations in the Affective Value of Colors During Fixation for One Minute* (pp. 579-582): DOROTHY CRAWFORD and M. F. WASHBURN. - Associated ideas increase the pleasantness while adaptation seems to decrease it. *Imitation in Raccoons* (pp. 583-585): W. T. SHEPHERD. - The raccoon does not show inferential or a high type of imitation. *A Bibliography of the Scientific Writings of Wilhelm Wundt* (pp. 586-587): E. B. TITCHENER and L. R. GEISSLER. *Book Reviews*: W. Jerusalem, *Introduction to Philosophy*: W. H. SHELDON. Thomas Vernier Moore, *The Process of Abstraction*: W. F. BOOK. E. Toulouse et H. Pieron, *Technique de Psychologie expérimentale de Toulouse, Vaschide et Pieron*: E. B. T. *Book Notes* (pp. 600-604). *Subject Index. Names of Authors.*

REVUE DE MÉTAPHYSIQUE ET DE MORALE. November, 1911. *L'intuition philosophique* (pp. 809-827): H. BERGSON. - "To philosophize is a simple act" and the apparent complications of philosophies are superficial. While science seeks to obey nature in order to command, philosophy seeks to sympathize with nature. *La logique déductive* (pp. 828-883): A. PADUA. - An exposition of the latest thing in logical ideography. *La mobilité chimique* (pp. 884-903): A. JOB. - In modern chemistry the stable emerges from the unstable and the one is explained by the other. *Etudes critiques. L'incoordonnable*: A. LALANDE. *Variétés. Ve. Congrès international de Progrès religieux*: I. BENRUBI. *Tables des matières. Supplément.*

Bosanquet, Bernard. *The Principle of Individuality and Value. The Gifford Lectures for 1911.* London: The Macmillan Co. 1912. Pp. xxxvii + 409. \$3.25.



- Boutroux, Emile. William James. New York: Longmans, Green, & Co. 1912. Pp. vii + 126. \$1.00.
- Fouillée, Alfred. *La Pensée et Les Nouvelles Écoles Anti-Intellectualistes*. Paris: Librairie, Félix Alcan. 1911. Pp. xvi + 412. 7 Fr. 50.
- MacVannel, John Angus. *Outline of a Course in the Philosophy of Education*. New York: The Macmillan Co. 1912. Pp. ix + 207. \$ .90.
- Ward, James. *The Realm of Ends or Pluralism and Theism*. The Gifford Lectures delivered in the University of St. Andrews in the years 1907-10. New York: G. P. Putnam's Sons. Cambridge: University Press. 1911. Pp. xvi + 490. \$3.25.

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## NOTES AND NEWS

WE quote from an article in *Science* on "Pleistocene Man from Ipswich" by Professor George Grant MacCurdy, curator of the anthropological collection of the Peabody Museum of Natural History: "If the skeleton does not represent a burial and if the chalky sandy loam at this point is a part of the original mantel of boulder clay, then the man of Ipswich is the earliest yet found with the exception of *Homo heidelbergensis* (*Pithecanthropus* not being considered as *Homo*). It would correspond to the latest eolithic horizon, the so-called Mesvinian, and would thus be somewhat older than the man of Galley Hill, provided the latter is properly dated. But as I pointed out in a recent article there is room for doubt as to the age of the Galley Hill skeleton. From the foregoing account it would seem that the age of the Ipswich skeleton is also still an open question. The importance of having expert witnesses present at the disinterment in discoveries of this class was perhaps never better exemplified than at Galley Hill and Ipswich. Their absence will, it is feared, always leave the shadow of a doubt as to the age of the skeletons in question; and doubt is a serious handicap in matters of such scientific import. If both these specimens are correctly dated, then there lived as contemporaries in Europe for a long space of time two somatologically distinct races—a primitive type represented by the Mauer mandible, Neandertal, Spy, Chapelle-aux-Saints, La Quina, etc.; and a modern type represented by Ipswich, Galley Hill, and possibly Bury St. Edmunds."

THE Annual Meeting of the Western Philosophical Association was held at the University of Chicago on April 5 and 6. The following papers were read at the session on April 5: "The Genesis and Functions of the Ethical Ideal," Professor George T. Kern; "The Essentials of a First Course in Ethics," Professor G. D. Wolcott; "The New Individualism," Professor J. H. Tufts; "The Introductory Course in Ethics," Professor F. C. Sharp; "Some Points on Presentation," Professor J. H. Tufts; "The Content and Method of the First College Course in Ethics," Professor J. W. Hudson; "College Ethics for Freshmen," Professor B. C. Ewer; "Bergson and Pragmatism," Professor A. W. Moore. On April 6, there was a joint session with the Western Psychological Association at which the

following papers were read: "A Psychological Definition of Religion," Professor W. K. Wright; "Present Status of the Problem of the Relation between Mind and Matter," Professor Max Meyer; "The Two Theories of Consciousness in Bergson," Professor E. B. McGilvary; "The Mechanism of Social Consciousness," Professor G. H. Mead; "The Paradoxes of Pragmatism," Professor B. H. Bode; "The Interpretation of Reality," Professor W. H. Wright; "Cognition, Beauty, and Goodness," Professor H. M. Kallen; "German Pragmatism," Professor G. Jacoby.

IN a former issue of the JOURNAL it was stated that Professor Josiah Royce, of Harvard University, had been compelled to give up the course of Bross lectures on "The Source of Religious Insight." It should have been stated, however, that this course of lectures was given in full at Lake Forest College, Illinois, last November, and that the lectures are already in the press and are to be published shortly by Charles Scribner's Sons. They were to have been repeated by Professor Royce at Harvard, and it is only their repetition which has been abandoned for the present.

DR. W. V. D. BINGHAM, director of the psychological laboratory, and professor of psychology and education at Dartmouth College, has been appointed director of the Dartmouth Summer School, which is to be reorganized and incorporated as an integral part of the institution's scheme of education.

THE Rev. Casper René Gregory, professor of theology in the University of Leipzig, has concluded a special course of lectures at Western Reserve University. The lectures included a series of six on "Five Hundred Years of Science in Leipzig."

THE Kaiser Wilhelm professor at Columbia University for the academic year 1912-13, who is nominated by the Prussian Ministry of Public Instruction, will be Phelix Krüger, professor of psychology at the University of Halle.

GILBERT MURRAY, Regius Professor of Greek, Oxford University, will give a series of lectures at Columbia University on April 15, 19, and 22. His general subject will be "Three Stages in Greek Religion."

THE Section on Neurology and Psychiatry, of the New York Academy of Medicine, held a meeting on April 4. The subject under discussion was "Psychoanalysis."

DR. ARTHUR HOLMES, assistant professor of psychology at the University of Pennsylvania, has accepted the post of dean of the faculties of Pennsylvania State College.

PROFESSOR HERMAN HENDERSON, of the Wisconsin State Normal School at Milwaukee, will offer courses in the psychology of education at Oberlin College Summer School.

A NEW scientific review, *Bedrock*, was launched in England this month. It is to appear quarterly, and is to be edited by a committee of five members.

DR. WILLIAM WUNDT, professor of philosophy at Leipzig, has been made a knight of the Prussian order *pour le mérite*.



## THE JOURNAL OF PHILOSOPHY

### PSYCHOLOGY AND SCIENTIFIC METHODS

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#### IS THERE A COGNITIVE RELATION?

THE formal distinctions of epistemological theory are well worked out at the present time. All possible combinations of the terms of this discipline seem to have been discovered and championed. Each combination has points in its favor which awaken the sincere zeal of its champion. I wish to rise to a point of order. Have the postulates which lie back of these combinations been sufficiently examined? Is there, indeed, a cognitive relation either external or internal? I am of the opinion that there is no such relation. I shall now seek to justify and explain this opinion which seems, on the face of it, so revolutionary.

Theories of knowledge are, first of all, divisible into two classes, those which hold cognition to be somehow immediate and those which regard it as mediate. Theories of immediate cognition may, again, be divided into two subclasses. One subclass is idealistic and asserts that an internal relation exists between the object and the knower or subject. There are many slightly divergent forms of this position, but, in essentials, the above statement is not misleading. The second subclass is realistic and holds that an external relation exists between the object and the knower. By external is meant a relation which does not affect the object cognized. There are two current forms of this realistic subclass. The difference between them consists in their views of consciousness. The one considers it an *actus purus* externally related to the object; the other identifies it with the external relations supposed somehow to group objects selectively. Before we pass to a consideration of the mediate theories of cognition, let us ask ourselves what knowledge means for these realistic systems. Knowledge is the actual presence of reals. For the first view, consciousness in its relation to a thing accomplishes knowledge. The nature of the object is supposed to lie open to the mind and become subject to inspection. Things become transparent, as it were. Out of this peculiar relation, they are, for us, enveloped in darkness; in it, they stand in a glare of light.

Knowledge is a presenting, an introducing, an intuition. The second position is even more skeptical of the traditional views of mind than the first. The emphasis shifts from mind as a knower to the objects known. Knowledge is a grouping of these objects. The theory may be designated selective objectivism and cognition is the selection.

I wish now to call attention to a common characteristic of all these theories of immediate knowledge. *They assert a real cognitive relation, external or internal, between the knower and the object.* The only partial exception is the theory that tends to do away with the knower and to substitute a pan-objectivism. Even here, however, a real relation determines a grouping although it does not affect the nature of the objects grouped. Such epistemological hypotheses are statements of our actual experience in terms of logic—or, shall I say, in terms of mathematics? They are professed translations of natural realism. I suspect their correctness. What we actually have in cognition is an *attitude* towards objects considered real. Usually the attention is concentrated on the things and the attitude escapes notice. It lies in the background of consciousness. Even when it does attract attention, there is no experience of a cognitive relation between the individual and the thing. Awareness is simply an attitude towards things which is not supposed to affect them. Plans of action may come to mind and then the attitude becomes more complex; but always the objects retain their independence so far as awareness is concerned. It is, I believe, this character of cognition that makes realistic systems thinkable. *The cognitive attitude involves a dualism and suggests no relation, external or internal, to bridge it.* This is a description of natural realism as I see it. Cognition does not imply a cognitive relation.

Mediate theories of cognition are more complex than immediate theories. That fact is not necessarily in their favor. There are three important classes: the representative, the normative, and the pragmatic. Space forbids me to enter into the analysis which I have made of these. Suffice it to say that, in my opinion, they are all one-sided. But they emphasize some aspects of knowledge which must be borne in mind.

Pragmatism stresses the mediate character of the objects known. It points out their history, the reconstructions they have undergone. Knowledge is an achievement and "ideas" are instruments for this end. This doctrine is rightly considered by Moore to be idealistic in the strictest sense of that much-abused term. The mistake made by the pragmatist is to confuse the reflective attitude with the cognitive. He is so interested in the *use* of knowledge, its *criteria*, and the process of its achievement that he has overlooked the important stratifications and distinctions char-



acteristic of the cognitive attitude. We must thank the realist for his counterbalancing emphasis on them. The reflective attitude is, strictly speaking, precognitive.

The normative position brings us back from the *process* to the *act*. Its mistake is to misinterpret this act. It makes the object consciously depend on the "ought" of the subject. Here, again, there is a misreading of our actual experience. I repeat that the knower's attitude is one of acceptance of an object as being of such a character or as qualified in such a way. This attitude is modeled upon that of natural realism. It is dualistic and no cognitive relation is to be found in the experience.

The representative view is more complex. I shall not enter into the criticism which I must pass upon it. It is, however, the means of pointing out and stressing *the peculiar phenomenon of doubling that seems to telescope itself into the apparently simple act of cognition*. The distinction between thought, consciousness, idea, or concept and its object, which the human mind has been forced to postulate in order to account for error and for the mediate and personal character of the content of knowledge, as against the supposedly common and independent object known, is erected into a theory of knowledge. The real explanation of this distinction is entirely different. It results from a duplication of the cognitive object. This duplication is due to the conflict between the cognitive attitude and the facts which emphasize the personal character of the *objectivum*. For instance, the *objectivum* can be considered mental and dependent and, at the same time, physical and independent of mind as the cognitive attitude requires. It is assigned to two spheres of existence. The duplication of the cognitive object enables both motives to secure satisfaction. And they *must* both secure it. Hence even when we acknowledge the idealistic motives present in mediate theories of cognition, the structure of cognition remains dualistic.

It is interesting to hunt for indications of the twofold use of the cognitive object, as idea and as object, in philosophic literature. Unfortunately idealistic motives and outlook so dominated the thinkers who came nearest to its discovery that its significance was not grasped. A critical study of Hume (Treatise, I., III., 7), Kant ("Critique of Pure Reason," p. 483, Max Müller's translation) and James ("Psychology," Vol. II., p. 290) is illuminating from the present point of view. None of them does justice to the structure of cognition. Professor James substitutes a psychological explanation of cognition for the cognitive experience. He comes much nearer to a realization of the duplication in the article, "Does Consciousness Exist?," but makes it an affair merely of context. The tendency to emphasize the influence of feeling and interest in determining the

attitude and object of cognition is natural to a psychologist. The very term, belief, selected as descriptive of the cognitive attitude inevitably leads to an analysis of these subjective factors. It is but a short step from this to the consideration of the object as merely an "idea" and the meaning of the existence of the object its relation to the individual's mind. We noted, in the discussion given to the mediate theories of knowledge, a similar mistake on the part of the pragmatist. The latter seeks to neutralize this result by a denial that there are individual minds. The mediation which leads to cognition overshadows the cognitive structure and meanings and causes their neglect or misinterpretation. In the very interesting and suggestive note in his "Psychology"<sup>1</sup> James discusses the existential judgment and decides that the distinction between it and the attributive judgment is superficial. We might suggest that the reason is not that existential judgments are attributive, but that attributive judgments are implicitly existential. Let us examine his argument: "'The candle exists' is equivalent to, 'The candle is over there.' And this 'over there' means real space, space related to other reals. The proposition amounts to saying, 'The candle is in the same sphere with other reals.' It affirms of the candle a very concrete predicate, namely, this relation to other particular concrete things." (So far we would agree with his analysis.) "*Their* real existence, as we shall later see, resolves itself into their peculiar relation to ourselves. Existence is thus no substantive quality when we predicate it of an object." This emphasis on the subjective is apparent in another place: "Reality means simply relation to our emotional and active life" (p. 295). He apparently agrees with Hume and Kant whom he quotes with approval. We must ask ourselves this question: "Is not James confusing two standpoints?" A thing is considered real *when* it does touch us vitally, but is the meaning of reality or existence that of a *relation* to ourselves? Existence is a meaning, unique in character, which does not affect the content of the object. It is not a determinant in the attributive sense. But it does qualify the whole object and give it a place with other objects of its own class. Things toward which we take this attitude are considered *as real as ourselves*. In this James is right when he says, "The *pons et origo* of all reality, whether from the absolute or the practical point of view is thus subjective, is ourselves" (p. 296). But the relations which we suppose ourselves to establish with such things are not cognitive. Cognition is a means towards the establishment of practical relations, but is not itself thought of as a real relation. We may suppose that cognition is impossible unless we are in causal relation with things by means of

<sup>1</sup> Vol. II., page 290.



our bodies, but cognition itself means a duality of equally real objects in which one takes a peculiar attitude towards the other. The cognitive relation, so-called, is either an intellectual, logical addition assumed because it is scandalous to think of two terms without a relation between them, or else the reading into the cognitive attitude of genetic relations in the precognitive stage, or else the shadow of the causal relation supposed to exist between us and the object. The first of these mistakes is made by the logician, the second by the psychologist, and the third by the scientist. All three are wrong. When we perceive an object or think of it, we do not have as an essential element a relation between the object and ourselves as knowers.

If this interpretation of the structure of cognition is correct, important consequences flow from it. In the first place idealism is robbed of the defense which has sheltered it for so long against the attacks of realism. Who has not felt the exasperating, baffling power of the dictum that we can not think an object except in relation with a subject. This turns out to be merely a false rendition of the analytic proposition: We can not think of an object unless we think of it. Otherwise, the very nature of cognition is to recognize the independence and reality of the object. A peculiar, non-natural relation, such as the supposed cognitive relation, would be the very denial of such independence. It seems, then, that the subject-object relation is a dogma which has been an article of faith in the philosophic world. The nearest approach, hitherto, to heresy has been the doctrine of external relations. But such a doctrine is half-hearted. We need the complete and final heresy; *there is no cognitive relation*.

Were we to accept the view that cognition is immediate and is the presence of an object to a knower, we would be forced to hold some form of naïve realism. Once deny the existence of a cognitive relation, if such is the view of knowledge, and no other course is open. The presence of objects to a knower would make no difference to them. He would be a spectator in whose field of vision they would come and go as people in a thronged street pass before the eyes of a stranger who looks out upon them from a hotel window. If cognition is the actual presence of reals to consciousness, idealism is doomed.

But we have been led to acknowledge that cognition is mediate, not immediate. The idealistic motives, which the precognitive stage of reflective consciousness supports, are unaffected by the denial of the cognitive relation. The history of the material, the mediate or constructive character of the object, the fact of error, all induced us to refuse to acknowledge that the object present in cognition exists

apart from the individual's mind. These facts, stressed so emphatically by modern psychology and by pragmatism of the Dewey type, are the true defense of idealism. To what do they lead? We have claimed that they lead to a realism broadened by the inclusion of these idealistic motives and *with a new conception of knowledge*. Let us examine this more critical and indirect type of realism. There are many questions which it must answer satisfactorily if it is to justify itself.

There is one problem which will occur to the mind of the reader almost immediately. In cognition does the mind transcend itself? Hitherto those who have denied the possibility of such a transcendence of experience have been idealists. How can the mind pass through the gulf of reality and touch things? To those who hold an organic view of mind, such a feat seems self-contradictory. Even revelation must be somehow immanent and adapted to the understanding of the seer. The reply must be that such a transcendence is both thinkable and unthinkable. It is thinkable so long as we give attention to the cognitive attitude and its meanings. It is unthinkable when mind is regarded as a realm of constructs and feelings, when it is regarded as consciousness in the non-cognitive, generic sense of that word. Real existents can not mix with mind, and knowledge is not a possession. Let us examine both aspects which have been so much confused.

Transcendence is thinkable when we pay regard to the cognitive attitude and its meanings, for here the mind is a limited entity opposed to that which is known as regards both content and existence. Of course the objects known could be called a part of experience, but the victory resulting would be merely verbal. It would consist in so stating the problem that it would be meaningless. We must admit, then, that the cognitive attitude makes the transcendence of mind thinkable. So long as the mind can be opposed to that which it knows in cognition the transcendence of mind is conceivable because it is seemingly a fact. We have, however, acknowledged that the cognitive object does not exist apart from mind even though it demands such an existence. This peculiar contradiction led, as we saw, to the phenomenon of the duplication of the cognitive object as idea and as object. As a result of this doubling, mind is enlarged to satisfy the idealistic motives and at the same time is opposed to the object as an independent existent. Cognition continues dualistic and, hence, realistic in its structure and meanings. The transcendence of mind is, however, unthinkable when mind is regarded as a personal system of ideas.

The answer that critical realism must logically make to this first problem is evident. Knowledge does not involve an actual trans-



endence of the individual's mind, but it secures a reference beyond the individual's mind through the structure and meanings of the cognitive attitude.

What, then, is knowledge and what is the relation of the cognitive object in the individual's mind to the real whose existence cognition demands? Knowledge is an achievement of the individual's mind working in collaboration with other minds in a more or less conscious fashion. The methods and tests used are immanent and arise in large measure from the material. When a conclusion is arrived at it is objectified, *i. e.*, considered to exist as a quality, object, or relation in the sphere of existence presupposed by the nature of the domain investigated. When this domain is the physical world, the construction is considered entirely independent of the mind which has elaborated it. There are types of knowledge of the physical world which are functions of our interest and our point of view. The usual type results from a collaboration between things and man. We do not attempt to separate out our contribution. A landscape is beautiful. The *soft tones* and *harmonious outlines* are assigned to nature. Esthetic knowledge welcomes this collaboration. The scientific type is dominated by another ideal, to separate out and remove from things evidently subjective elements. In neither type is knowledge the actual presence of the *real* in the mind. In both, however, the reference is realistic.

We can turn now to the second part of the question under discussion. What is the relation of the cognitive object in the individual's mind to the real whose existence cognition demands? The answer is simple and presents a negative reply to the question propounded in the title of the article. In the case of physical reals there is no relation of a cognitive sort. The dualism of the cognitive attitude corresponds to an actual dualism. But a causal relation of however indirect a sort between the real and a mind is a presupposition of the possibility of knowledge. This fact is expressed by us in the causal relation assumed to connect percept and physical thing. This epistemological dualism is conceived by means of the duplication of the cognitive object into idea and thing between which no relation is supposed to exist. *The preposition, "of," in the phrase "idea of" is not symbolic of any actual relation, but of a distinction between two spheres with different characteristics.* These spheres are considered existentially distinct.

The second comprehensive question which should be asked of critical realism is the following: In what sense does it differ from the idealism of the critical, phenomenalist sort, from an up-to-date Kantianism, for instance? The difference lies not in the content of knowledge, not necessarily even in the methods and criteria, which

must be those of science, but in the reference of cognition and in the existential meanings connected with it. Idealism has entirely misinterpreted the cognitive attitude. *The Kantian phenomenon is the real as we are compelled to think it.* Kant's interest in the process by which knowledge is secured, together with his leaning towards a Leibnitzian metaphysics, obscured for him the realistic import of cognition. The phenomenon is the thing-in-itself as we think it.

The third question concerns the relation of individual minds to each other. Common sense and psychology hold that minds do not intersect. Critical realism agrees with this natural view and makes it comprehensible. Minds are microcosms whose boundaries are of their own making. Relatively to each other they live in a fourth dimension. But, since knowledge does not involve the actual presence of the real, this pluralism is no barrier to mutual knowledge. What is required is actual causal influence and this is obtained through the body. Knowledge of other minds is, for critical realism, not a whit more mysterious than knowledge of physical reals. Were minds disembodied, there would, indeed, be trouble. As it is, our information is interpretative and comes through the channel of organic activities and language. The cognitive reference and its mechanism is the same as for physical things. The knowledge of physical reals is, however, a means as well as an end in itself. This is seen in imitation and in the actual handling of things, or in pointing towards them to gain a common reference and understanding.

There are many questions which could be raised and discussed in connection with this subject, besides those which I have attempted to answer here. But it is only the general epistemological scheme which I wish to present. I may state, however, that the import of this position for the categories is uppermost in my mind.

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### "INVERSION"

CONSIDERING the contemptuous attitude of the average philosopher toward algebra of logic, it is amusing to see "logicians" quarreling about so simple a matter as "inversion." Whilst some maintain, and "prove," that it is unconditionally possible, Professor Hicks<sup>1</sup> as stoutly maintains, and "proves," that it is unconditionally impossible. The whole matter seems really a mere trifle; but the clearing up of the issue may be undertaken as a very simple exercise in the "calculus of classes."

<sup>1</sup> This JOURNAL, Vol. IX., pages 65 ff.



(a) *The Universal Affirmative*.—Question: From “all  $A$ ’s are  $B$ ” can we infer that “some not- $A$ ’s are not- $B$ ’s? Yes; *provided* “not- $B$ ” exists in the particular Universe of Discourse.

For

$$(A + A')B' = B'$$

or

$$AB' + A'B' = B'$$

and as

$$AB' = 0 \text{ (by hypothesis);}$$

$$\therefore A'B' = B'$$

and if

$$B' \neq 0$$

we obtain

$$A'B' \neq 0,$$

which is the required proposition. Note 1. If the “particular proposition” is taken to imply the existence of subject and predicate, we ought, of course, to add the second condition that not- $A$  also exists. Note 2. Whilst not- $B$  occurs in the first part of the proof, it is not necessary to assume its existence until we wish to make the final conclusion, which follows necessarily from the joint assertion:

$$AB' = 0 \text{ [all } A\text{'s are } B]$$

and

$$B' \neq 0 \text{ [not-} B \text{ exists].}$$

(b) *The Universal Negative*.—Question: From “no  $A$  is  $B$ ” can we infer that “some not- $A$  is  $B$ ”? Yes; *provided* “ $B$ ” exists in the particular Universe of Discourse.

For

$$(A + A')B = B$$

or

$$AB + A'B = B$$

and as

$$AB = 0 \text{ (by hypothesis);}$$

$$\therefore A'B = B$$

and if

$$B \neq 0$$

we obtain

$$A'B \neq 0,$$

which is the required proposition. Note 1. Same as above. Note 2.

Whilst "*B*" occurs in the proposition itself, its existence is not thereby required, i. e., if "*B*" does not exist, the proposition is "true" whatever *A*. But it is necessary to presuppose the existence of *B* in order to reach the particular proposition of the conclusion. Note 3. The "absurdities of inversion" mentioned by Professor Hicks (p. 67) all violate the condition:  $B \neq 0$ .

*Conclusion.*—"Inversion" is a valid process, *provided* the condition "not-*B* exists" (for the universal affirmative), "*B* exists" (for the universal negative) is satisfied in the particular Universe of Discourse. "Inversionists" are wrong if they hold that this process is always valid; and Professor Hicks, who concludes that "we must discard the whole lot" (p. 70) is wrong also.

KARL SCHMIDT.

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## SOCIETIES

### THE NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on Monday, February 26. The following papers were read at the meeting in the evening at the American Museum of Natural History. Afternoon and evening sessions are being planned for the next meeting on April 15. All those interested are invited to attend the meetings. The secretary will be glad to receive titles of papers which members or others may desire to present at the April meeting.

*The Influence of Narcotics on Physical and Mental Traits of Offspring:* J. E. HICKMAN.

The purpose of the study was to learn if the use of narcostimulants (tea, coffee, tobacco, and alcohol) had any effect on the offspring. The research extended over a period of four years. It included 306 families with 2,560 children; 620 of this number were students of Murdoch Academy, Utah. These were carefully measured by medical experts and teachers to get their physical and mental status. The measurements and examinations included height, weight, eyes, ears, nose, throat, teeth, heart, lungs, stomach, spleen, liver, kidneys, and nervous condition. A record of the death-rate in the families was obtained as well as a record of the student's intellectual standing. The students were divided into eight classes, according to the kinds and quality of stimulants used by the parents.

The examination showed: first, that there was on an average a



very decided difference between the offspring of abstainers and those of users, even where tea or coffee was used by only one parent, for the offspring of the abstainers were superior in size, intellect, and bodily condition to those of the caffein parents; secondly, as the use of caffein was increased by the parents, from once to three and four times a day, a gradual decrease in height, weight, bodily condition, etc., of the offspring was manifest; thirdly, in families where not only tea and coffee were used, but also tobacco, the children were still more inferior mentally and physically, increasingly so with the increase of caffein drinks in connection with tobacco; fourthly, where alcohol was used with the above narcostimulants the lowering of the physical and mental status was very marked.

Comparing all the offspring of the narcostimulant parents with those from abstaining parents, the latter were found to be better in all the 22 measurements than the former. Some of the differences were very great, especially in weight, height, eyes, ears, physical health, and rate of mortality. There are over 100 per cent. more eye, ear, and physical defects in the offspring of narco-parents. 72 per cent. more children died in this than in the abstaining class. 79 per cent. of the narcostimulant families had lost one or more children, while only 49 per cent. of the abstaining class had lost any children. It was also shown that the death-rate of the parents in this latter class was 41 per cent. higher than in the former. The research also brought out the fact that it took the offspring of the narcostimulant parent eight tenths of a year longer to graduate from the grades. In the Academy they were on an average a year and seven months older than the students from the abstaining class.

*Visual and Auditory Memory:* A. E. CHRISLIP.

Experiments have been carried on in the psychological laboratory of Columbia University and elsewhere for the purpose of comparing visual and auditory memory. The points investigated in the first experiment were to determine: the number of repetitions required by each sense to reproduce in a certain order certain total series of like construction; the average number of characters of a series recalled in their proper order for each repetition of series of like construction for each sense; and to determine, if possible, the best material for testing the two senses.

The material used consisted of numerals, nonsense syllables, and words. Series composed of 12 and 16 characters of each material were used in testing both senses.

The result shows that when series of 12 numerals similarly constructed were presented to the two senses, that out of 26 cases, 20 are visual, 8 auditory, and 8 show no difference. In the case of the series

of 16 numerals, 19 visual, 4 auditory, and 13 show no difference. With 12 nonsense syllables there are 15 visual and 15 auditory, the rest showing no difference, but for 16 nonsense syllables, 25 visual, 7 auditory, and 4 show no difference. With the 12 words there are 14 visual, 10 auditory, and 12 no difference; with 16 numerals, 22 visual, 9 auditory, and 5 show no difference.

For each repetition of each series the result shows that in the memory tests for visual reproduction the greater average number is reproduced. The nonsense syllables were the best material, as they offered few combinations or devices for memorizing them.

Experiments, in which stories of 100 words each have been used to test the two senses, have been carried on for some time. The two senses have been tested for both immediate and delayed recall. In both the immediate and the delayed reproductions the visual has been better than the auditory. There is an experiment now in operation in which the method is somewhat different from that in the former experiments conducted with logical material. While the results are not all determined the indications are that the auditory may surpass the visual.

*The Hereditary Transmission of Mental Traits:* HENRY H. GODDARD.

It is not the purpose at the present time to present any results, but rather to make some suggestions and point out possible lines of research in the hereditary transmission of mental traits which may be of interest to psychologists.

In connection with our studies of the cause of mental deficiency at the training school at Vineland, much material has been accumulated showing the hereditary transmission of deficiency. In connection with these data many facts have come to hand which make it clear that not only deficiency, but many positive traits are directly transmitted. It is further suggested that psychology would gain valuable data and contributions to many of its problems from a study of this question of heredity. Indeed, it seems quite possible that many problems which are now so complex as to elude our powers of analogy would be easily analyzed if we were able to study the heredity problem and thus eliminate the hereditary factor. For example, if the goodness of memory depends, as Professor James said, upon the natural retentiveness of the brain tissue plus the logical association that the individual establishes, then we may reasonably expect that the condition of the brain tissue may be a quality that is transmitted and could be eliminated through the study of mode of transmission: or, in other words, we could determine to what extent the differences in memory are due to acquired factors.

It would seem equally possible that sensory conditions may be



traced through families just as peculiar eyes or eye sight, peculiar hearing, kinesthetic sensations, taste, or smell may be dependent upon organic conditions which may be found to be directly transmitted. The inborn habits or instincts are so bound up with acquired habits that it makes a very complex problem. It seems quite possible that a study of the instinctive activities of members of different generations might reveal to us a good deal about the nature of instinct and its transmission which would have very important bearings upon many of our problems of instinct and emotions. Even the study of such a complex problem as the inheritance of mental deficiency may possibly yield us some most important results.

It seems hardly likely that mental deficiency is due to the absence of any *one* characteristic, but of several, and that it may be pictured more as though normal mentality is the result of a hundred factors of which a person must have, say, seventy-five in order to have what is called normal mentality. Now the twenty-five that are lacking may be any twenty-five, perhaps, in the whole list and a tracing of the hereditary traits might lead us eventually to determine some things about the resulting mentality when the missing factors belong to different groups.

We shall work on these problems at Vineland as rapidly as possible, but they should be studied in normal people as well. It is perhaps true that it would not be possible to go back farther than the living generations, but even so, if careful studies and tests were made of the mental traits in living persons, it would be possible to get the records of two and sometimes three generations, and these records could then be kept and supplemented as the years go by and the newer generations come on. There would thus be laid the basis for most valuable studies later on.

The family histories, that we have secured in connection with our children at Vineland, suggest two or three interesting questions. For instance, there are several families in which alcoholism is strong in several generations. It is possible that we have in these families an unusual appetite for alcohol, which appetite has been transmitted. It looks as though it would not be impossible to eliminate to quite an extent the environmental factor, and so be able to determine whether this was hereditary or not. The same is true of the sexual life. A great many charts show very much sexual immorality: and possibly here we may have, in some cases at least, an unusual development of the sex instinct which has broken over all bounds of conventionality and has shown in different generations. It appears that all of these problems are not only worthy of study, but might yield

most important results. The speaker then showed graphic charts illustrating the family histories of a number of families. These charts showed the strong inheritance of feeble-mindedness and also illustrated the points made in regard to alcohol and sexuality. Considerable discussion followed.

H. L. HOLLINGWORTH,  
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## REVIEWS AND ABSTRACTS OF LITERATURE

*Einleitung in die Philosophie.* HANS CORNELIUS. Zweite Auflage. Leipzig und Berlin: Druck und Verlag von B. G. Teubner. 1911. Pp. xv + 376.

The philosophic individuality of Cornelius is the synthesis of two apparently antagonistic modes of thought: it has been molded by the same tendencies that shaped the anti-metaphysical methodology of Mach; but—as Cornelius rightly insists (pp. 211, 343)—it bears not less clearly the stamp of Kant's transcendental logic. By regarding the *Einleitung* from this point of view—as an independent philosophic complement of Mach's positivism—we shall probably best succeed in fixing its place in contemporaneous literature.

Perhaps no living thinker has proved so baffling to professional philosophers as Ernst Mach; perhaps no one has to such extent evoked what I should call "the metaphysician's fallacy." For Mach's method of procedure is the method of the natural scientist: he investigates his problems, one by one, according to the peculiar conditions of the case, without regard to whether his conclusions fit into a preconceived system. It is but necessary for the critic to assume that such a system exists and nothing is easier than to prove inconsistencies. What Mach attempts, however, is not a system of philosophy, but a methodology. Those critics have never comprehended the trend of Mach's thinking who attach an exaggerated, quasi-metaphysical meaning to his "sensations" or "elements." For Mach, his elements are not absolute, but provisional units. Nor does he suppose for a moment, as even so friendly a critic as Dr. Carus assumes, that the elements are immediate data of consciousness.<sup>1</sup> The cardinal point lies in the definition of scientific endeavor as a progressive determination of the functional relations of the elements. For this definition at once eliminates as utterly idle all such concepts of popular philosophy as the *ego*, the *Ding an sich*, or the principle of causality, and thus constitutes the core of Mach's anti-metaphysical positivism.

This methodological standpoint alone does not, of course, account for the origin of these popular concepts and Mach himself has indicated that it is obligatory to investigate *what* functional relations of the immediate data necessitated these methodologically no longer valuable concepts.<sup>2</sup>

<sup>1</sup> "Erkenntnis und Irrtum," 1906, pages 12, 16.

<sup>2</sup> *Loc. cit.*, page 13.



This genetic inquiry, it must be admitted, Mach has rather suggested than undertaken in detail from a uniform psychological point of view. But in still another direction it was possible to supplement Mach's investigations. Mach rightly repels the criticism that his psychology ignores the spontaneous activity of the human mind; indeed, his emphasis of the principle of the economy of thought suffices to refute the accusation. Nevertheless, the formal peculiarities of Mach's presentation lend some color to the charge, and his definitions of consciousness might be misinterpreted by prejudiced critics as a relapse into atomistic and passivistic psychologizing.

No such misinterpretation would be possible in the case of Cornelius. In the center of his philosophy stands Mach's principle of the economy of thought, which is, however, at once recognized as but another expression of the unity of consciousness. This principle explains at the same time the efforts of prescientific thought, the historical attempts at metaphysical unification, and the scientific striving for a view of the universe. The weakness of primitive and of metaphysical speculation lies in the fact that both make uncritical employment of traditional, popular ("naturalistic") concepts. The investigation of the legitimacy of these concepts, that is, of their origin and empirical meaning—such as the concepts of the persistent external world, of the reality of space and time, of causality, and of the ego—coincides with the coming of age of philosophy, its transition from dogmatism into empiricism, from the metaphysical into the epistemological stage. The naturalistic concepts lead to problems insoluble, not from any deficiency of the human intellect, but because of the erroneous assumptions involved in their formulation (*Scheinprobleme*). These stumbling-blocks can be removed only by a general inquiry into the mechanism of thought, by a natural history of human thought. Such an investigation will not aim at a purely destructive annihilation of the popular view of the world, but at a genetic understanding of that view and its clarification through the elimination of dogmatic elements. It must indeed be idealistic in the sense that it will proceed from the data of consciousness, which alone furnish the material for the structure and the totality of factors for the development of our world-view. Instead of denying, however, the existence of an objective world, it will merely attempt to show from what facts this concept is derived and thus determine its purely empirical significance. Cornelius's epistemology is thus emphatically psychologistic, not in the sense of resting on special *theories* of psychic phenomena, but in the sense in which all epistemology, tacitly or explicitly, must be psychologistic—in being based on an unprejudiced analysis and description of the immediate *facts* of consciousness (pp. 55 f.). And here what at once distinguishes Cornelius's psychology from an atomistic view is his emphatic and never-ceasing consideration of "*die Factoren des Zusammenhangs der Erfahrung*"—those factors which Höffding has conveniently included under the concept of the formal unity of consciousness.<sup>3</sup>

Cornelius begins his inquiry with a consideration of the psychological

<sup>3</sup> "Psychologie in Umrissen," page 186.

theories developed by the English thinkers of the seventeenth and eighteenth centuries. This naturally leads to a critique which merely expresses the general consensus of modern psychologists as to the failure of the association theory to account for the distinctively synthetic peculiarity of consciousness (pp. 196 ff.). It is the faulty psychology of the associationist school that resulted in the skeptical conclusions of their philosophy; for a theory which from the start limits our knowledge to isolated, momentary perceptions, impressions, and ideas, can not arrive at a positive theory of generally valid knowledge (p. 208).

The way to correct Hume's philosophy, therefore, is to correct the faults of his psychology. What we actually find in consciousness is not a mere sum of unrelated impressions and ideas out of which our experience shapes itself by virtue of the laws of association, but a unified whole. The point is to ascertain those facts which may be noted in any period of consciousness over and above the isolated elements of experience. The first synthetic factor described by Cornelius produces the recognition of a definite part of the stream of consciousness as marked off from its surroundings. A second factor connecting the otherwise isolated elements of experience is the symbolic function of memory images. By means of this function we transcend the limitations of the present moment and form an idea of a past experience as a past experience. A third factor enables us to classify every new sensation and complex of sensations, to recognize it as similar to previous experiences or complexes of experiences. These synthetic factors correspond to Kant's synthesis of "intuitive apprehension," "ideational reproduction," and "conceptual recognition," and in Kant's deduction of the categories of the understanding from the unity of consciousness Cornelius recognizes the historically first attempt in his own direction (p. 228).

Without the facts conditioned by the synthetic factors, a unified experience would be impossible. They determine the most general laws of conscious phenomena—among them the recollection and recognition of complexes. All our experiences are parts of complexes, and are remembered as parts of complexes. The law of association by contiguity is a special instance of the general law that every experience (*Erlebnis*) is merely part of a larger complex (p. 234). Similarly, the law of association by similarity is merely an expression of the same principle: we do not merely recollect a past experience similar to a present one, but also distinguish it as past by recalling at the same time the associated elements of the past complex. Both laws are not, as might be supposed on the basis of the old associationist school, alien forces regulating the course of conscious states, but laws immanent in all consciousness—consequences of those factors without which even the simplest case of unified consciousness would be inconceivable (pp. 207, 236 f.). Cornelius's account of these laws thus recalls that of Höffding, who similarly views association as but a special form of synthesis.<sup>4</sup>

Having enumerated the synthetic factors and their consequences,

<sup>4</sup> *Loc. cit.*, page 219.



Cornelius turns to the problem of the development of our concepts and judgments through these factors. In the assimilation of any new experience, we proceed in one of two ways. We either confine ourselves to classifying it as similar with certain previous experiences; or, we step beyond the mere classification of our experience and infer that it forms part of a complex of other experiences. The concepts formed in these ways Cornelius describes as falling into two distinct categories: perceptual concepts (*Wahrnehmungsbegriffe*) and experiential concepts (*Erfahrungsbegriffe*). To subsume a given portion of my visual field under the perceptual concept "whiteness" is one thing; to infer, beyond the immediate data, that whiteness represents "white chalk" constitutes the quite different step of subsuming under an experiential concept. The second process always takes place when we refer an impression to a persistent object.

For the explanation of the development of our knowledge Cornelius introduces the concept of "configuration," *Gestaltqualität*. By this he understands those characteristics which define a complex as a complex, that is, as different from a mere summation of its elements. The significance of this concept results from the fact that all the contents of our consciousness are parts of complexes and as such possess relation—fringes due to the configuration of their complexes. Among the concepts of complex-characteristics there are some relating to the modes of connection of our experiences in so far as these modes have their foundation in the unity of consciousness. As every one of our experiences must be connected with other experiences in these particular ways, these "relation-concepts" are applicable to all experience, and the judgments based on them are necessarily valid for all possible experience, regardless of the nature of the contents of the experiences. Borrowing Kant's term, Cornelius accordingly refers to these concepts as general modes of intuition. From these he eliminates Kant's spatial mode, first, because haptic and optic space are not immediately connected as parts of the same space and are not three-dimensional; secondly, because even in the field of sensation, sounds are arranged without spatial order, while the same applies to the relations of sensations to memory images, or of sensations, judgments, and feelings (pp. 252 f.). On the other hand, Cornelius includes among his modes of intuition not only time, but also the concepts of totality and partiality, unity and plurality, similarity and equality, constancy and mutability, as well as the direction of the changes.

This grouping suggests Ebbinghaus's treatment of the same intuitions as "the general attributes of sensations." Cornelius's discussion of this subject is probably the least satisfactory portion of his work. There is no serious attempt to justify the coordination of the other modes of intuition with that of time. It is perfectly true, for example, that the concept of similarity is applied to every possible experience in the sense that every experience is classified with reference to its resemblance to previous experiences—that the apprehension of similarity may be described as merely an expression of the unity of consciousness. But this immediate classi-

fication does not involve the construction of a continuum in which "*alles Mannigfaltige der Erscheinungen in gewissen Verhältnissen angeschauet wird.*" While time is, in Höffding's phrase, a typical individual idea, all the several times experienced being but parts of the same time, this does not apply at all to similarity. In a previous section (p. 245) Cornelius himself very clearly distinguishes between similarity as an immediate datum of consciousness and the abstract concept of similarity. The abstract concept of similarity naturally comprises as a concept all possible special cases of similarity; but of course it is not present in all conscious phenomena. The apprehension of similarity, on the other hand, is indeed coextensive with consciousness, but each such apprehension is distinct from every other, and consequently it is not justifiable to speak of similarity as a general mode of intuition. So far as the exclusion of space from the universal modes of intuition is concerned, Cornelius's reasons—quite irrespective of the justice of his conclusions—can not be considered satisfactory. In limiting psychological space to two dimensions, the author certainly finds himself in excellent company, but an indication that other views are held would have been in place in a treatment which allegedly rests on the facts rather than the special theories of psychology. The same criticism applies to the denial of spatial quality to sensations of tone. If a psychologist like Wundt insists that we can not hear tones without localization,<sup>8</sup> such opinions can not be disregarded without some critical discussion. It would have been better and fairer to explain on what psychological assumptions space could not be regarded as a universal mode, and under what assumptions it *must* be regarded in this light.

Having disposed of the purely classificatory perceptual concepts, Cornelius turns to the second category of experiential concepts. We continually complement the given perceptions by referring them to constant objects, that is, by associating them with characteristics not immediately given to us, which is equivalent to associating them with possible *future* experiences. It is the synthetic character of consciousness that leads us to view every experience as a member of a complex. Our expectations as to the experiences linked with a given experience are defined in some measure by the knowledge that it has hitherto appeared only in a certain definite series. If an initial member common to several known series is linked with final members varying with intermediate members, the latter are recognized as *conditions* of the final links and determine the nature of our expectations. The complementary activity which forms experiential concepts and explains isolated phenomena by connecting them with others is nothing but a *résumé* of our past experience and the expectation of future events in accordance with the past. The shorthand description of experience synonymous with the application of the principle of economy of thought is also identical with the formation of experiential concepts (p. 263). As the concept of a constant object implies nothing but the sum-total of its constant properties, what applies to the latter also applies

<sup>8</sup> "Ohne irgendeine Lokalisation können wir auch Töne nicht hören." In "Was soll uns Kant nicht sein?" *Kleine Schriften*, 1910, I., page 160.



to the former: it expresses nothing but a series of definitely connected phenomena. To attribute reality to an object regardless of our perception of it simply means, as Hume failed to notice, that we connect our *varying* percepts with the *same* context of other percepts of the object. Kant correctly explained the belief in the reality of objects, but failed to note that in so doing he had already explained that constant which an earlier philosophy postulated as an unknowable noumenon. By supposing that objects, as complexes of phenomena, must be phenomena of something else—of an ever transcendent *Ding an sich*—Kant relapsed into naturalistic philosophy (p. 277). The opposition thus engendered between noumena and phenomena is quite illusory. The foregoing considerations immediately eliminate two supposed problems which have disturbed the philosophers of many ages as to the connection between subject and object (*"Vermittlungsprobleme"*). As the concept of reality is constructed solely out of our subjective data, the problem how we can recognize the objective world despite the subjective conditions of our knowledge disappears, because it is seen to invert the actual conditions of the case. On the other hand, there also disappears the impassable barrier between the physical and the psychical world which is inevitably encountered on the dogmatic assumption of objective reality. As Cornelius puts it: *"zu fragen, wie es komme, dass das Ding durch die Sinnesorgane auf unser Bewusstsein wirke, heisst also soviel als fragen, wie es komme, dass der gesetzmässige Zusammenhang unserer Sinneswahrnehmungen, welchen wir erfahrungsmässig erkannt und in bestimmter Weise bezeichnet haben, wirklich eben dieser Zusammenhang unserer Wahrnehmungen ist"* (p. 280).

Cornelius fully recognizes that his investigation of the mechanism of concept-formation is purely psychological. Accordingly he now turns to the logical question of the validity of our concepts and judgments. After briefly sketching the psychology of the confirmation or repudiation of specific judgments, he arrives at the conclusion that judgments are of general validity only if the conditions defined in their formulation themselves determine quite generally the nature of the experiences to be observed under those conditions. This is true of analytical judgments; and also of the synthetic judgments resting on Cornelius's first category of concepts (*Wahrnehmungsbegriffe*), for the "knowledge of acquaintance" with any phenomenon that can be subsumed under a perceptual concept completely exhausts the possibilities of such a phenomenon. That spectral green resembles blue more closely than red is not an analytic judgment, because it does not follow from the definition of "green"; nevertheless it is a statement of universal validity. This is not true of the experiential judgments, of our "laws of nature," for the observation of innumerable past experiences does not seem to establish the validity of a prophecy as to future experiences of a similar character. Observations contrary to past experience disturb our mental equilibrium, which can be readjusted only by bringing both the ordinary observation and the deviations from it under a common law. This is done by correlating the usual experience with a formerly unnoticed condition, a change in which results in a dif-

ferent experience; in such cases we speak of the *cause* of the changed result. The principle of causality thus embodies merely the demand—indispensable for the unity of our experience—that all phenomena shall be arranged in constant empirical combinations. Accordingly, this principle has absolute validity and likewise defines the validity of our experiential laws: they are valid in so far as a hitherto unobserved cause does not produce an alteration. The category of causality is thus founded in the synthetic factors of consciousness (pp. 297–307).

There remains to be explained the naturalistic concept of the ego. As we distinguish from the varying perceptions of an object the *persistent* object of the external world, so we develop the concept of a permanent ego as opposed to the flux of conscious phenomena. As in the former case, Cornelius identifies the concept of a persistent reality with the formation of concepts of his second category. Any single state of consciousness is found in a definite connection with past states of consciousness, not immediately experienced, but in some measure determining it. These definite connections constitute the constant factors of our personality and may be described as “unconscious psychic facts,” provided this phrase is taken merely as an abbreviated designation for definite, regular combinations of conscious phenomena, just as the concept of an objective thing is used merely to denote a definite connection of phenomena (pp. 314 f.).

The subject of the ego naturally leads the author to consider two related problems—the relation of mind and body and the knowledge of alien consciousness. On both these questions Cornelius develops views of extraordinary sanity. The solipsistic view can not be refuted, because the direct experience of alien conscious states is forever precluded. On the other hand, the association of certain outward manifestations with consciousness is in consonance with the scientific, as well as prescientific, application of the principle of the economy of thought. Further, it is not a metaphysical association, because the concept of alien consciousness, being patterned on our own, does not transcend experience (pp. 329–332). With regard to the relation of mind and body, Cornelius admits psychophysical parallelism for sensations; “*weil die physischen Vorgänge ihrem Begriffe nach nichts Anderes sind, als die gesetzmässigen Zusammenhänge, denen wir unsere Empfindungen einordnen*” (p. 319). But it is not true that the parallelism of ideation and of physiological processes is an empirical fact. An analysis of the psychophysiology of the reflex arc leads to the result that while central nervous paths are intermediaries of sensation and movement, there is nothing to prove that they correspond to the psychological act of association following the sensation. Pathological cases are likewise inadequate to prove the point. So far as brain disease is not definitely observed, the assumption that a psychic derangement is necessarily due to a cerebral anomaly is a pure dogma. But, even when an affection of the brain is definitely ascertained, it might be supposed that the disease conditions an alteration of the *sensation* rather than of the relevant associations. Which of these views represents the facts can not be determined, and accordingly the general question whether psycho-



physical parallelism holds for psychic facts beyond sensations and feelings remains unsolved. That the course of ideation depends on sensations and is thus indirectly conditioned by physiological processes, is readily admitted (pp. 326-328). The constant factors of psychic life are by definition independent of physiological alterations. This does not mean that the course of ideation is similarly independent, for those constant factors are precisely what the stream of ideas (*Vorstellungsablauf*) does not consist in. Accordingly, Cornelius infers from the independence of the constant factors that psychic life does not necessarily disappear with its physiological substratum. Inasmuch, on the other hand, as the constant factors are not themselves conscious experiences, but only conditions of such, it is equally inadmissible to infer the persistence of psychic life after death from the constancy of those factors. This argument is not particularly cogent. The constant factors are conditions, but they are not fully determining conditions, of consciousness. Psychic life involves a stream of ideas admittedly dependent—though only indirectly—on physiological conditions. The cessation of these conditions, it would seem, must necessarily result in a cessation of conscious phenomena. Indeed, if the constant “unconscious” factors are nothing but our experiences as to definite combinations of conscious phenomena, if consciousness is unthinkable without feelings, and the latter are admittedly dependent on physical conditions (p. 319), it is not at all clear how consciousness could survive death.

The “empiricist picture of the universe” sketched by Cornelius towards the close of his book (pp. 332-348) has already been sufficiently indicated in the preceding pages. The recognition of all our laws as merely abbreviated expressions for our experiences eliminates all the illusory problems based on the uncritical assumption of the naturalistic concepts. Thus, Kant’s first antinomy is now found to rest on the naturalistic concept of the universe as an immediate datum of knowledge. If we conceive the world merely as a résumé of our experiences, its existence can not extend beyond the ordering of our experiences in accordance with the categories of our thinking, and instead of regarding it as infinite, we can state only that our increasing experience is nowhere hemmed in by any limits. This position eliminates the possibility of satisfying the metaphysical demand for a unification of the entire universe, for our intellectual machinery, the categories, are by virtue of their significance applicable only to the fractional components of our experience, not to a complete “unit” beyond experience. There is only one case in which we have scientific knowledge transcending a determination of parts—the knowledge of the fundamental unity of our consciousness which differs from all our fractional experiences in appearing not as a manifold, but as an immediately unified reality.

In the opening paragraphs of this article the philosophical position of Cornelius has already been indicated. The foregoing summary, it is to be hoped, has convinced the reader that we here have to deal with a solid attempt to grapple with philosophic concepts. Cornelius’s attempt is not a

final solution of the philosophical problem from a positivistic standpoint, because that very standpoint precludes a final solution. For positivism demands a philosophy that shall deal with particular philosophic concepts and problems, as every science deals with *its* problems. No sane scientist denies that each of his problems admits of indefinitely more profound investigation, and in precisely the degree in which philosophers will attack their specific problems in the same spirit they will rehabilitate their scientific standing. With regard to Cornelius it has been indicated that several of his analyses do not seem to attain to the relative degree of profundity that might have been expected. But viewed as a whole, and more particularly as contrasted both with the reactionary scientism now invading philosophical literature and with the crudities of much *soi-disant* positivism, his epistemology constitutes a landmark in the transition to a philosophy of the future that will be at once uncompromisingly radical and unassailably critical.

ROBERT H. LOWIE.

AMERICAN MUSEUM OF NATURAL HISTORY.

*Experiments in Educational Psychology.* DANIEL STARCH. New York: The Macmillan Company. 1911. Pp. vii + 183.

Two questions arise in the consideration of this work. First, what is its value in relation to other books in the same field? Second, what is the value of this method of approach to the problems of education: does it bring new insight or does it complicate the situation?

Dr. Starch has brought together some valuable materials which must prove very stimulating to the teachers who are able to grasp them. He gives experimental methods for testing in concrete ways the facts of individual differences, the obstacles to learning which result from defective sensation channels, the place of mental imagery in the processes of learning and knowledge, the place of "trial and error" in experience, the progress of habit-building, the actualities in "formal discipline," the facts of "association," the nature of the apperceptive processes, the methods and laws of attention, the values of memory in learning, and the vital relationships of work and fatigue. All these things are real factors in the equipment of the teacher, and the teacher can not know too much about them. Any work which attempts to make clear these fundamental elements in mental development must be welcomed, and it must be said that Dr. Starch has organized his materials in such a way as to make them very interesting to the teacher of educational psychology, and, rightly interpreted, to the average teacher.

But there is another side to the matter, as indicated by the second question. Experimental education has been going its own way in the last few years, and a rather curious way it is, too. Education, as a whole process, is becoming more socially minded; we are being told that it is essentially a social movement, growing out of social pressures and leading into social programs, both for the child and the race. From this point of view "only social psychology is of primary importance for education." On the other hand, experimental education seeks to isolate certain mental



operations for special study. The very processes of isolation tend to exclude the social element; but this elimination of the social automatically eliminates the ideational, also, since the ideational element arose in experience to mediate the social world and has no reason for existence when the social is gone. The net result of these exclusions in the experimental laboratory is the reduction of the learner to a piece of psychophysical machinery, and the interest of the experimenter centers in the reactions which the machine makes to a series of organized stimuli. The very make-up of Dr. Starch's book is determined by these demands. The "observer" must get no hints as to what is coming next: hence, many pages must be left blank, etc. Now, when the book is read in this light it is seen that provision is made, not for the study of those subjects noted above, but for the study of the following items: the individual differences of nervous systems, characteristic defects of sensation mechanisms, persistence of sense impressions, constructive processes on the higher and lower neural levels, the spread of constructive cerebral processes beyond their local field, the development of intracerebral relations, cerebral reconstructions, the persistence of neural energies and cerebral processes, and the rise, fall, and renewal of neural energies. That is to say, experimental education, as represented by this work, devotes itself to the study of a mechanism under conditions that exclude the presence of the most persistent stimuli, and therefore, the most characteristic reactions, of the actual school situations. A very serious problem is thus raised as to how the student can get these abstract results back into the social world where the actual processes of education go on.

Yet there is no fundamental contradiction between this work of the educational experimentalist and that social psychology of the concrete educational processes demanded by the rising tide of educational inquiry. Social psychology seeks experimental determinations of processes of development and interaction that lie within the fields of social action. And the social psychology of education needs just such studies as this we are considering. But does this laboratory education feel the need of a social setting for its real experiments? And can this laboratory work find its way back into the concrete educational situation? This book deals with problems that have arisen in the life of the school; the problems have been abstracted for special investigation: should not a chapter have been added to the book showing how these problems have arisen, and may arise, and how the results can be reinterpreted into the actual educational situations, where they can be of real value to the teacher? If a laboratory manual is to have proper use, even by the average laboratory instructor, it must clearly relate itself to the concrete problems out of which it arose and into which its results must go.

We need more work of this kind: but the experimentalist in the field of education must be ready to relate his problems and his results to the demands of the concrete educational processes as these are being interpreted by social psychology if his work is to have fundamental value for education.

JOSEPH K. HART.

*The American Philosophy Pragmatism.* A. v. C. P. HUIZINGA. Boston: Sherman, French, & Co. Pp. v + 64.

This is a curiously written and poorly arranged attack upon a current mode of thought. Disentangled, it consists of this fourfold root: a small amount of information upon pragmatism as an American philosophy; a large mass of quotations from the enemy; several popular diatribes from a conservative point of view; and a few suggestive notes as to the relations of this latter-day movement to German idealism.

The assumption that pragmatism is *the* American philosophy comes in the middle, not the beginning of this sketch. "Professor" McCosh is said to have wished for a specific American, a national philosophy, but little anticipated the speedy realization of his desire in the specifically American *Wellanschauung* pragmatism. This is an error. What President McCosh wished, and the wish was father to the thought, was that his own natural realism, the Scotch common sense, might become the system of his adopted country. The rest of this sketch is filled with like misinformation. Thus it is alleged that pragmatism neglects the theory of knowledge and of reality; that as the apotheosis of the evolutionary dogma it has irreverence for its mainspring; that as a doctrine of hustling activity it is opposed to "contemplating" wisdom, and so falls in with Kipling's description of the predominant American trait of disregard for knowledge and law in the face of the supreme commands of "the instant need of things." These diatribes have their extreme form in a preface which claims that the point at issue is a denial of the supernatural, a discarding of the notion of being, a revolt against all tradition, authority, and unity, and all regulative norms and law.

Such is poor pragmatism from the negative side. What it is positively its opponent finds hard to say. In one place, he holds that it argues pluralism or polytheism "against our monotheistic belief." In another, that it is a scheme of pantheistic, evolutionary monism. This brings us to the fourth and only valuable point in the essay—the attempt to connect pragmatism with German idealism of a previous generation. By his frequent use of good German and faulty French the author discloses a certain Teutonic facility in his exposition of "this pantheism of an all-pervading *Zielstrebigkeit*." Pragmatism, he suggests, in a blind sort of way, is akin to Fichte's teaching that things in themselves are as we have to make them, "that the ego limits itself in order to overcome the limitation, that the theoretical is only in behalf of the practical"; in short, he teaches the duty of unremitting exertion, and this duty, it is easily seen, appeals to people who have work to do. In connecting the *Vocation of Man* with the demand for the strenuous life Huizinga has hit on a probable connecting link between primitive pragmatism and the St. Louis School. He does not say so definitely, but it may well be that the revolutionary refugees of '48 through their personal beliefs and through such a German-American organ as the *Journal of Speculative Philosophy*, prepared the way for the rapid spread of pragmatism in the middle west. This is a suggestion as to what the writer might have done in tracing



possible sources of the movement. However, he makes no such exact connection, but leaves us with only vague analogies between the Yankee "Let us still be up and doing" and the theme of Faust that "the ever-active, striving soul works out his own salvation."

Although he is able to point out these German-American affinities, the author has no sympathy with them. His conclusion appears to be that pragmatism is a scheme of pantheistic, evolutionary monism, totally antipathetic to readers of the *Bibliotheca Sacra* for whom this essay was written. Indeed, pragmatism seems to fulfill the boast that the dangerous movement of Ritschlian valuation-theology would carry the Anglo-Saxon world in one generation. And yet in vindication of the old school, and against the charge that it is no longer adequate to the present needs, he contends that it *is* adequate, since it affirms that thought not only reveals reality, but is a unique mode of reality itself. In this conclusion the anti-pragmatist has reached the third stage portrayed by James—first scorn, then tolerance, lastly adjustment of the old to the new way of thinking.

We might dismiss this sketch by saying that it is an essay with wide margins but a narrow outlook. It contains, however, several excellences. One is in pointing out the affinity between pragmatism and the Ritschlian motto "Religion without Metaphysics"; another is in showing that pragmatism is an epistemological result of the doctrine of evolution; a third is in coining certain phrases which might be used as effective watchwords by radical pragmatists. Such phrases are "being is disclosed in the doing"; and "We are no more searching for truth, we are engaged in making it."

I. WOODBRIDGE RILEY.

VASSAR COLLEGE.

## JOURNALS AND NEW BOOKS

RIVISTA DI FILOSOFIA NEO-SCOLASTICA. October, 1911. *Lo studio sperimentale del pensiero e della volontà* (pp. 494-504): A. GEMELLI. — From a series of experiments performed by Bühler and other German psychologists, there can be demonstrated the autonomy of psychological activity and the essential distinction between thought and phantasm. *Essenza ed esistenza* (pp. 505-525): G. MATTIUSI, S.J. — In the divine nature, essence and existence are identical; in finite beings, on the other hand, there is a real distinction between essence and existence. *Sigieri di Brabante nella Divina Commedia e le fonti della filosofia di Dante* (pp. 526-545): BRUNO NARDI. — The Dantean cosmology appears as a fusion of Avicenna's peripateticism with the cosmological ideas of the Augustinian school. *Note e Discussioni. Tribuna libera. Analisi d'opere.* A. Pastore, *Dell' essere e del conoscere*: A. CUSCHIERI. Michotte-Prüm, *Etude expérimentale sur le choix volontaire et ses antécédents immédiats*: ARCANGELO GALLI. G. Amendola, *La volontà e il bene*: G. TREDICI. G. Allievo, *G. G. Rousseau filosofo e pedagoga*: M. BRUSADELLI. De Dominicis, *Scienza comparata dell' educazione*: L. VENTURA. *Note bibliografiche. Sommario ideologico delle opere e delle riviste di filosofia.*

REVUE NÉO-SCOLASTIQUE DE PHILOSOPHIE. November, 1911. *Les perplexités du Philèbe* (pp. 457-478): ANDRÉ BREMOND. - Plato's dialogues, although great and inspiring, often lack in logical sequence and force of reasoning. *Le libre arbitre et les lois sociologiques d'après Quetelet* (pp. 479-515): J. LOTTIN. - Quetelet never defended the thesis of the determinism of the individual will; he believed in social determinism, which he carefully distinguished from fatalism. *Le traité "De esse et essentia" de Thierry de Fribourg* (pp. 516-536): DR. KREBS. - Text of Thierry's "De Esse et Essentia," published for the first time from a manuscript of the Vatican library. *Le néo-dogmatisme* (pp. 537-563): L. DU ROUSSAUX. - The type of neo-dogmatism born among certain Scholastics from the influence of Kantian criticism is decidedly inferior to the old, traditional dogmatism. *A propos des conditions philosophiques de l'évolution* (pp. 564-588): A. BOUYSSONIE. - A criticism of Le Guichaoua's theory of causality in evolution. Le Guichaoua's answer. *Comptes rendus*. H. de Jongh, *L'ancienne faculté de théologie de Louvain au premier siècle de son existence*: J. LOTTIN. A. Fouillée, *La pensée et les nouvelles écoles antiintellectualistes*: J. HENRY. G. Surlé, *La Volonté*: F. PALHORIÈS. J. Mausbach, *Grundlage und Ausbildung des Charakters nach dem hl. Thomas von Aquin*: F. PALHORIÈS. Zaragüeta, *El problema del alma ante la psicología experimental*: A. F. E. BOYD BARRETT, S.J., *Motive-force and Motivation-tracks, a Research in Will Psychology*: A. F. O. HABERT, *La religion de la Grèce antique*: A. MANSION. L. Jeudon, *La morale de l'honneur*: A. MOUSTIERS. *Sommaire idéologique des ouvrages et revues de philosophie*.

THE PHILOSOPHICAL REVIEW. November, 1911. *German Philosophy in 1910* (pp. 589-609): OSCAR EWALD. - The development of German philosophy in 1910 represents no divergence from the lines which it has followed during recent years. The era of critical idealism is still in the ascendent. The chief writers are mentioned, their principal works cited, with brief accounts of and comments on their contents. *The Externality of Relations* (pp. 610-621): THEODORE DE LAGUNA. - The conflict as to whether relations are essential, as held by the neo-Hegelians, or external, as held by the realists, is a conflict, it is asserted, calling for analysis rather than argument. Externality may mean that all relations are external to the nature of all relatives, a doctrine claimed to be false; or that relations are external to qualities, a doctrine dependent upon the distinction between a quality and a relation; or that relations are external to each other. The word "essential" is analyzed with reference to its various meanings. *The Psychology of Punitive Justice* (pp. 622-635): WILLIAM K. WRIGHT. - "Of the three theories regarding punishment, the retributive theory, the deterrent theory, and the reformatory theory, public opinion at the present time is probably most correctly interpreted by the deterrent theory, which, as we have seen, is the resentment instinct interpreted and rationalized." *Reviews of Books* (pp. 636-657). Konstantin Oesterreich, *Die Phänomenologie des Ich in ihren Grundproblemen*: MARY



WHITON CALKINS. Johannes Rehmke, *Philosophie als Grundwissenschaft*: W. H. SHELDON. Warner Fite, *Individualism*: ELLEN BLISS TALBOT. Leslie J. Walker, *Theories of Knowledge*: H. W. WRIGHT. *Notices of New Books. Summaries of Articles. Notes.*

- Bosanquet, Bernard. *Logic*. Second Edition Revised and Enlarged. 2 Vols. Oxford: The Clarendon Press. 1912. Pp. xxiv + 711. 21s.
- Carver, Thomas Nixon. *The Religion Worth Having*. Boston and New York: Houghton Mifflin Company. 1912. Pp. 140. \$1.00.
- Colvin, Stephen S. *The Learning Process*. New York: The Macmillan Company. 1911. Pp. xxv + 336. \$1.25.
- De Wulf, Maurice. *Histoire de la Philosophie Médiévale*. Quatrième Edition. Louvain: l'Administration de la Revue Néo-Scholastique. 1912. Pp. viii + 624. 10F.
- Engert, Horst. *Teleologie und Kausalität*. Heidelberg: Carl Winters Universitätsbuchhandlung. 1911. Pp. 50.
- Flournoy, Thomas. *La Philosophie de William James*. Saint-Blaise: Foyer Solidariste. 1911. Pp. 219. 2.50F.
- Gilbert, Otto. *Griechische Religionphilosophie*. Leipzig: Verlag von Wilhelm Englemann. 1911. Pp. 554.
- Heimsoeth, Heinz. *Die Methode der Erkenntnis bei Descartes und Leibniz*. Erste Hälfte: Historische Einleitung. Descartes Methode der klaren und deutlichen Erkenntnis. Giessen: Verlag von Alfred Töpelmann. 1912. Pp. 192. 5.50M.
- Horne, Herman Harrell. *Free Will and Human Responsibility*. New York: The Macmillan Company. 1912. Pp. xvi + 197. \$1.50.
- Jerusalem, Wilhelm. *Die Aufgaben des Lehrers an Höheren Schulen*. Wien und Leipzig: Wilhelm Braumüller. 1912. Pp. xii + 392.
- Kessler, Dr. Kurt. *Rudolf Euckens Bedeutung für das moderne Christentum*. Bunzlau: Verlag von G. Kreuschmer. 1912. Pp. 68. 1.50M.
- Levinstein, Gustav. *Philosophische Betrachtungen*. Berlin: Leonard Simion. 1912. Pp. 99. 1.80M.

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## NOTES AND NEWS

THE following delegates have been appointed to represent the American Philosophical Society on the following occasions: Vice-president William B. Scott, of Princeton, to represent the society at the two hundred and fiftieth anniversary of the foundation of the Royal Society in July next; Professors Paul Haupt, of Baltimore, E. Washburn Hopkins, of New Haven, Morris Jastrow, Jr., of Philadelphia, and A. V. Williams Jackson, of New York, as delegates to the eleventh International Congress of Orientalists, to be held at Athens on April 7 to 14; Dr. Franz Boas, of New York, a delegate to the eighteenth International Congress of Americanists, to be held in London from May 27 to June 1. At the centenary of the Academy of Natural Sciences on March 19 to 21 the

society was officially represented by Professor Henry F. Osborn, of New York, Dr. Charles D. Walcott, of Washington, Mr. Samuel Vauclain, of Philadelphia, Professor William B. Clark, of Baltimore, and Dr. Henry H. Donaldson, of Philadelphia.

THE Princeton University Press announces the publication of President Witherspoon's Lectures on Moral Philosophy, edited by Mr. V. L. Collins, of Princeton University. This reprint is the first in the series of "Early American Philosophers," planned by the American Philosophical Association, and to be published under its auspices by the universities with which the respective authors, whose works are to be reprinted, were most intimately connected. The text is that of the first edition, that of 1800, which the editor has collated not only with the editions of 1810 and 1822 but also with manuscript versions of the lectures written in 1772, 1782 and 1795, and significant variants have been noted. The Introduction is a study of Dr. Witherspoon's many-sided character; and a check-list of his published writings has been supplied. The frontispiece is a reproduction of the portrait of Dr. Witherspoon by Charles Wilson Peale. The edition is limited to 500 copies.

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on Monday, April 22. At the afternoon session, which met at Columbia University, the following papers were read: "Sex Differences in Incidental Memory," Mr. G. C. Myers; "Studies in Recognition Memory," Dr. E. K. Strong; "Individual Differences in the Interests of Children," Miss Gertrude M. Kuper; "Experiments with the Hampton Court Maze," Professor H. A. Ruger. The papers read at the evening session at the American Museum of Natural History were as follows: "Relation of Interference to Adaptability," Mr. A. J. Culler; "The Optimal Distribution of Time and the Relation of Length of Material to Time Taken for Learning," Mr. D. O. Lyon; "The Age of Walking and Talking in Relation to General Intelligence," Mr. C. D. Mead; "Practise in the Case of Children of School Age," Mr. T. H. Kirby.

MRS. CHRISTINE LADD FRANKLIN has given three university lectures on color vision before the department of psychology of Columbia University, as follows: March 25, "The Theory of Color Theories—The Color Triangle and the Color Square—The Facts Inconsistent with the Hering Theory"; March 27, "The Young-Helmholtz Theory in its Latest Form—its Indispensableness and its Inadequacy"; March 29, "The Recent Views on Color—Brunner, Pauli, Bernstein, Schenck—The Development Theory of Color."

THE Philosophical Institute of Canterbury, New Zealand, which came into existence on August 30, 1862, will celebrate its jubilee this year. It is proposed to mark the occasion by holding a gathering in Christchurch.

DR. DURANT DRAKE, of the University of Illinois, has accepted the position of associate professor of ethics and the philosophy of religion at Wesleyan (Middletown, Conn.) University.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### BEAUTY, COGNITION, AND GOODNESS

PHILOSOPHERS and artists have taken, throughout the history of thought, one of two attitudes toward beauty. They saw it either as a deep, metaphysical principle made magically manifest or as an ordinary psychologic or material datum, curious in its bearing on human interests. Beauty was, in these two views, assimilated, on the one hand, to the high, the noble, the divine, impersonal, and selfless; on the other, to the pleasures of the lower interests of life, to the satisfaction of appetites. To Plato, Plotinus, Kant, Schelling, Hegel, Schopenhauer, Ruskin, Goethe, among many others, beauty was the supernal reality made manifest; escape from evil, the self-expression of the infinite, and what not that is transcendental and blissful. For Baumgarten, for the English empiricists from Hobbes to Burke, for psychologizing investigators like Lipps and Santayana, for biologizing ones like Darwin and Guyau or Spencer, beauty was identical with some state of mind or the function of some biological condition or trait. None allowed it any independent status or intrinsic, observable character. It was always taken metaphysically or positivistically; attributed now to the object, now to the mind, and the diversity of opinion concerning its nature is so great as to render doubtful any definition of it, save in so far as that definition contains elements common to all the others. Such elements should, on the one hand, reveal either the constant conditions or occasions of beauty and perhaps its intrinsic character; on the other, they should indicate its status with respect to man and nature.

Where is beauty to be sought? In the definitions themselves? Hardly, since these look back to a specific situation having concrete and multifold characters from which the definitions as such abstract. Actual beauty is to be found empirically, like actual apples or chairs or tables. It can not be deduced; it must be sought in typical "beauty-situations." But since, according to the definitions, these are cases of either objective or psychological existence, we must examine both things of beauty and beauty-experiencing minds.

Suppose, then, that we study any object to which the adjective "beautiful" is applied—any statue, any picture, any poem, any melody. If it contains beauty as a quality or attribute not identical with any one of its other qualities, or so identical, or identical with the whole collection of them, this beauty must be capable of being analyzed out, like color, texture, shape, size, or expression. Now we can abstract from any object of beauty, one by one, its qualities—its order, its structure, its tone or color, its contour or pitch, its imagery or expressiveness. We can exhibit these elements. We can say of the Lady in the Sistine Chapel: "See, here is the rose of the Madonna's cheek, here the pink and white of her flesh, the blue of her eyes, the oval of her face, the round of her arm, the flowing line of her robe, the perfect curve of her aureole." But can we so abstract and exhibit her beauty? Where in the picture shall we find it, whence take it, as we have found and taken these other qualities, from eyes and robe and aureole? This quality we can not discover: like Berkeley's matter, it disappears with enumerations of qualities that, taken together, are supposed to possess it. Empirically, at least, beauty does not appear to be an additional quality, added to color and line and expression; it is not an underlying quality where color and line and expression inhere. Shall we say then, as Berkeley said of matter, that beauty is the qualities that are supposed to possess it, that it consists of the union of these so various elements? Some philosophers do, in fact, hold some such proposition to be true. For them beauty consists in wholeness, and a beautiful thing, they call "an organic whole, self-completing and self-complete." Others speak of the beautiful in an object as the harmonious union of its parts, identifying beauty with certain specific relations that such parts bear to one another. To all persons, who so think of beauty, it involves some kind of complexity: a simple thing can not be beautiful. Yet are there not many things we find beautiful that are genuinely simple—a pure color, a graceful line, a single tone? These are units of which complex esthetic objects are made, yet they are not unbeautiful in themselves. Reduce or increase their quantity or duration, they are still beautiful. We may not say, therefore, that beauty is identical with wholeness as such, nor yet that it is identical with a special kind of wholeness. Very often two objects made of esthetically the same material, in an identical fashion—a picture and its copy, for example—differ in no respect save in this unique matter of beauty; one of them possessing it supremely, the other not at all. Still more frequently an object which is found to be beautiful on one day is judged unbeautiful on the next; while an object which has never been considered to possess beauty is suddenly found to be endowed therewith in high degree. And this last



event occurs to the most commonplace of objects—a city street, a familiar voice, one's wife, one's pupils, even one's last year's contribution to the JOURNAL OF PHILOSOPHY. Yet when you analyze this transfigured thing, you find in it nothing new which is the cause of beauty, nor yet beauty itself. And not only is one and the same object inconstant with respect to beauty at different times; if beauty is a quality of it, it both has it and does not have it at the same time. For every disagreement about the beauty of an object means that the beauty is there and not there at an identical instant. This could not be if beauty were a quality, whether a particular one, like red or shape, or the unity and wholeness, the combination of many such particular qualities. Experience, when taken thus radically, refutes both these conceptions. Neither beauty as a quality nor its identity with wholeness is revealed in it. Complexes or simples, they may be the occasion of beauty, or perhaps the result of beauty, but beauty's self they are not. But if beauty is not the wholeness of an object nor any special part or quality of an object, then it does not reside in the object. It is to be sought for elsewhere.

That "elsewhere," estheticians, following the normal bent of the philosophic mind, make the spirit. For a long time great schools of philosophy have persisted as the exponents of a fundamental proposition—the proposition that the mind contributes a great deal to the nature of its object; many, indeed, believing that knowing is creative. Psychology has given this belief a color of truth. It has been shown that what we see or hear or feel varies with our previous experience, the state of our bodies, our general mental tone. This fact, it is claimed, is most particularly evident in the region of our life known as values, and psychologists, accordingly, even those who do not believe the general assumption that the mind alters or creates things by knowing them, have none the less found it convenient to identify beauty with certain psychological conditions. According to these scholars the mind endows an object with beauty when it assumes toward that object an "esthetic attitude." By "esthetic attitude" they mean certain changes in mind and body. These changes they study, analyze into components, define with respect to their bearing on each other, and then designate one or all of them with the word "beauty." So, beauty consists for some in the fusion into identity of certain mental states; for others it consists in the titillation of two feelings, one, that the object is real; the second, that the object is unreal; others, again, find beauty to be a balanced system of motor responses, or a fusion of mind and object, causing a "loss of personality"; while others still identify beauty with the emotional imitation of the object, by *empathy* or *eingefühlung*, or with the feeling of detachment from pain and the stress of the daily life—the "libera

tion" of the mind as in play, or with the attribution of pleasure to the object, rather than to the mind, and so on. Against such identifications, and there are many more, the same difficulties may be urged as against the identification of beauty with wholeness or with any simple quality of an object. Are such psychological or physical states actually beauty? Do we discover them to be beauty as the chemist discovers oxygen and hydrogen to be water? I doubt whether even the most radical of the psychologizing estheticians would venture to assert that they can exhibit a psychophysical compound, beauty, just as they can exhibit any other psychophysical object—the sensation *red*, an image, the process of attention, or of association. Here again, as with respect to the object, it is mere confusion to identify beauty with what precedes or succeeds it or is simultaneous with it. *Empathy*, "favorable stimulation and repose," "objectified pleasure," may be occasions or results of beauty, its concomitants, perhaps. They are not beauty itself, nor can they, empirically, be made into beauty. They often appear where it does not, and it, where they do not. If, therefore, beauty lies in the mind of him who sees, its manner of existence must be vastly different from ordinary "psychological existence." Nor can it have even transcendental existence like the Kantian categories, since, if Kant is right, time and space and the categories are always with us, while beauty is not so with us. Is, then, its existence a Berkeleyan thing, destroyed when we cease to think of it, appearing and disappearing as we choose? Or is it something free and independent, working its will with us when it can even as we with it when we can? What is its relation to the beautiful object and what to the mind?

The first thing that strikes the investigator who is trying to answer this question is the fact that the mind, in genuine esthetic experience, in which beauty appears, is *not* experiencing a thing called beauty; it is experiencing an object to which it afterwards attributes beauty. Nor yet is this object affecting a psychological quality or trait, designated as beauty; it is affecting an ordinary mind. Hence, the mind which seeks to experience beauty as such must take the esthetic experience as a whole; must make its subject mind, beauty, and object together, and must analyze their mutual involutions. But to do this presupposes a conception of the nature of mind and its relation to its objects, and such a conception must needs be defined before the analysis can proceed.

## II

Common sense speaks of "reading the mind," "seeing what is in the mind," and so on. Empirically taken, mind, when spoken of in this manner, means a special way of behavior with respect to



objects, a way of taking them together. It involves a body, objects, and this distinctive togetherness. When a man "knows his own mind" or "makes up his mind" or "changes" it, one object or one program of behavior is included, another rejected. One thing is clung to, asserted, another abandoned. To be able "to read another like a book" is to distinguish the contents of the other's mind and his attitude toward them which alone makes them uniquely contents of *his* mind, their especial and concrete togetherness. It is, in a word, to perceive the direction and bearing of his interests.

Now what is interest? Taken concretely it is an action of a complex called a body upon something not itself, in such wise that this action and its object continue to increase and to expand prosperously. To say that John Jones is interested in music is to say that Jones so acts as to increase, use, and control those objects in his environment that are denoted by the word music—the objects, their associations, and implications. He goes to concerts, to operas, he makes himself a member of musical clubs, he plays, he sings, he composes, or buys scores. We define all human characters by their dominating interests—the miser, the boaster, the gambler, the philosopher—each of these words designates behavior tending to preserve or increase a certain type of existence. Now behavior of this kind is nothing more nor less than thinking. For thinking is only the prosecution of interests—the preservation of what is propitious and the elimination of what is evil—from the destruction of an enemy in the flesh, to a contradiction in logic. It requires a *body*, an *object* thought, and the *way* of thinking. And mind is what is left when the body is abstracted. In any concrete instance, hence, mind is a system of objects of which a living body, its operations, its desires—*i. e.*, the motor and affectional life—are central and the objects marginal.

If this be the case, minds are neither simple nor stable. They may be and are "changed," "made up," "confused," "cleared," etc. One body, in the course of its lifetime, may have many minds, only partially united. The *unity* of a mind is coincident with its consistent pursuit of *one* interest (we then call it narrow) or with the cooperation and harmony of many (when we call it liberal). Frequently two or more minds struggle for the possession of one body; that is, the body may be divided between two objects, each equally demanding response. The most typical instance of such a division is that in which you can not determine between two conflicting ways of behavior, where you are "of two minds" with respect to an object or an end. The most complex instances are those of dual or multiple personality, in which the body has ordered so great a collection of objects and systematized a sufficiently large number of interests

in such typically distinct ways as to have set up for itself different and opposed "minds." On the other hand, two or fifty or a hundred bodies may be, so far as is compatible with their fundamental numerical diversity, "of the same mind." In fact, concerning the elementary things of life, the business of feeding and loving, the sun, the sky, the primordial conditions of labor, the majority of men *are* of one mind: it is this unity of mind that we call their "common sense."

Mind so taken, it is clear, does not create the objects it knows; it selects them. It does not "picture" or represent what it knows, it apprehends its objects directly. Not only is it, moreover, uncreative of things; it is uncreative of those things which are called purely mental—memories, imaginations, ideas. Its world, instead of being dual, is single and continuous. Whatever it thinks has an independent status and definable character—a centaur, the number 4, Cæsar's death, to-morrow's dinner. Whatever the *source* of these objects, once they are *cognitively* found, they are found as real: they are capable of being subjects of conversation and of battle. They may be envisaged by many people without being thereby changed in the least, or they may be changed and their changes would be accountable in unambiguous terms of bodily or otherwise entitative action upon them. A world of such objects in which all things have each a genuine status has been called by William James a "world of pure experience," and this way of viewing it he has called "radical empiricism" and "logical realism." Its content is an infinitude of entities, some "existent," some "non-existent," but really present in knowledge, partly or altogether, whenever thought or responded to. This infinitude must not, however, be taken as inert, nor as possessing in itself the orderly character of knowledge. It is a flux, a turmoil of confusion and disorder, containing pure chances, and with all its fulness, breeding infinitely more things. What order it contains is not necessary, but accidental—an acquired habit of things: what things there are are not necessary but accidental—spontaneous appearances that have succeeded in establishing their right to a place from among all the infinitude that have failed and been irredeemably lost. The cosmic order is a matter of cosmic adaptation: it is the salvage out of the universal chaos, neither good nor bad, but one out of an infinitude of possible orders, any of which might be much superior to this one, and any of which might in time or immediately displace it.

I have just made use of the words "superior," "good," and "bad." That use was premature. Such terms, terms of valuation, introduce into the order of nature a new and extraneous order, itself as much an incident in the cosmos as is the cosmos in the universe.



For us, however, it is a reordering of that universe, the establishment therein of a true center of reference, an unutterably different scale of being. This center, as we have seen, is that arrangement of entities we call the human organism. Like a magnet set within a heap of iron filings, it establishes within its environment a new and ulterior order; it endows the environmental contents with an additional quality and another status, making them relevant chiefly to *its* specific capacity and arranging them along *its* line of force. It does not alter their constitution, but it violates their inertia and proper bias, refracting these with reference to the needs of its own nature. In the universal jumble simple things may lie side by side with complex things, one may spring from the other, the other from the one. For the mind, simple things are first; complexes are built out of them, the universe is reconstituted, willy-nilly, in an ascending hierarchy of complexity, from logic, through mathematics, physics, chemistry, and biology, to ethics. Dominated by its interests, regarding the residual world only with reference to its bearing on these, the organism manipulates and uses what it apprehends directly, until its complexity is utterly reduced or its force consumed. This activity is knowing—response to objects as constituents or relevancies of interests.

Now, actions, responses, uses are either *relations* or depend upon them, and relations may be not only efficacious and alterative, but also external and impotent, in no sense definitive. They need not constitute anything on which they operate. They appear and they disappear, but they always bind two or more things together in a specific identifiable way. Thus, I stand on the floor, and “onness” is a relation between me and the floor. But I should not be unmade by not being on the floor, nor the floor made by my being on it. Onness is an external relation and defines neither me nor the floor. On the other hand, certain relations, which bind complex things together, *do* define them, as a man’s cognitive relation to things defines man, the *knowing* animal. By that act which constitutes him man, he is most adequately distinguished from other things. These, again, are identified as heavy, sweet, red, alive, big, small, but only under very special conditions are they identified as *known*, and only in abnormal cases defined as such. To them the immediacy of knowledge is an external relation which connects them with many knowers, and it is a relation which they lose and assume without suffering directly the least change in their constitution and character. Indeed, we do not claim to know things certainly or immediately until we are convinced that they have revealed to us every possible change they themselves *independently* undergo. Their self-revelation is classified sometimes according to the organs which respond to

them, sometimes according to their complexity, sometimes according to both.

So, when the body responds to an object by means of its sense-organs, the object is called a perception. It is generally a "thick" object, supposed to be made up of many simpler elements. It gets itself taken hold of by the appropriate reflex arc directly, much as a pair of tongs directly spans or grasps a piece of coal. Thus, the sounds you hear and the words you see are spanned immediately by your auditory and visual reflex arcs, indirectly, by your whole nervous system, and you are said to perceive *what* I say or *what* impresses the eyes. Now such perceptions are very complex: they are composed of a great variety of tones or shapes and colors and their relations, and they also carry meanings and stand for things not themselves. If you span a single element of this complex, you are said to have a sensation or an idea or a conception. Psychologists, to say nothing of philosophers like Kant, have made much of the difference between the two, but no genuine difference seems discoverable. The idea of red, *e. g.*, whether it be "motor," or "kinesthetic" or "sensory" or "verbal" or "imageless," is not distinguishable as to qualitative content from the sensation of red; nor the idea of triangularity from the sensation of triangularity. In both cases you have before you less than is before you in perception, but what you have before you is none the less of the same *kind* as content of perception.

Nor can the distinction between idea and sensation based on the *mode* of presentation hold. For even if sensations are presented by the senses and ideas by means of central processes, each is at the moment spanned by some reflex arc, and who shall say that the senses are not part of it? If an entity is to be apprehended at all, it must be apprehended by one or more organs, and its nature is not different, whether the terminal act is arrived at in a roundabout way, through the intervention of various neural processes, or spontaneously, by the response of the appropriate reflex arc to its stimulus. In either case the given character of this stimulus is directly grasped, and this is so in the apprehension of even such putatively psychological objects as memory and imagination. A remembered thing has to be sought and found like a thing perceived, and its difference from perception is rather in certain additive or subtractive qualities than intrinsic content. It is essentially no more a psychic or hidden thing than is a perception. If attainable at all, it is as open to-day, as shareable by many people, as potent in requiring our adjustment to it.

This holds, I believe, also of imaginal beings. These are taken to be, like dreams, peculiarly private and hidden; their *esse*,



more even than that of memory, is described as *percipi*. But if you study your imaginative activities, if you are lost in dream or reverie, you observe that they do not come at your bidding, that they must, like ideas and memories and sensations and perceptions, be sought out; their character and integrity must be acknowledged as these impose themselves upon you. You observe that they require you to adapt yourself to them even as do the more permanent things, making you happy or afraid, angry or sorrowful, confiding or watchful, just like the residual, solid, daily life. The stuff of them is the stuff of that life, going a different way, appearing in new complexes, differing from it only in power to hold the places they preempt. Imaginations are not unreal; those entities we so designate are only unfit. They belong, perhaps, to these other orders, to the infinite residuum which has not succeeded in making a place for itself in our cosmos, and breaks in, for the moment, perhaps, by way of the order of value, and is again cast out, banished, by the stronger, more "valid" order. Imaginations, too, may be common objects of knowledge; it is only their weakness which makes them sink out of our sight, like a tiny cloud to which you call the attention of your friend and which vanishes even as you cry, "Look!"

Such, then, are these so-called "mental," private entities—quite real, quite recognizable, with varying facility open to the day and to the common view of all healthy eyes. But one group of realities does not seem sharable and common in the same sense. This group comprises our preferences, our valuations. The others are objects, the goals of attention, the definitive contents of interest, the intelligible ideals of our lives. Attitudes and actions, however, are acceptances and rejections of these others, are the relations we bear to them, and just as two bodies can not occupy the same space at the same time, so two persons can not hold a numerically identical relation to the same object at the same time, unless these persons are identical. In this fact lies the source of all our differences and disagreements. Our mere numerical diversity compels us to value things with reference to fundamentally separate interests, to orient, each of us a world, about a distinct center, the self. Such orienting is the relating of the environment to the vital purpose. It is valuation, the essence of knowing, and our primordial and ultimate relation to our world is a *value-relation*. As such it carries its own peculiar terms, and for us, at least, is constitutive of our nature as terms. It consists at its barest of the direct appreciation of the immediate bearing of an entity on our vital selfhood. It stands out most clearly in an elementary interest. Such an interest is constituted by three things—an organism, an environment, the value-relation that binds them. This last is usually called cognition or awareness. It is different

from all other possible relations of organism to environment in that it alone *values* the latter, connecting its terms more closely, as in attention, i. e., becoming the object's attribute, *good*; or divorcing them, becoming the attribute, *bad*. *Good* and *bad*, thus, are converse modes of designating immediate cognition, which is the value-relation and the essential constituent of interest, a relation that can be named, but not defined, utterly simple, primary, and ultimate.

Now a mind involves countless reflex arcs, many objects, is composed of innumerable interests. Each of these, it is clear, may be separate and independent valuations of their content, positive or negative, good or bad. But reflex arcs do not act alone. They are "integrated" and act like mobs or armies, and when they so act their separate valuations also integrate, and though each preserves its identity of direction, it is penetrated through and through by all the others and constitutes with them a unity which is identical with a fresh and quite diverse valuation. Such would be the complex and more massive feelings, pleasures and pains, anger, fear, affection, respect, admiration, love, sympathy. These are valuating complexes composed of simpler valuations which fuse into one as the separate tones of a melody fuse into the melody. They are appraisements of the environment and as such can themselves be appraised—though only with the greatest difficulty. For when you are possessed by any emotion you can not yourself examine it, and when your friend or your doctor studies such an actual attitude and its object or physiological condition or connected incident, he finds himself speedily assuming the attitude he is observing. Nothing is so fluent and infectious; anger begets anger; love, love; any relation tends to reproduce itself. It is because of this that a "social mind" is possible or that a stable common sense can arise.

How different when the object apprehended is a thing! Two persons may have opposed attitudes toward the same thing or a qualitatively identical attitude toward different things. For instance, you observe the *red* of the sunset; your observing is identical with finding it pleasant; you approach it, you open your senses wide to absorb it, you aim at more and more of it—in a word, it becomes the content of your interest. Your neighbor, however, apprehends it negatively, turns from it, seeks to upset the cognitive equilibrium, to free himself of his relation to *red*, to oust *red* from his world. Then, according to these direct and immediate valuations of that color, its place in your common world will be determined, and in order to get rid of it or to save it, you may aim even to get rid of each other. So, while your object is identical, your attitudes toward it are different and opposed and are, mayhap, never to agree. For even if you should both apprehend *red* positively, even if it should



become your common interest, it would be bound to you none the less by two numerically diverse relations; and while you might unite to defend it against a common foe, you might yet quarrel for its possession. Rivals in love do so frequently. They enhance and glorify the same woman, make common cause against her enemies, and are themselves bitter foes. So, even identical instances of the same relation, when directed, not upon their common terminal, but upon each other, are necessarily opposed in so far as they are numerically different; and the whole of our civilized world is definable by the cooperation, antipathy, and fusion of objects in the whirl of value-relations.

### III

Mind, if the foregoing analysis is correct, is a system of objects related by a highly complex arrangement of value-relations to another complex, called the body. Anything outside this system, more or less durable, requiring a new adjustment, a reenvisioning or rearrangement of mind, would be an "object," whatever its character, quality, or status. When, now, is such an object "beautiful," and what happens to mind when the object it encounters is called beautiful?

Let us consider first how this encounter ensues. That continuous stream of active feeling we call life is nothing so much as a stream. Its mass is flux; in it moment passes into moment in terms of use. No point of it is sufficient for itself; it must borrow some of its reality from its predecessors and successors, it must surrender some of its proper integrity to the force of their withdrawing and of their coming on. Events affect us in their uses, not their natures, since they bear on interests, and should we pause for that nature, hence, the world becomes empty and we die. But now into the movement of multifold rates and infinite rhythms there bursts a thing with power to resist it. The attention, customarily shifting from this to that, pauses, the soul is turned from her headlong line of march to move upon this thing. The new value-relation brought to birth in that moment of pregnant attention feeds upon its occasion. From point to point it flows, holding each within the field of its unbroken act until it spans the utter fullness of the whole thing. One by one, the mind empties its storehouse of its appropriate treasures; these leap to the thing, making a constellation about it; the limbs of the body adjust themselves, so the rhythm of the breath, the pulse of the blood. A new onward movement of vitality has begun, enduring intensely, enduring profoundly, in felt-pulses of self-enhancing life. There is flux, but it is the flux of a growing fullness; a flux of power, but the power of poise, self-sufficient, absolute. It does not, as the flux of routine or of individual adventure, flow

unevenly, in eddies and whirls, from evil to good and back again; it does not flow instrumentally, consuming one object in another, passing from thing to thing, holding each for its use and abandoning each for its lost function. Rather do things grow more intensely themselves, more distinct, and yet more at one. The flow here of instrument into end is the flow and enduring of an identical thing. The interest grows by what it feeds on, and it feeds upon itself.

Such is the esthetic experience. Where, in it, does beauty appear? In the mind, as we have learned to know mind? Certainly not. To that the very object is *external*, an occasion for reorganization and readjustment, set over against it, a new datum to be encountered and controlled. In the object then? We have seen that beauty can not be *in* the object. Rather is it what alone remains, an independent thing, a relation *between* this mind and this object, binding them together and holding them bound. As such, it is inevitably a variable. It will not always span the same terms, nor even one of a pair, more than once, nor need it bind two minds to the same object. Positive, since it links rather than separates, elusive, concretely perceptual, beauty's nature, like the nature of all values, is its particularity and its appearance as truly active only in concrete situations. The very life of interest, it can not be "disinterested"; the very occasion of concreteness, it can not be "universal." It may link the mind to any environmental content, from a mathematical abstraction to a perceptual blotch. It is the only predicate in the judgment of beauty, whether the surgeon's of an operation, the carpenter's of his job, the sculptor's of his statue, the philosopher's of his system. But just because this is so it belongs to particular situations only, and the radical diversity of taste and judgment attests this concreteness. And it is only the failure to observe it where it occurs that makes people cling to its "disinterestedness." Such people miss the fact that the disinterestedness of the "esthetic" experience is like the disinterestedness of him who wants nothing because he already possesses everything. In morals, "disinterestedness" is instrumental. It is not so much a loss of self—far from it—as a gain in the sense of the excellence of other selves. It consists in subjecting "self" to the service of alien ends; in becoming an instrument, a means, without finding in that state any too great private joy. In it, nothing is so keen as the sense of personality. In the "esthetic" experience the sense of personality is also keen. But it is the keenness of completed selfhood, of utter private joy, not of public use. Far from being unselfish and disinterested, the esthetic experience is absolute absorption in interest, absolute selfishness. For of course what is already completely possessed is not desired; and the mind in the grasp of beauty is in possession of its object so completely as to



shut out, for the nonce, the righteous demand of other interests and the cry of other needs for satisfaction. Yet unselfishness is not the exclusion of other needs and interest, it is their prosecution and fulfilment. Unselfishness is not the repose of one's own perfect adaptation to the environment; it is the unrest which compasses that adaptation for others. In the experience where beauty is the relation between you and your environment, it is, however, you yourself who are so adapted, and, being adapted, lifted up and out of the horde of conflicting interests. Your world is that object to which you are bound, and you are become isolated, alone, and supremely happy in that loneliness. Here is the only genuine solipsism, in which the stuff of reality assumes the status of mentality and things and thoughts are one. It is of the essential nature of beauty that your neighbor can have no part in your experience of its object, and that your experience of it can have no part as such in any other concern whatever in the enterprise of life.

Private, concrete, elusive, in itself neither mental nor amental, beauty is the optimal mode of that positive, intrinsic value-relation which binds the mind to its object in such wise that the two are completely and harmoniously adapted to each other in the very act of apprehension.

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### IMITATION AND ANIMAL BEHAVIOR<sup>1</sup>

ADVANCE in the experimental analysis of behavior tends to make psychological concepts inadequate. In the realm of human psychology one needs only to instance such a term as memory. Aristotle summed up his total discussion of this subject in sixty words. With modern psychology came experimental analysis and to-day it requires twice sixty words to name the separate subjects that we investigate in the general field of memory. It would be an easy matter to show the same analytic tendency in perception and thought and will and in many non-psychological fields as well. It would be no less easy to point out numerous fields where such analysis has not had its way, and comparative psychology is one of these. It does not require any great insight in the reader of comparative psychology to see that many of the concepts used in the description of animal behavior are of the relatively unanalyzed sort. That we continue to talk in general about growth, development, intel-

<sup>1</sup> Read at the twentieth meeting of the American Psychological Association, Washington, D. C., December, 1911.

ligence, instinct, and imitation is evidence only of the fact that we have not yet pushed our experimental analysis to the end—not far enough to see what in reality are the elemental processes out of which the complex behavior of animals is built up. I insist on the phrase “experimental analysis,” for it is only by the most extensive and painstaking development of detailed methods and the application of these methods in quantitative studies that we shall ever be able to understand animal behavior and to see its intimate relation to human behavior.

Take the case of imitation. There can be no doubt that the facts which this concept has been used to connote are more complex than any writer has yet set forth. It was no doubt a distinct advance in the discussion of the subject when scientists distinguished instinctive from voluntary imitation. This, however, is not a finally satisfactory analysis of the concept, and one reason why we have not made more progress in our study of the imitative behavior of animals is that the whole subject has been dominated by this crude differentiation. We have been looking for something that could be called instinctive imitation or voluntary imitation, and the facts have not fit this division. It would probably be more correct to say that psychologists have been looking for a sort of animal behavior that could be called voluntary imitation, and when they have found imitation that did not fulfill their idea of what constituted volition or inference they have gotten rid of such imitative behavior by calling it instinctive. The results of such study have not been encouraging, and experimentalists have tended to turn away from the study of imitation to fields that promised more definite results.

Before this diversion from the study of imitative behavior is complete it may be worth while to examine the tools with which we have been working. After all what can one mean by instinctive imitation? Whatever he means by imitation, it must be qualified by what he means by instinct. And what does instinct mean in current psychological discussion? If one is content with verbiage, he may, after perusing a whole library on the subject, as Wheeler admits doing, and exercising the most arbitrary selection, satisfy himself with a form of words. If he is not a word-monger and insists on knowing concretely what instinct means in the analyzed behavior of any single mammal, there is scarcely a line in the experimental literature, except Yerkes's and Bloomfield's<sup>2</sup> work on the cat, to illuminate him.

Let us try to be concrete. Speaking from the point of view of current thought, we would doubtless all agree that there is in the young of mammals an instinct to hunt out the breast and suck.

<sup>2</sup>“Do Kittens Instinctively Kill Mice,” *Psych. Bull.*, 7: 253.



Now take the case of newly-born puppies and ask any single question about the makeup of the instinct; ask what it is that sets this instinct going, and you will not find a satisfactory answer anywhere in the literature. That it can be neither sight nor sound seems evident, because the eyes and ears of new-born puppies are closed for practically a fortnight after birth. Yet it is an open question whether they can not distinguish shades of light through the closed lids. Suppose you eliminate light and sound. What do you know about the puppy's sense of smell, its power of discrimination, its range in quality, and its range in intensity; the exceptional power of certain odors to excite reaction, the distance over which the odor is perceptible, the power of localization? To every one of these questions you must answer, "Absolutely nothing specific." What about the new-born puppy's sense of temperature, its sense of touch, its power of orientation, its possible kinesthetic sensations, its oral sense, its ability to taste? To every one of these interrogatories you must reply as before, "Nothing at all that fulfills the demands of experimental science."

If you seek to know which of several stimuli is prepotent over the others and to determine some order of importance for the several possible senses, you complicate the situation still more, and your confusion increases if you raise the question of the relative accuracy, serviceableness, and modifiability of the supposedly connate neural connections. It is hardly necessary to do more than state the situation to see that when we speak of the feeding instinct of young mammals we are merely cloaking our ignorance with a phrase. As an analytic concept it is valueless. Yet, if we have so little knowledge of the first experiences of the new-born animal, all its later history is clouded in even denser mists. There have been some studies on the sense of hearing and the sense of sight in dogs, but this work is not sufficiently accurate in its technique but that later experimentalists will insist on doing it all over again. There has been some work on dog intelligence, but not one of the reported investigations has even attempted to take the dog on his own ground, that of smell, and in no one of the investigations has the experimenter succeeded in eliminating himself from the experimental situation. These two shortcomings very decidedly limit the value of any investigation as yet made. When you couple with the evident fragmentariness of the experimental work and its certain lack of finality, the fact that the behavior of a dog at any level of development is a composite of inherited and learned reactions, you see how impossible it is in any given case of canine behavior to say what is instinct and what is intelligence. Gross facts are evident enough, but we ought at this

time to be beyond the stage where we base theories of learning on the simple observations of common sense.

Yet, in spite of our inability in concrete cases to separate instinct from intelligence, we are asked by current writers to regard a large proportion of dog behavior as due to instinctive imitation. I confess that I can not see how this sort of speculation is likely to illuminate the subject of animal behavior. To use the phrase to point out a large body of unanalyzed behavior is of course allowable, on condition that we take the next imperative step in the process, namely, to analyze that behavior into its elemental terms. But to imagine that we have said something final about a certain bit of behavior when we call it instinctive imitation is to mislead ourselves and to confuse the rightful course of experimental investigation.

With voluntary imitation the case is even worse. In human psychology we are at sea as to what constitute the elemental processes of inference and volition. In one place we read that the highest processes of mental life are nothing more than highly elaborated complexes of functioning images. In another place we are told that all this image-mongering is absurd, and that volition and inference can go on without any images whatever. On the one hand, we hear that we are nearing the end of sensationalism, and on the other, that the final triumph of sensationalistic psychology is even now in sight. Then we hear that there is no valid objective criterion of the presence of imagery—that we must always depend upon the subject's introspective report. In the light of such confusion, such a term as voluntary or inferential imitation loses its significance. Until human psychology can give us something more settled regarding the processes of volition we do well to use the term volition with parsimony in reference to the doings of animals.

Here then is our situation. We have the concept of imitation, which is an essentially descriptive term, setting forth certain features in the objectively observable behavior of animals. This concept is then divided into two parts, not, mark you, on the basis of objectively observed features of behavior, but on the basis of the supposed psychological accompaniments of such behavior. The terms which are used to denote these two divisions then become, not descriptive terms any longer, but explanatory terms, *i. e.*, they do not point out the behavior which actually takes place, but they attempt to indicate the non-observed processes antecedent to such behavior. These terms, however, when submitted to critical examination, turn out to have the most uncertain significance, for, imitation entirely apart, it must be admitted that there is no understanding about the relation of instinct and volition. What is more is that we shall not have any understanding of their relation so long as we confine our work to the logical



differentiation of terms. It may not be a very encouraging situation, but there is little likelihood that anybody will say anything significant and concrete about instinct and volition in mammalian behavior until we have a far larger accumulation of experimentally determined facts than we now have regarding any single mammal.

This situation is an unfortunate one for the study of imitative behavior, which is no longer approached on its own merits, but which has to struggle for recognition under the burden of supposedly explanatory adjectives, which in fact explain nothing, being themselves in need of description and explanation. We seem to face two alternatives: we may abandon the study of imitation and direct our studies to other fields. This we seem to be doing and to a degree the tendency is commendable. If the change is actuated by the feeling that imitative phenomena are so complex that we can not rightly interpret the results of experimental studies on imitation until we know more about the sensations and instincts, then, I agree. If, however, the tendency to drop imitation out of our categories is due to the belief that when we are talking about imitation we are resorting to "magical agencies" and that we must abandon it in favor of something that is more truly scientific, then I dissent, and insist that whatever may finally be our decision regarding imitative phenomena, we are as yet without sufficient evidence for any such speedy termination of this category. No person can face the whole group of experimentally determined facts of imitation in birds,<sup>3</sup> rats,<sup>4</sup> cats,<sup>5</sup> monkeys,<sup>6</sup> and apes<sup>7</sup> and come to any such conclusion, except he do it in behalf of a theory which he regards as more important than the facts.

The second alternative is to suspend judgment as to the particular level of psychical accomplishment denoted by the different kinds of imitative behavior, to free the concept of imitation from its unfortunate appendages and set ourselves to the task of accumulating the facts which we shall need before we can finally determine the importance of any particular kind of imitative behavior. The social relations of animals are of vast importance to their degree of mental attainment, and in these social relations there is a kind of behavior,

<sup>3</sup> James P. Porter, "Intelligence and Imitation in Birds," *Amer. Jour. Psych.*, 21.

<sup>4</sup> Charles S. Berry, "The Imitative Tendencies of White Rats," *Jour. Comp. Neur. and Psych.*, 16: 333.

<sup>5</sup> Charles S. Berry, "An Experimental Study of Imitation in Cats," *Jour. Comp. Neur. and Psych.*, 18: 1-25.

<sup>6</sup> M. E. Haggerty, "Imitation in Monkeys," *Jour. Comp. Neur. and Psych.*, 19: 337.

<sup>7</sup> M. E. Haggerty, "Preliminary Studies on Anthropoid Apes," *Psych. Bull.*, 7: 49.

which, to date, has not been better described than to call it imitation. At the present stage of our study of these relations, it is of secondary importance whether we are finally to explain them as "inherited reactions which are definitely serviceable on the occasion of their first appearance," or whether we must group them under entirely new rubrics. It is of first importance that we find out in terms of objectively describable behavior exactly what these relations are, and find it out in elemental terms.

I said a moment ago that no one can face the whole group of experimentally determined facts of imitation in animals and treat them lightly. I wish now to call attention to a single case of imitation which I reported to this association three years ago. Two monkeys were put into a cage three by four feet at the bottom, and six feet high. Seven strings hung from the top of this cage to within eight inches of the floor. Near the floor was a circular opening in the back of the cage, and one of the strings was attached on the outside of the cage to a mechanism which would, when the string was pulled, drop food down through a chute on the outside of the cage to a floor level with the opening in question. One of the two monkeys had learned to pull the string and get food at the opening. The other monkey, although he had been allowed ample opportunity to learn the trick unaided, had failed to do so. After being allowed to be with the first monkey when she pulled the string and got food, the second animal when left alone directed his attention to the food opening in a way that he had never done and repeatedly handled the three strings nearest the opening in a far more interested manner than he had ever done. In explanation of this change in behavior I am perfectly willing to invoke Thorndike's first law of behavior<sup>a</sup> that "*the same situation will, in the same animal, produce the same response—and that if the same situation produces on two occasions two different responses, the animal must have changed.*" But then I would ask those who deny that this is imitative behavior to specify in what the change in the second monkey consists. To assume that there has been a change independent of the presence of the performing animal is mere gratuity. The evidence was too clear that the attention of the stupid monkey received a decided and sudden turn in the direction of the behavior of the other animal to doubt that that behavior was the determining factor. That the second monkey should go to the opening and look in may, of course, be explained by the fact that he had seen food there, but that he should suddenly become interested in the strings, the ends of which hung six inches above the opening and out of the animal's range of vision when he was looking into the opening, can receive no such explanation. There had been ample

<sup>a</sup> Edw. L. Thorndike, "Animal Intelligence," page 241.



opportunity for the second monkey to learn the trick unaided, but he had failed to do so; the strings had never brought satisfaction to him through his own activity. Yet now, although he did not use the strings to get food, he continued to handle them, to pound them against the side of the cage and against each other, and several times after acting in this way he looked directly into the food opening. Such continued interest can not be explained by the "law of effect." There is here a directing of attention that can not be due to the activities of the animal itself nor to any change in the mechanical situation.

This directing of attention which is so evident in this case was more marked in the next stage of the animal's learning. The trained animal was put back into the cage and allowed to get food in the presence of the learning monkey. As a result of this experience the attention of the second animal was narrowed down to the correct string. He no longer played with all three strings but centered his attention on the correct one of the three, and that without ever having used it in getting food or finding satisfaction through it in any other way. That he did not at once do the necessary thing to get food shows that imitation was not perfect and had to be pieced out with accidental learning, but the very fact that, in spite of his inability to do the proper act, he kept working at the task shows that the law of effect is not sufficient to explain this kind of learning. I do not claim that this is voluntary or inferential imitation. I do not profess to have any very clear idea as to what voluntary and inferential imitation are. What I do claim is that you have here a progressive narrowing of one animal's attention (viewed objectively) in the direction of the behavior of another animal and that this change in the behavior of the second animal can not be accounted for by any supposed change in the animal itself, except such as is induced in it by its observation of the successful behavior of the trained monkey.

If my contentions in this case are granted it may be urged that this is an exceptional case. I doubt that. My own investigation showed other cases which can not be explained on the basis of the supposedly simpler laws. To be sure I do not claim any finality for my results. The investigation marks only one stage on the road of experimental analysis and only points the way for extended investigations in the same direction. The methods of procedure will bear favorable comparison with those of any published experiments in this field, and under these circumstances I shift the burden of proof to the objectors. They must take the experimental devices which produced these results and show that under the same conditions most monkeys will not do as the ones whose behavior is reported.

In view of these contentions, to which I have tried to give some degree of reasonableness, I do not think that the time has come to discard our study of imitative behavior as Bohn<sup>9</sup> seems to think, nor to throw aside the category of imitation as Thorndike would have us do. That a final interpretation of the facts must wait upon the accumulation of a much larger body of material than we now have is certain. On the other hand, there is equal certainty that we must not telescope the facts so far ascertained with theories that do not give full justice to these facts. What our present situation indicates is a reworking of the concept of imitation by discarding the old classification and proceeding to a new classification based on objectively observed facts. That the experimentally determined data are as yet wholly inadequate for a final statement is admitted. Such a reorganization must take account of all the factors that determine attention and of the various levels of accuracy and complexity in the imitative behavior. The first step in the process of reorganization is to convince ourselves that the old classification has reached the limit of its usefulness; the second step is to construct a new classification for a single species of animal, and to follow this with a like service for other species, in every case basing the classification on the facts which have been brought to light by experimental investigation; the third step will be to push the experimental analysis of imitative behavior much farther than we have yet done, and in the end we may be able to speak with positive understanding about the imitative behavior of animals.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Motive Force and Motivation Tracks: A Research in Will Psychology.*

E. BOYD BARRETT, S.J. London: Longmans, Green, & Company. 1911. Pp. xiv + 225.

Those who are watching the progress of psychology will easily be reminded, through the present work, of Cardinal Mercier's efforts to interest catholic philosophers in experimental psychology. Broadly speaking, the Cardinal's propaganda in favor of the latest phases of psychological research can not be said to have been very fruitful among his correligionists. Where they have tackled psychological subjects experimentally, in following Cardinal Mercier's advice, they have done so with the intention of showing the exact manner in which the catholic philosopher must look upon experimental psychology rather than for the purpose of solving any particular problem.

<sup>9</sup> Georges Bohn, "La Nouvelle Psychologie Animale," page 185.



It can not be said that Barrett's work is an exception to this rule; this author, a member of the Society of Jesus, swears by the name of Cardinal Mercier. His work, however, gives us an excellent summary of the current theories of will. The subject is thus covered more satisfactorily than in any other recent publication, at least in so far as the literature pertaining to it is concerned, and for this service we may be thankful to the author. His familiarity with modern theories of the will no less than his easy flowing style renders the reading of his book a pleasure even to one untrained technically. Such fundamental problems as determinism, automatism, and the evolution of motivation are treated, on the whole, in a competent way, although the author's contention that the work shows, even indirectly, "the worthlessness of the psychological arguments for determinism" is unfounded. The strictly empirical experimental portion of the work shows nothing of this kind. His criticism of hedonism is particularly sound, provided we limit the use of the term, to a physical sense, in connection with activities of lower order, and, in man, to conscious mental processes.

We turn to the experimental matters reported upon in the book. Experiments were carried on with five subjects, including the author. Eight liquids, specially prepared, were used, to which nonsense names were given. Subjects were asked to taste the eight substances in rotation thrice every morning and thrice every evening, after calling out their respective names as given. The strength of these associations was tested by means of recognition tests, and then followed the choice experiments proper.

These were as follows: The nonsense names, printed on cards, were revealed to the subject, as in the ordinary association tests, by means of Ach's changing machine. Subject was instructed: "React when you know what it is." By arranging the names of the substances in the order of hedonic feelings they evoked, a definite scale of values was obtained, differing, of course, for each subject according to his subjective likes and dislikes.

Next, cards were printed in various combinations, and two of different hedonic value were made to appear at the same time over glasses containing the respective solutions. Subject was requested to choose a solution and drink it. A Hipp chronoscope measured the interval between the appearance of the card and the time of reaction. By means of Ewald's key, a Vernier chronoscope was started by the reaction so that the time elapsing between the reaction and the realization of the choice was also measured.

It will be noted that the processes of motivation and choice, which the author set out to investigate, took place in the interval between the perception of the excitant (in this case the card) and the active realization of the choice. This interval was subjected to close introspective scrutiny. The subjects made note of the motives which actuated them in the choice. The motivation factors, of course, were found to be mostly hedonic; they are divided by the author, arbitrarily, it would seem, into extrinsic and intrinsic. The author also speaks of "motivation tracks"; this adds to the plasticity and clearness of his thought, but when he per-

sists in this direction to the extent of actually mapping out tracks or curves of motive force the reader can not escape the impression that this is one more instance in which a happy simile has been made to bear more than it will support. It would be difficult for the author to convince his readers of the actual occurrence of such tracks and curves as he draws out skilfully, even if he should take the trouble, which he evidently thought unnecessary in the present connection, of disclosing all the proofs he has for their support.

In its final term, it was found that motivation becomes steadied and more and more automatic, that is, independent of conscious attention. This accords with our general empirical notions and is an illustration of the economizing tendency of volition. The opposite of this steadiness of purpose, hesitation, occurred frequently in the course of the author's experiments and is discussed by him in a special chapter, in which he treats of hesitation as a disease of the will and suggests ways of healing.

Whatever might be said of the practicability or therapeutic value of the author's remedies for impairment of the will, it is difficult to see wherein the author's claim that "these suggestions are based on the consideration of the actual results of our experiments" is justified. Suppose we look up his universal remedy or grand areanum, we find it stated as follows (p. 218): "With regard to hesitation which is, *par excellence*, the malady of the will, inasmuch as it destroys serious motivation and leads to irregularities and inconsistencies, the great means of avoiding it is to acquire the habit of serious, decisive choosing and to avoid repining over past choices." Leaving aside, for the present, the manifestly unwise teaching about "not repining over past choices," it must be said that such advice, far from being the product of experimental research, is the rawest kind of empiricism. Any country gossip is prepared to tell that what ails neighbor Jones, who is run down on account of gastric ulcer, is the absence of good nourishing food and plenty of it. The need of nourishment may be very obvious in the case of neighbor Jones and where the will is not sufficient more will and plenty of it is logical enough, but such prescriptions are far from what is really needed. Other remedies suggested by the author are similarly superficial, even though they be ideally logical enough.

The reader who will turn to this work expecting to find some new light on the subject of will and its motivation will probably be disappointed, but to one who wants the subject reviewed attractively and brought down to date this book will be highly welcome.

Though not quite germane to the subject under consideration, the reviewer thinks it his duty to express disapproval of a peculiar trick which may as well be branded here and now as unworthy of a scientist. The name of a liberal educator, who has recently suffered martyrdom in Spain, is dragged in by the author ostensibly to illustrate a point, but in reality to besmirch his memory. It is unfortunate that even the dead are not safe from such underhanded attacks. The peculiar villainy consists not merely in attaching an opprobrious epithet to an honored man, now dead, in a spirit of partizanship, but in doing so in connection with a work the read-



ers of which are not expected perhaps to know the details of the situation to which reference is made. It is a sophisticated way of carrying prejudice over into quarters where it may not otherwise have a chance to be heard, in the hope that through ignorance of the actual facts it may take root. Nothing is more clear to careful and impartial observers of contemporary events than that Francesco Ferrer did not "hold sway for three days over half a million people, burning their churches, schools, museums, and all they held most precious." This allegation is false in every respect. While such falsehoods are not uncommon, especially in certain interested quarters, one would not expect them to be paraded in front of unsuspecting students of psychology who may be unfamiliar with the details of the situation, and least of all in a work like the present.

The mention of Ferrer, the advocate of peace and apostle of secular education, in the same breadth with the sort of anarchists which the author's fancy depicts, above all the bringing of this matter furtively into this book, is not without a purpose. One's adversary is shown in the wrong and placed *hors de combat*, as it were, at least in so far as public sympathy is concerned (especially if the adversary be dead and unable to defend himself against a false charge) if one succeeds to brand the adversary's memory with some title or epithet repulsive to public opinion. This E. Boyd Barrett, S.J., has endeavored to do parenthetically by throwing a sentence or two into the midst of matter with which the object of his bias has nothing in common. A remark thrown in sideways, where the hearer is not on guard and is unprepared, is more likely to take root than otherwise. It is this that invests the offense of E. Boyd Barrett, S.J., with particular gravity.

Fortunately, no event of historic import in our generation has been the subject of such a thorough and impartial study as the Ferrer case. It is hoped that readers, upon seeing in print Barrett's assault upon the memory of Ferrer will be moved thereby to examine Wm. Archer's "Life, Trial, and Death of Francesco Ferrer" (London: Chapman & Hall, 1911), and thus acquaint themselves with the "Spanish Dreyfus" case, and with the true story of those troublous days in Spain.

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*Essentials of Psychology.* W. B. PILLSBURY. New York: The Macmillan Company. 1911. Pp. ix + 358.

On reading this book one must conclude that Professor Pillsbury has written an excellent elementary text-book of psychology. The mode of presentation is such as to interest the student and the general reader, while the style is forceful and clear. Students and teachers will find the exercises connected with each main topic very usable and well devised for testing and applying the principles brought out in the discussion. The references given at the end of each chapter are, for the most part, to similar treatments from other texts. The topics treated in the book are practically the same as those in most introductory texts except chapters fourteen and fifteen, which deal, respectively, with "Work, Fatigue and Sleep,"

and "Interrelations of Mental Functions," and which, embodying the results of recent experimentation, are a genuine addition to the value of the book. In general, the book profits decidedly by the incorporation of experimental results, giving it a greater scientific value without detracting from its readableness. This is particularly true of the chapters on sensation, perception, memory, and action, as well as those mentioned above.

The book is written confessedly from the functional point of view. Psychology is defined in terms of behavior rather than in terms of consciousness. Consciousness as an object of study is subordinated to behavior, its importance being borrowed from its relation to the latter. However, the results of structural psychology are made much use of and are made rather more important in the treatment than the author's statements in preface and introduction would lead one to expect. The result is largely a coordinating of the functional-behavior form of treatment with the structural-consciousness aspect. It would seem that at the beginning of the study of psychology there is no great gain in making one type subordinate to the other, but that a coordination of treatment is more natural and useful for beginners.

As the discussion is so largely functional, considerable space is given to the nervous system and habit. Two features here may be noticed: first, the explanation of the nervous current in terms of chemical action, and secondly, the use which is made of what we may call the Sherrington theory of the synapse. This latter fits in well with the discussion, but it seems somewhat doubtful if, after all, the use made of the theory is much more than a renaming of certain known features of nerve functioning while the theory itself lacks convincing proof.

The general arrangement of the matter of the book is excellent. Habit, sensation, selection, and retention are first developed and are considered fundamental. The more complex operations are then explained in terms of the simpler. The structural elements are sensations and memories. Though all mental qualities come originally from sensation, the distinction is maintained between sensational and imaginal qualities. The author differs from some writers in being guided in classifying and enumerating sensation qualities by the doctrine of specific energies rather than by discrimination by introspection. In the treatment of feeling, we find affection as a mental element added to the sense and image qualities. The primary mental function is selection. This is fundamental in conscious life and is called attention or will as applied to mental content or to action. Professor Pillsbury's contributions to the solution of the problems of attention are well known, and this book is enriched by the results reached by his thorough investigations. The whole discussion of selection, attention, action, and will, is decidedly good, perhaps forming the best part of the book. On the same high level, however, are the topics sensation, perception, association, and memory, the laws of learning and of retaining and forgetting being especially well worked out from experimental data. Probably the least satisfactory chapters are those dealing with feeling, emotion, and reasoning. The three theories of feeling according to the author ought to be combined if feelings are to be under-



stood in their entirety. Perhaps an attempt to combine them in a single statement would be useful to the student. The chapter on the emotions is rather disappointing from both functional and structural points of view. The chapter on reasoning is rather more logical and rationalistic than one might expect from an experimental psychologist. These are minor defects along with the general excellence of the work. It is a scientific text, pedagogically well arranged and presented. On the whole, as a first book in psychology, it is admirable both in design and in execution.

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*The Moral Life.* W. R. SORLEY. Cambridge: University Press. 1911. Pp. 147.

Since this handbook on "The Moral Life and Moral Worth" is written for the general reader rather than the philosophical student, it is not unfair to discuss the work from the standpoint of the amateur ethicist. And such a person will be apt to feel vaguely dissatisfied with the rigid distinction made between the historical treatment of the moral life and that from the view-point of validity, or judgment of worth. The author announces at the beginning his intention to treat the subject exclusively from the latter point of view. Then follow chapters devoted to an orthodox presentation of the five official Greek virtues, with a slight concession to modern ways in the shape of an inclusion of Industry, Thrift, and Prudence, and a short discussion of Freedom and Equality. But is this traditional outline, this static and coldly harmonious judgment of moral worth, the most profitable and fruitful way of viewing the subject? People are so incurably dynamic in their philosophy to-day that they can not find in this cross-section of the perfect character, this instantaneous photograph of the perfectly developed moral man, an adequate basis for judgment.

The moral life is a process of the moralization of life and it can be judged only as a process. It can not be stated in terms of "qualities" that we "possess," but rather as a life that emerges and grows out of our reactions to successive crises, which we meet out of our store of instinctive tendencies and traditional ideas, and the peculiar individual trend of our reactions. Out of the jostlings and rubbings and settlings-down of these reactions and habits there slowly emerges the moral life. And in our judgment of this product lies the true moral worth.

The study of a process of the forms of control and influence over human behavior, and of the lines of reaction, is the only kind of "moral philosophy" that will prove very satisfactory to-day. Such a book is that of Professors Dewey and Tufts; in their work, the moral life smacks of reality; its nature is intelligible because its development is intelligible. By the side of it Professor Sorley seems to present a mass of cold abstractions. Some general readers may feel the fine, healthy glow of the traveler in high and rarified altitudes of philosophic thought, but the radically minded will be apt to feel that they have asked for bread and have been given a stone.

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REVUE PHILOSOPHIQUE. December, 1911. *La contagion des manies et des mélancolies* (pp. 561-583): G. DUMAS. - For manias and true melancholias the hypothesis of contagion is no more acceptable than for mental confusions. *Positivisme, criticisme, et pragmatisme* (pp. 584-605): L. DUGAS. - A careful analysis of the pragmatic elements in these three points of view. *L'introspection* (pp. 606-626): L. DUGAS. - Vindication of introspection as the fundamental, original, and peculiar method of psychology. *Analyses et comptes rendus*. E. Tassy, *Le travail d'idéation*: FR. PAULHAN. *Philosophie und Religion in Darstellungen* (par divers auteurs): J. BENRUBI. L. Cuénot, *La genèse des espèces animales*: F. LE DANTEC. H. M. Bernard, *Some Neglected Factors in Evolution*: G. SELIBER. E. Underhill, *Mysticism*: L. ARRÉAT. Bohn, *La nouvelle psychologie animale*: J.-M. LAHY. Dr. G. Stroehlin, *Les syncinésies*: G.-L. DUPRAT. S. Boirson, *La coéducation*: G.-L. DUPRAT. J. Rogues de Fursac, *L'avarice*: L. DUGAS. *Revue des périodiques étrangers*.

REVISTA DI FILOSOFIA NEO-SCOLASTICA. December, 1911. *Il successo di Enrico Bergson* (pp. 614-630). The success of Bergson's philosophy depends upon the abuse of intellectualism during the preceding generation, but sooner or later intellectualism will get the upper hand again and Bergson's reputation as a philosopher will be permanently eclipsed. *Essenza ed esistenza* (pp. 631-657): G. MATTIUSI. - In the divine nature, essence and existence are identical; in finite beings, on the other hand, there is a real distinction between the two concepts. *Lo studio sperimentale del pensiero e della volontà* (pp. 658-669): A. GEMELLI. - An account of some recent experimental studies (Ach, Michotte-Prüm) on the voluntary act, its antecedents and its motives. *Note e discussioni*. *Cronaca scientifica*. *Analisi d'opere*. A. Gemelli, *Sui rapporti tra scienza e filosofia*: D. D'ALBA. F. Paulsen, *Introduzione alla filosofia*: P. ROTTA. J. Geyser, *Grundlagen der Logik und Erkenntnislehre*: E. CHIOCCETTI. L. Profumo, S.J., *Corso di filosofia elementare*, G. M. PETAZZI, S.J. A. Bonucci, *Verità e Realtà*: P. ROTTA. A. Tari, *Saggi di estetica e metafisica*: R. FUSARI. A. Cappellazzi, *Le Categorie di Aristotele e la filosofia classica*: P. G. P. E. Krebs, *Meister Dietrich*. *Sein Leben, seine Werke, seine Wissenschaft*: B. NARDI. J. Zeitler, *L'idée de l'état dans Saint Thomas d'Aquin*: A. MASNOVO. E. Caird, *Hegel*: E. CHIOCCETTI. F. von Hügel, *Religione ed illusione*: G. TREDICI. *Note bibliografiche*. *Somnario ideologico*.

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## NOTES AND NEWS

THE fifth annual Congress of the *Gesellschaft für experimentelle Psychologie* was held in Berlin, April 16-20, under the presidency of Professor G. E. Müller. There was a large and distinguished attendance of German psychologists, and papers were read by Professors Müller, Külpe, Sommer, Goldscheider, Vogt, Lippmann and more than thirty others. Representatives from almost all of the countries of Europe were present, England's delegation including Professors McDougall, Myers, and Spearman. From America, Professors W. F. Dearborn, L. J. Martin, A. Meyer, H. Münsterberg, and R. S. Woodworth, were in attendance. Extensive exhibitions of psychological apparatus and of the methods and results of applied psychology were held in connection with the congress. The meeting in 1913 will be held in Göttingen.

PROFESSOR WILLIAM JAMES's letters are being collected for biographical purposes, and any one who has any of his letters can render assistance that

will be highly appreciated by addressing Henry James, Jr., 95 Irving St., Cambridge, Mass. Casual or brief letters may have an interest or importance not apparent to the person preserving them; and news of the whereabouts of any of the late William James's letters will be gratefully received.

DR. EUGEN KUEHNEMANN, professor of philosophy at the University of Breslau, Germany, and recently German exchange professor at Harvard University, has been appointed as the first German university professor to occupy the Carl Schurz memorial professorship established last year in the University of Wisconsin by German-American citizens of Wisconsin and friends of the university.

THE Annual General Meeting of the Mind Association will be held in Trinity College, Cambridge, on Saturday, June 1, 1912. On the afternoon of that day the London Aristotelian Society will hold a symposium, to which members of the Mind Association are invited, on "Purpose and Mechanism." Papers will be read by Professors W. R. Sorley, A. D. Lindsay, B. Bosanquet, and G. F. Stout.

PROFESSOR FREDERICK E. BOLTON, professor of education and director of the school of education in the State University of Iowa, has accepted a call to become head of the department of education in the State University of Washington at Seattle, and will begin his work at that place in September.

M. HENRI POINCARÉ, professor of mathematical astronomy in the University of Paris, lectured at the University of London during the early part of this month, upon "*La Logique de l'Infini*," "*Le Temps et l'Espace*," "*Les Invariants arithmétiques*," and "*La Théorie du Rayonnement*."

PROFESSOR GEORGE GRANT McCURDY will be the delegate from Yale University to the International Congress of Anthropology and Prehistoric Archeology to be held in Geneva, Switzerland, during the first week in September, 1912.

AMONG the recent lectures at the University of Illinois were three upon "Heredity" by Professor W. E. Castle, of Harvard University, and one upon "Morals and Moral Ideals of the Japanese," by Professor Inaze Nitobe.

CAMBRIDGE UNIVERSITY has recently received a gift of \$100,000 with which is to be founded a professorship for the study of the laws of descent, to be called the Balfour Professorship of Genetics.

PROFESSOR HENRY B. FINE has resigned the deanship of the faculty of Princeton University, but continues as dean of the department of science and as Dod professor of mathematics.

THE Philadelphia Branch of the American Philosophical Association held an unusually interesting meeting on April 18 to 20. President R. W. Keen gave the opening address.

THE REV. GEORGE WILLIAM KNOX, professor of philosophy and the history of religion in the Union Theological Seminary, died on April 25, at the age of fifty-nine years.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### CHANCE

MY purpose is to show that chance is an objective category; objective, that is, in the same sense as causation, space, quantity, or other accepted scientific categories. By a chance-event, I mean an event which has no cause; though a fuller definition will appear in the course of the argument. The question of the ultimate metaphysical status of the category will not be discussed.

That there are aspects of the physical world which are, in a sense, outside the pale of law and causation, is widely admitted among philosophers to-day. Professor Royce has shown<sup>1</sup> that the element of significance or value which resides in individual things can not be scientifically accounted for; Mr. C. S. Peirce has argued<sup>2</sup> for an ultimate indeterminism out of which grows a certain amount of law; James<sup>3</sup> and Bergson<sup>4</sup> have defended an irreducible spontaneity in all real events; Professor Palmer has lately advocated chance-combinations of causal series;<sup>5</sup> Cournot<sup>6</sup> and others in France have stood for a similar view. Admitting in general the truth of these positions, I wish to carry the argument somewhat further, to give the concept a more positive interpretation, and to place it firmly within the field of scientific categories. Not only is chance, as I believe, more than a mere name for our ignorance; not only is there a certain aspect of fact which is outside of causality; there is a perfectly definable, intelligible tendency in physical events toward variation from law, and this tendency is nearly, if not quite, as widely verified as laws themselves. I shall venture, then, to differ from

<sup>1</sup> "Spirit of Modern Philosophy," Lecture XII.

<sup>2</sup> *Monist*, January, 1891, April, 1892; also, incidentally, in October, 1892, January, 1893, and July, 1893.

<sup>3</sup> "Some Problems in Philosophy," Chapter IV.

<sup>4</sup> Principally in "L'évolution créatrice." As this is one of the main contentions of the whole book, specific reference is perhaps not needed.

<sup>5</sup> In "The Problem of Freedom," Chapter X.

<sup>6</sup> "Essai sur les fondements de nos connaissances." Many articles on the subject by others have appeared in the *Revue Philosophique*.

most of the previous views in regarding chance as a well-defined and, in one sense, a positive category *within* the scientific field or world of description.

Before we go to the evidence for this view, a word must be said as regards the subject of this investigation. It is not the pure or mathematical concept of chance which is here studied, but the empirical; and a failure to distinguish these might lead to misconception or misdirected refutation. The philosophy of scientific categories, toward which this paper aims to contribute, may proceed in either of two ways. It may study such categories *in abstracto*, as pure concepts and members of an ideal system of concepts, without direct concern as to their mode of application to experience; or it may study them, not as members of an ideal system of knowledge, but as their nature is revealed in actual scientific treatment of the facts to which they apply. The former method treats categories as instruments of exact knowledge and perfect determination, a purposive rearrangement of data, due entirely to the activity of mind, and dominated by its ideal purposes; the latter treats them as adaptations, rather, in which the ideals of the mind are less dominant and the intelligence of the knower is more subjected to the data. Examples of the former are the many recent works upon exact logic; of the latter, Bergson's definition of consciousness in "*Matière et Mémoire*," Dewey's definition of truth in "*Studies in Logical Theory*," Montague's definition of consciousness in the paper "*Consciousness a Form of Energy*."<sup>7</sup> In general the results of these methods will not agree, because they study different concepts. Causation as a factor in an ideal system of knowledge may be a very different thing from the causation that is used in the science of to-day. But to the philosopher both should be at least interesting. As to the question, which one is the ultimately correct category, that lies beyond the province of this paper.<sup>8</sup> I consciously choose the empirical concept of chance, seeking to know what, if anything, of the fortuitous is implied in the scientific methods and results of our time.

If we consider the world in cross-section, at one moment we seem to find many causes acting, which themselves bear little if any causal relation to one another. That I am at this moment speaking can not be causally explained, so far as we know, by the fact that the tide is just now turning in the harbor. That the tile on the roof is loosened by the wind and falls just at the moment I pass beneath it (to use the familiar example) may very well be fully determined by ante-

<sup>7</sup> In "*Essays Philosophical and Psychological in Honor of William James*."

<sup>8</sup> The clearest statement I have found, of the ideal or conceptual method, is in Professor Royce's "*William James and Other Essays*," pages 234 ff.



cedent causes; that I pass at that moment may be equally determined; but each of these series seems to be quite undetermined by the other. Here appears a loophole through which chance might enter the scientific realm; many thinkers have been so persuaded. And yet who knows that further scientific evidence might not show the two events related as the scales of a balance? It might be a case of Kantian reciprocity. My passing beneath the house jars the earth, the house, and the tile, however slightly; and if the tide did not turn just now when I speak, something would be wrong with the moon or sun, and who knows what meteorological conditions might immediately transpire, even to the destruction of all of us? It seems to me that we must await evidence on this point. Meanwhile I find nothing in the observed results to rule out a mutual determination of all these facts.

But there is another way in which events might be uncaused. We might consider, not a cross-section of the world at one moment, but a sequence. It is conceivable, whether credible or not, that in a series like the successive positions of a falling body slight variations from the straight path might occur, which were not caused by anything in the past history of that body or any other fact, past or present. Is there any evidence, in present scientific methods or results, of such phenomena? Is there any direct and positive implication of *uncaused* variations from exact law in any of the sequences of this world?

At the present date we have, thanks to the accurate measurements and tabulations of anthropologists, biologists, economists, meteorologists, and others who employ statistical methods, an enormous body of facts of the sort we are seeking. It has been found, for example, that the height of men and women, the length of various organs, the fluctuations of the thermometer, of rainfall, of prices, and so on, show a variation about a more or less ideal type or average. And what is more, the manner of variation is much the same throughout. To quote Professor Pearson: "From paupers to cricket scores, from school-board classes to ox-eye daisies, from crustacea to birth-rates, we find almost universally the same laws of frequency."<sup>9</sup> Nor is such variation confined to phenomena of living organisms. Besides meteorological facts already mentioned, we find that the exactest measurements in our physical laboratories show similar variations in the facts there recorded.<sup>10</sup> But with the exact delimitation of the field wherein such variations occur we are not concerned; enough that they are widely prevalent.

<sup>9</sup> "Chances of Death and Other Essays," page 20.

<sup>10</sup> Any work on statistics will give an idea of the wide extent of this fact of variation. See, e. g., G. U. Yule, "Introduction to the Theory of Statistics."

We may say summarily that there seems to be a tendency, when experiments are repeated again and again, for the results to vary more or less about an ideal standard, norm, or type. For we may regard each human individual, say, as a repetition of the experiment of producing a human being; each rainstorm as nature's repeated attempt to produce rain, etc. That many such experiments are being conducted simultaneously does not affect the logic of the situation, just as the result is indifferent whether we toss one penny many times or many pennies at once. The examination of large collections, or repetitions of similar phenomena, thus suggests what we could not discover from the single case, namely, that besides the general law which says "be so and so" there is another which says "be not quite so and so." Such at least is the superficial impression we get from the facts. Indeed it seems likely that had the science of statistics been organized as long ago as the other natural sciences, philosophers would scarcely have defended universal causation as frequently as they have done.

But superficial impression is far from demonstration. The mere fact of a wide-spread tendency to vary from a type is hardly the slightest evidence of real chance. Are not all the variations themselves caused? If you are taller than I am, surely there is a reason for it; if to-day's rain is heavier than last week's, atmospheric conditions will account for it. But let us look again at the variations. We said above that their manner was much the same everywhere. And, moreover, that manner is a rather remarkable one. When the numerical values are graphically plotted they reveal a fairly close approximation to the well-known curve of error, or probability-curve. *Exact* correspondence with that curve we do not get, of course; but perhaps no concept, curve, or standard ever fitted the facts exactly. Laws are certainly never exactly fulfilled, yet we accept them. Now this striking unanimity of the variations suggests that they are not completely accounted for, each by its particular causal antecedents, but that a special tendency must be invoked to account for this common property; and that, too, a tendency to vary fortuitously, since the probability-curve is just what would result, in the long run, from fortuitous variation. If a series of murders are committed in a city, or in several cities, with a cross drawn in blood on the forehead of every victim, we should reasonably infer that one man, or band of men, was the author of the crimes. Such coincidence would be the strongest kind of circumstantial evidence. Our case seems just like that. It is hard to resist the conclusion that there is a wide-spread tendency at work in nature, making each event a little different from what it would be if all were governed by absolute law.



But the belief in universal causation, at least within the sphere of science, is so ingrained in us by our modern education that it is not easily dislodged. *Must* this resemblance to the probability-curve be explained by a fortuitous tendency to vary? For, if there is anything less than a strong logical compulsion here, we can hardly abandon that widely attested concept of law. We must then ask whether the facts could not possibly be explained without the resort to chance. And in answer I shall try to show, first, that a special tendency to vary must be begged, and secondly, that this tendency must be such as to permit chance to the individual cases, though not to the group as a whole. No other explanation of the situation, I shall claim, will do justice to the facts.

First, then, can not the resemblance to the probability-curve be explained on the hypothesis of universal causation? Let us see how that hypothesis would work out. Consider the case of the heights of a large number of men in a given city. When their numerical values are plotted, we have an approximation to the said curve. The height of each man is undoubtedly dependent on many causes, such as inheritance, nourishment during years of growth, early health, open air, sunlight, amount of fatigue in early life, etc. Now if you take a great number of men, these causes are certain to vary greatly from man to man. They will combine very differently in the individual men, giving very different results. And if you take men enough, you will include all possible combinations of these many causes. And this is no affair of chance, but is certain to be the case. Every possible effect upon the height of a man will thus be realized, and this, as is well known, will give a result approximating the curve. No special tendency toward variation need be conjured up, therefore; the large number of ways in which the causes affecting growth will combine, guaranteed by the large number of men measured, will suffice to account for the facts. So much for the hypothesis of causation. As a matter of fact, it seems to be the view of many writers on the subject.<sup>11</sup> Yet I can not but regard it as unsatisfactory. That each variation is indeed due to many cooperating causes is indisputable. That it can be *wholly* explained by those causes is a very different matter. For it is a condition of the formation of the curve that all possible combinations be realized in equal numbers. And there is nothing in the causal explanation to ensure this. The mere fact that by taking cases over a wide enough area you get all possible combinations of causes will not determine that those different combinations occur in anything like approximately equal

<sup>11</sup> E. g., Venn, "Logic of Chance," page 475, footnote. Jevons, "Principles of Science," page 196. Laplace, "Philosophical Essay on Probabilities," page 4.

numbers. But they do so occur. Accordingly, I think we are driven to say that over and above the known and unknown causal laws there is a special tendency, active in nature, to realize in the long run every possible combination of causes in equal numbers. And since the individuals that vary, whether they be human heights, or organs, or prices, or temperatures, or what not, are themselves the products of many causes, we may perfectly well say that individual phenomena themselves tend to vary equally in all possible directions about a type. I say "in all *possible* directions," for the variation is always, apparently, restricted to a rather narrow field. But within that field, at any rate, a clearly marked and positive tendency, in addition to the usual kinds of causation, seems a necessary hypothesis.

Of course "tendency" is a vague word and renders one liable to the accusation of hypostasising an abstraction. But it is here used as no more than a concept or formula to summarize a large class of facts. Exactly the same is true of such concepts as causation and of the particular causal laws to which we accord our belief. In a sense they explain nothing and solve no mysteries. I do not here claim for the tendency in question any deeper validity than we ascribe to the usual causal laws; but if the argument so far is correct, it should have at least as much validity as those concepts have. We should speak of a real tendency among events to vary about a type, even as we speak of a real tendency in bodies to fall, or a real tendency in heat to radiate.

We come now to the second point mentioned above. May not this tendency to vary be itself a unique kind of a causal law, strictly determined in every detail? If it is so orderly and regular on the whole, must it not be equally so in every particular case? The probability-curve is a very regular affair, and the variations of phenomena are, on the whole, very regular too. We find approximately the same proportion of heights above the mode, the same below, again and again. How could the collection be so orderly if the individual members were lawless? In short, we must now examine the individual instances, to see how this collective tendency should be interpreted in its application to them.

If the tendency to vary is operative through the series as a whole, it can not well be *nil* in any one event. What form, then, must it assume in one such event? There must be a tendency for each event to vary somehow from the norm. And further, it must be either predominant in one direction, or equal in all directions. On the latter alternative, the various directions counterbalance one another, and nothing can decide which variation will occur except some cause external to the event itself, or just chance. But it will not suffice us to appeal to an external cause to decide the matter. For, as we have



seen above, the appeal to such causes will not account for the collective character of the variations. It will not guarantee what must be guaranteed, that the variations will, in the long run, be fairly equal in all possible directions. If some particular, external cause decided, in each instance, which of the conflicting directions should prevail, we should not, in general, have in the series as a whole the all-inclusive manner of varying that we do find. The only alternative is chance. This and this only would seem to allow to the series that elasticity which enables each instance so to combine with the others as to give the total result we observe. If then the tendency to vary is in each instance equal in all directions, the actual result in that instance must be ascribed to chance.

But perhaps in each case the tendency to deviate is strongest in one direction, changing in accordance with some fixed and unknown law as the cases are repeated, and gradually covering all possible cases. This again would seem to reduce all to strict causation. To be sure the variations seem to be essentially irregular and disorderly, but that may perhaps be due to our ignorance. May not the tendency to vary be itself found an orderly and thoroughly determined affair if we could only study it carefully enough? To this question I must answer, no. The collective tendency toward *variation* seems to me inconsistent with causal determination of the individual case. It is, I think, generally agreed within the scientific field that one and the same cause can not, under constant conditions, produce varying effects. The cause we are discussing is the *tendency to vary*, which is, perhaps, in *some* sense, one and the same throughout the series. In so far as it is the same it must be supposed to produce, under similar conditions, much the same results. Now the conditions in all the individual cases are, to all intents and purposes, the same throughout. For our tendency acts *independently* of these special circumstances of each case. We have already seen that those circumstances could not guarantee the nearly equal distribution which occurs, and that consequently the tendency in question must be begged; and its action must be the predominant one if the result is to be secured. Each variation might then be treated as if it were due to that tendency alone. But *that* seems to me equivalent to having the conditions constant: the tendency to vary acts as if it were in isolation. It produces, however, as the experiment is repeated, ever-differing results. As this would seem inconsistent with the causal action of the tendency, such action must be denied, and we must say that the individual variations could not possibly be caused by one tendency. Even if we discovered some time a hidden regularity about the variations, an order expressed by some function beyond our present knowledge, that order would have to be regarded

as fortuitous. For the fact that there occurred different results from one and the same cause would be, for science, an inexplicable thing. Is it answered: "Perhaps your tendency to vary is not one tendency but a manifold complex of them"? The same inconsistency with causation would, I believe, hold even then. In so far as the complexity obtains, it means, after all, *at bottom*, many independent (*i. e.*, fortuitous) tendencies. In short, no *one* tendency can explain an ever-varying manifold of effects, and *many* tendencies, in so far as they can not be reduced to one, themselves constitute chance. It is the spreading or multitude of the effects that, in my opinion, renders a causal explanation impossible.

In cases of ordinary causation, the same cause does indeed produce ever-varying effects. But that is because it acts in ever-differing circumstances, and its action is influenced by those circumstances. Our tendency however can not, in the long run, be influenced by them. It acts *with* them and *in* them, but it must predominate over them if the equal distribution is to result. And it is this predominance, or causal isolation in a certain sense, which is the key of the situation. The manifoldness of the effects has nothing left to explain it but just its own manifoldness. From one isolated principle you can never get many results, and the many results can not combine into just one isolated principle.

The conclusion thus seems to be forced upon us that our hypothesis of an all-inclusive collective variation implies complete ambiguity in the single case. We have then obtained, if the argument is correct, the following principle: there is a tendency, in many phenomena, to vary with equal frequency in all possible directions from obedience to law, the variation being such as to give regularity for the group as a whole, chance for the individual member. Of course this tendency is hardly ever, if ever, completely realized. It is a limiting concept, like that of law and causation. But it gives what is to my mind a more positive signification to chance than has usually been ascribed to that notion. Not *mere* irregularity, but a tendency to spread, to diverge, so as to treat all possibilities fairly and give them an equal showing—that, somewhat metaphorically expressed, is what I think we should mean by chance. Of course these possibilities are not absolutely infinite in any one case; they are always restricted by the special circumstances of that case. Men probably can not vary much in height; temperatures in a given region range hardly more than a few degrees out of the long scale known to science; and in general the field of chance is relatively small. On the other hand, we seem to find some amount of chance accompanying almost every case of law. How wide the field of variation is, in each class of phenomena, would seem to depend on the nature of the



causes whose combination gives rise to the phenomena. But the whole matter is an empirical one. Our view gives no occasion for those caricatures, as Professor James called them, which would accuse its advocates of believing that *anything* might happen in a given situation. Nor does it offer a contradiction to the principle of causality. Each variation is the resultant of many causes together with a chance-deviation. It would not be regarded as a denial of the law of gravitation if I held up a ball in my hand. No more does it deny the constant action of causes to assert that there is another principle cooperating with them. But the view I defend would imply partly uncaused beginnings, arising to some extent *ex nihilo*. Should a last stand be made on the ground that the principle of the conservation of energy would forbid any uncaused changes, we need only remember that the measurements which prove the conservation of energy are themselves subject to the same kind of variation as that we have been exhibiting.

Finally let me indicate the relation of the above view to some previous arguments for and against indeterminism. It is well known that the more we learn about any given event, and the finer our measurements become, so much the closer is the approximation to exact law. The conclusion seems to many thinkers to follow inevitably, that a perfect knowledge, measurement, etc., would reveal perfectly exact law. It seems to be a case of a variable approaching a limit, as a hyperbola approaches its asymptote, or the series  $1 + \frac{1}{2} + \frac{1}{4} +$ , etc., approaches the number 2. But the mere fact that we get gradually nearer and nearer to exact law does not imply that the latter is the limit we are approaching. If a line be drawn parallel to the asymptote and beyond it, the curve gets nearer and nearer to that line, but does not approach it as a limit; and the series  $1 + \frac{1}{2} + \frac{1}{4} +$ , etc., gets nearer and nearer to 3 without approaching it as a limit. Such reasoning is then quite inconclusive. Moreover, it overlooks the fact, which is the pivot of my argument, that the deviations from exact law themselves, when recorded and measured, show a positive manner of varying which can hardly be explained by causation. It is in this point that the present argument differs, so far as I know, from all previous arguments for indeterminism. Even those of Bergson and James, as I understand them, fail to point out this positive difference between law and variation. They find a fluent quality about facts which forever escapes the static and rigid concept. Yet one might reply to them that our concepts approach the fluent changing reality as a limit. Even though those concepts never reach that limit, they allow no irreducible remainder, which can be definitely named, to stay outside the conceptual series. The advocate of universal law may say: "You can point to no one fact

which I can not come nearer and nearer to accounting for completely." The series  $\pi$  is never completed, yet any one term of it, which you can name, may be exactly computed. My own argument does, I think, escape this objection. It attempts to point out a well-verified character about facts which is not simply at present unexplained in detail, but would seem to be inexplicable in terms of causation, even to a perfect knowledge. The tendency to deviate, to spread out, to produce ever new sports, is indeed in substantial agreement with the Jacobean doctrine of a growing universe. But I do not think the inadequacy of any given concepts, or group of concepts, to account for motion, change, or life, can be regarded as a proof of a real spontaneity in those facts.

And the present argument goes even further. There seems to me no ground for saying that there is anything about spontaneity which is unintelligible, *i. e.*, beyond clear conception. Chance as here defined appears to be clear enough. It is a dual affair, with a collective and an individual aspect, and in my view each of these aspects is meaningless without the other. The collection is law-abiding, the individual members, within limits, ambiguous. But I do not see why ambiguity is not a perfectly clear concept. There would seem to be, then, no real reason for excluding spontaneity from the kingdom of the intellect. It should be included as a genuine scientific category, no more wonderful than law itself. Not the limitation of the understanding by something indefinable, mysterious, unaccountable, but the inclusion of that something within the sphere of clear definition, is what every thinker naturally desires.

W. H. SHELDON.

DARTMOUTH COLLEGE.

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#### EXPERIMENTAL ORAL ORTHOGENICS: AN EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF DENTAL TREATMENT ON MENTAL EFFICIENCY<sup>1</sup>

LITTLE if any attempt has hitherto been made to measure by scientific, objective means the mental improvement resulting from the correction or removal of the various physical defects which are now generally known to afflict the majority of school children. We are beginning to appreciate, from a number of recent studies, the extent of the retarding effect upon mental growth of such physical anomalies as adenoids, hypertrophied tonsils, nasal obstructions, defective ears, eyes, and mouths; but no one has attempted to deter-

<sup>1</sup>Read before Section L, Education, of the American Association for the Advancement of Science, Washington, December 29, 1911.



mine experimentally the precise orthogenic effects which are believed to ensue from a definite course of combined prophylactic and operative treatment. And yet our whole system of medical school inspection and treatment must ultimately justify itself by its *demonstrated, verifiable* results—not by the opinions and assumptions, based on unaided observation, of schoolmasters, or medical inspectors, or school patrons, but by the comparable scores of a system of verifiable and demonstrable objective measures.

In the present paper we shall give a very brief sketch of the results of an attempt to determine by scientific, mental measures the influence of hygienic and operative dental treatment upon the intellectual efficiency and working capacity of a squad of 27 public-school children in Cleveland, Ohio (10 boys and 17 girls), all of whom were handicapped, to a considerable degree, with diseased dentures or gums and an insanitary oral cavity.<sup>2</sup> These children were the recipients of free dental treatment at the hands of the Cleveland Dental Society and the National Dental Association during the course of the experimental year, which began in May, 1910, and closed in May, 1911. The treatment included not only the filling of dental cavities, the treatment of the gums, the brushing of the teeth and gums after each meal, and the sanitation of the oral cavity, but the thorough fletcherizing of the food. Oral euthenics contemplates not only mouth sanitation and the carpentry of the teeth, but the complete mastication of the food. Instruction relating to mouth hygiene and correct eating habits was given at the school (Marion) by the chairman of the Oral Hygiene Committee of the National Dental Association (Dr. W. G. Ebersole), together with two demonstration meals. Follow-up work was done by an employed nurse, for the purpose of giving individual advice and instruction to parents and pupils, and for the purpose of ascertaining whether the pupils were faithfully following the instructions.

This research, it may be added, was the outgrowth of the nationwide school oral-hygiene campaign inaugurated in Cleveland in March, 1910, by the National Dental Association. My own connection with the movement consisted in suggesting, contriving and giving (in person or by proxy) five series of psychological efficiency tests at stated intervals during the experimental year. These tests were designed to measure any improvement or increase, which might result from the practise of the oral hygiene regimen sketched above, in the power of immediate recall (immediate visual memory span), in the capacity to form spontaneous and controlled associations, in the

<sup>2</sup> A more complete discussion of this research appears in "Experimental Oral Euthenics," *The Dental Cosmos*, April and May, 1911, pages 404 ff. and pages 545 ff.

ability to add, and in the ability to perceive, attend, and react to, certain visual impressions.

In the memory test the pupils were required to memorize, during a period of 45 seconds, as many figures as possible. 10 figures, each containing 3 digits, in large print on a cardboard were displayed before the class. Exactly one minute was allowed for writing. This test is thus based on the use of non-sense materials and furnishes a measure of the immediate visual memory span.

In the spontaneous association test the pupils were provided with a sheet of paper containing a column of 30 simple, every-day words. At a given signal they were told to turn the papers right side up and write opposite each word the first word suggested by it, irrespective of whether or not the suggested word was logically connected with the supplied antecedent or key-word. The time allowed was 85 seconds. The number of words written in a test like this furnishes an index of the speed of ideating or forming spontaneous associations—or, in other words, of the speed of thinking.

To measure the speed of forming controlled associations an antonym test was employed. In this the pupils were supplied with a sheet containing a column of 25 key-words, opposite each of which they were instructed to write (during 85 seconds) only that word which has the opposite meaning: *e. g.*, *better—worse*; *sunrise—sunset*. This test requires intelligent discrimination and demands a higher degree of associational efficiency than that required in the previous test.

In the test on the speed and accuracy of adding the pupils were supplied with a sheet containing 32 columns of figures, each column consisting of 10 one-place digits. They were told to add as many columns as possible within the time limits (2 minutes) without stopping to re-add any of the columns. This test gives a measure of the ability to form controlled numerical associations.

In the attention-perception test (A-test) a sheet was provided containing 26 lines of capital letters. The letters were printed entirely promiscuously instead of in proper alphabetical order. The pupils were told to start at the left end of the top line and proceed to draw a line through as many of the A's as possible within the time limits (100 seconds). They were specially cautioned not to skip any A's or to cross out any other letters. This test gives a measure of the speed and accuracy of perceptual discrimination, of the power of sustained attention, and, secondarily, of the speed and accuracy of manual reaction.

These five tests thus explore some of the fundamental mental traits or capacities. In all tests, and in all sittings, the pupils were uniformly urged to do their very best. A system of quantitative,



or combined quantitative and qualitative, scoring was worked out for each test.

In order that tests of this character may be used as measuring-rods for gauging the increased functional efficiency resulting from the given euthenic or corrective factor or factors, a number of essential conditions must be supplied.

First, each of the tests must be constructed in sets or series, so that some of the tests may be given before the treatment begins, and some during the course of the treatment, or after its close. In this investigation each test was arranged in six sets, numbered from 1 to 6. Tests 1 and 2 were given before treatment began. The average of these two pre-treatment tests, therefore, represents the pupils' initial efficiency. The last four tests were given during the course of the treatment, or after its close, so that the average of these represents the pupils' terminal efficiency. The difference between the two averages accordingly represents the gain (index of improvement) made during the course of the treatment. Or, instead of taking the average of the last four tests for the final efficiency, we may substitute the average of the last two. This plan seems preferable, because the last two tests were given from three to five months after the dental treatment had been completed for all the pupils, while tests 3 and 4 were given only one or two months after the beginning of the treatment for more than half of the pupils. Sufficient time had, therefore, not elapsed to allow the orthogenic effects to become operative, at least not in maximal degree, at the time of the third and fourth tests.

Secondly, the sets must be so constructed that all of the successive tests in the same set are uniformly difficult. That is, test number 2 must be of the same difficulty as test number 1, test 3 the same as test 2, and so on. Manifestly, if each of the successive tests diminishes in difficulty, the increased efficiency shown is spurious or largely exaggerated. Contrariwise, if each successive test increases in difficulty the actual improvement will be minimized or counteracted. Considerable pains were taken to make all the tests of a given set equi-difficult. Elsewhere evidence has been adduced to show that the tests were fairly uniform in difficulty.

Thirdly, the conditions of giving the tests must be strictly uniform in all the successive sittings. These conditions refer to the character of the explanations, the use of incentives or suggestions, the constant putting forth of maximal effort by the examinees, the withholding of assistance or fore-knowledge of the test materials, the seating of the pupils, the hour of the day used for testing, the time allowed for the tests, and the employment of uniform super-

visory conditions. A scrupulous attempt was made in this research to realize these requirements.

Fourthly, to place the results upon a strictly comparable basis, a second squad of *untreated* children should be given exactly the same tests under precisely the same conditions. These children should come from the same social strata as the treated children, should approximately be of the same ages and suffer from the same degree of physical handicap. By means of the data obtained from such an untreated squad we should be able to determine the amount of improvement which is due to such contributing factors as familiarity, habituation, practise, and natural development (merely growing older), and the share which is solely due to the application of the orthogenic factor under consideration. Unfortunately it was not possible for me to get such a squad as this organized during the experimental year.

Fifthly, and finally, the factor or factors whose orthophrenic influence is to be measured must be investigated under "controlled conditions." One must make certain that the factor is constantly operative in the treated squad, and that it is inoperative in the untreated squad. In this investigation the oral hygienic measures were subject to a fair degree of control. It was the duty of the employed nurse to see that the pupils conformed strictly to the requirements.

What, now, do the results show with respect to the influence of the dental treatment upon the working efficiency of the pupils? In attempting to answer this main question we shall also refer briefly to a number of accessory facts brought out in the investigation. One of these facts is the circumstance that while the boys manifested a higher degree of efficiency than the girls in all tests except the perception test, the indices of improvement were about the same for the two sexes, whence the boys' manifest superiority in the efficiency scores is not paralleled by a corresponding superiority in the improvement indices. Similarly the amount of improvement was about the same for the older and younger pupils, a result not entirely in accordance with expectation, for it is currently believed that the benefits derived from the correction of physical defects are greater the earlier in the child's career the defect is corrected. This is believed to be true particularly as regards nasopharyngeal obstructions. But so far as the mal-effects of dental defects are concerned there are no significant age differences. Pupils between the ages of 11 and 15 appear to profit in equal degree, irrespective of sex, from the broad application of community mouth hygiene.

On the other hand, the individual differences between the pupils in all tests are significant. The differences are quite as large as the differences frequently brought to light in other psychological and



pedagogical experiments on pupils of the same age or school grade. Some pupils show a high degree, others a low degree, of proficiency; and some pupils make marvellous gains while others gain very little, or not at all, or actually lose in efficiency. It is therefore apparent that experiments of this sort, which are based on only a few pupils, are at best only suggestive, and that valid inferences or conclusions must be based on the central tendencies or average results of a considerable number of pupils.

Not only do we find these large individual differences in the efficiency scores and improvement indices, but the fact that a pupil gains much in one test does not warrant the belief that he will gain much in all the other tests. Quite the reverse may be the case. Thus a list of the 5 pupils, who made the *smallest* improvements in each of the 5 tests, was found to contain 19 of the 27 pupils, while the list of the 5 pupils, who made the *greatest* gain in each of the 5 tests, included 13 pupils. But not a single pupil was enumerated among the 5 *poorest* in *all* the tests, nor was a single pupil enumerated among the 5 *best* in *all* the tests. On the other hand, 8 of the pupils, ranking with the 5 poorest gainers in one test or another, also ranked with the 5 best gainers in one test or another. While 2 of these showed little improvement in 2 tests, they nevertheless made large gains in 2 tests. It is thus apparent that many pupils who gain little in some tests may improve remarkably in others. But it is worthy of remark that only 1 of the 3 pupils who were enumerated among the *best* gainers in 3 or more tests was included among the *poorest* gainers, while none of the 3 who were among the poorest in 3 tests took rank with the 5 best in any of the 5 tests, so that there is a certain amount of correlation between the indices of improvement in the various tests, justifying the conclusion that pupils who improve very slowly in *several* tests will not take place with the best ground-gainers in any of the tests. Such pupils are probably suffering from general impairment or marked retardation. But teachers must recognize that a child who gains little along one line of mental action may be developing normally, or even supernormally, along other lines. His capacity for development can not be determined from the improvement indices of one trait. Scientific pedagogy will make little progress until this fact is recognized, so that the educational activities may be adjusted to meet individual developmental idiosyncrasies.

Although there are these individual differences the character of the *central tendencies* is unmistakable: there is a *decided gain* in every test, and not only are the gains decidedly more frequent than the losses, but the largest gains are invariably emphatically larger than the largest losses. This may be seen from the following data

for each test, based on the average scores of tests 1 and 2, and the averages of tests 5 and 6:

*Memory:* 8 pupils lost in amounts varying from 5 to 15 per cent., while 19 gained in amounts varying from 0 per cent. to 116 per cent. The average gain for all pupils amounted to 19 per cent.

*Spontaneous association:* 2 pupils lost, the one 18 and the other 43 per cent., while 25 gained from 2 to 162 per cent. The average improvement amounted to 42 per cent.

*Addition:* 1 pupil suffered a loss of 13 per cent., 26 gained from 6 to 125 per cent., while the average improvement was 35 per cent.

*Associating antonyms:* all the pupils gained in amounts varying from 33 to 666 per cent., the average gain being 129 per cent.

*Perception-attention:* all gained in amounts varying from 19 to 101 per cent., the average improvement amounting to 60 per cent.

It is thus evident that the gains varied considerably in the different tests, and that the largest improvement occurred in the antonym, attention-perception, and spontaneous association tests. The average gain for all tests amounted to 57 per cent., truly a remarkably large gain.

How large a percentage of this significant gain is due solely to the improved physical condition of the pupils, which resulted from the treatment? This question does not admit of a categorical answer in the absence of parallel data from an untreated squad. But that a very large share is directly due to the dental treatment is indicated by the fact that most of these pupils were laggards or repeaters, pedagogically retarded from 1 to 4 years. During the experimental year, however, only 1 failed of promotion in the school work, while 6 completed 38 weeks' work in 24 weeks, and 1 boy did 2 years' work in 1. This indicates that the pupils' physical condition had been so bettered that they were able to profit by the instruction, to form habits from practise, and to improve mentally as a result of increasing maturity. We may therefore conclude that if it be granted that a part of the gains manifested in the psychological tests resulted from practise and increasing maturity, the gains are still significant as showing that these pupils were making normal progress during the experimental year, while many had failed to do so during the preceding year, as indicated by the records of pedagogical progress. It may be doubted, however, that the practise effects were very considerable, partly because of the brevity of the tests and the length of the intervals between some of them, and partly because of the counteracting effect of the growing monotony.

It is also significant that the regularity of attendance improved considerably during the experimental year, owing to the improved physical and mental condition of the pupils. During the preceding



year many were quite irregular, because of toothaches, bodily indispositions, chronic weariness, or distaste for the school work; 5 were obliged to carry truancy cards, while during the experimental year it was not necessary to issue any of these cards; and several boys, previously regarded as "incorrigible," became tractable and gentlemanly. The improved physical and mental health of many of the pupils, which was noticed by the teachers, commented on by the parents, and fully realized by the pupils, was also made manifest in a more buoyant spirit, a healthier complexion, and an improved disposition and deportment. That a large share of the gains in the psychological tests, say at least one half on a conservative estimate, can be directly ascribed to the oral hygienic regimen, is undoubted, I believe.

This experiment, then, furnishes the first demonstration by means of controlled, serial, experimental tests, extending throughout a calendar year, of the psycho-orthogenic effects of the application of the broad principles of community mouth hygiene. The conclusions which follow from the results of the research are of far-reaching importance to the state and nation.

There is probably no phase of the modern child-welfare movement which merits deeper scientific study by qualified experts than the relation of normative physical health and growth, and of normative pedagogical and psychical development, in school children, to a well-conceived plan of physical and mental orthogenesis. No phase of the problem of national conservation or racial eugenics more nearly affects the very fundamentals of human existence. Our greatest national asset is the normal, healthy child. It would seem that our child-welfare and social-betterment workers could more profitably apply themselves to the scientific determination of the physiological, psychological, and social causes of physical and mental inefficiency, and the discovery of scientific, corrective measures on a community basis, than to devote their resources to the mere gathering of statistical data. The largest contribution to the permanent betterment of the race will be made by those workers who will undertake, on an adequate scale, genuine, scientific investigations into the actual, demonstrated effects of the application of various orthogenic measures of a physical and mental character. No such investigations are anywhere being prosecuted on an effective basis, notwithstanding that no one *knows the actual, proven effects* on the child of the application of various physical and psychological orthogenic measures or various pedagogical methods and devices. Our knowledge in this field is largely pretense and illusion. In no field of modern enterprise has there been such a lame attempt made to *measure results scientifically*, as in education. Indeed, we do not as yet so much as possess any scientific measures of educational results: the very conception of

"measuring results in education" is a product of very recent industrial thinking. Is it not time that our large research foundations begin to treat more fairly the problems of human conservation and particularly those of child orthogenics? A million dollars spent in orthogenic investigations will accomplish immeasurably more for the welfare of the human race than tens of millions devoted to the cataloguing of the stars of the heavens or exploring the trackless wastes of the polar regions.

From the results of this investigation the conclusion is suggested that the desirability of establishing *dental clinics* in the public schools for free inspection and treatment should present itself to the taxpayer as a simple business, if not a humanitarian, proposition: the clinics are an economic means to an economic end, namely, the paying of proper dividends on the capital invested in the schools. According to the best estimates there are 6,000,000 retardates in the public schools of the country, or about one third of the entire school population. One sixth of all the pupils are repeaters. It costs the country \$27,000,000 to educate every sixth child once, twice, or three times in the same grade. That part of this enormous waste, which is ascribable to the presence of those remediable physical defects in the children which exert a retarding influence upon the mental processes or which cause children to stay away from school, is entirely preventable. Is it worth while to attempt to save this waste? Is it worth anything to the child to enable him to attend school more regularly and thereby increase his chances of promotion? Is it worth while to the repeater to shorten his stay in the schools? Is it worth while to enable him to attain a higher level of academic efficiency? Is it worth while to remove physical obstacles which may lessen his efficiency for life? Is it worth while to the taxpayer to eliminate, so far as possible, the necessity for the extra financial burden which he must assume for instruction that should have been done satisfactorily the first time? There can be none but an affirmative answer. One of the means for accomplishing these desirable results appears to be the establishment of departments of orthogenics in the public schools. But these departments must be given a broader scope than are the present departments of medical inspection, and must be under the skilled direction of health officers who are experts in applied child or clinical psychology, corrective pedagogy, and preventive and corrective hygiene.

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## DISCUSSION

## LETTER FROM PROFESSOR POULTON

THERE are many points which it would be interesting to discuss in Mr. Francis B. Sumner's review of my book, "Charles Darwin and the Origin of Species."<sup>1</sup> I should, however, have abstained from troubling you were it not for Mr. Sumner's quotation of Professor Punnett's extraordinary misstatement of the modern Darwinian view.<sup>2</sup> For some time I had been intending to correct this curious blunder, and now that it has been quoted in your pages and even gives an ill-founded relief to Mr. Sumner, I feel that the time has come.

Professor Punnett is speaking of two African species of the Danaine genus, *Amauris*, respectively mimicked by two Nymphaline butterflies found in the same localities. The two Danaines are *Amauris niavius dominicanus* and *Amauris echeria*; the two Nymphalines, *Euralia wahlbergi* and *Euralia mima*. All four are figured on Plate VI., facing page 134 of "Mendelism." Mr. G. A. K. Marshall, in 1902,<sup>3</sup> suggested that the two *Euralias* are probably forms of the same species, but the proof was not finally obtained until 1909 when the late Mr. A. D. Millar, of Durban, bred both forms from a single female.<sup>4</sup> There is good reason to believe, as Professor Punnett states,<sup>5</sup> that the relationship between the two forms is Mendelian, and I can now further add that there is no doubt that *mima* is dominant and *wahlbergi* recessive. This conclusion is founded on the recent experiments of my friend, Mr. W. A. Lamborn, on the corresponding forms in the Lagos district, viz., *dubia* (= *mima*) and *anthedon* (= *wahlbergi*). Details of these experiments were communicated a few weeks ago to the Entomological Society of London, and will appear in the *Proceedings* for the present year. Now for Professor Punnett's statement: "On the modern Darwinian view certain individuals of *A. dominicanus* gradually diverged from the *dominicanus* type and eventually reached the *echeria* type, though why this should have happened does not appear to be clear. At the same time those specimens [of *Euralia*] which tended to vary in the direction of *A. echeria* in places where this species was more abundant

<sup>1</sup> This JOURNAL, Vol. IX., pages 159-161.

<sup>2</sup> "Mendelism," page 134. This, at least, is the reference in the third British edition, 1911, of Professor Punnett's work. The footnote on page 160 of THE JOURNAL OF PHILOSOPHY gives page 144.

<sup>3</sup> Trans. Ent. Soc. London, pages 491-2.

<sup>4</sup> Proc. Ent. Soc., London, 1910, pages xiv-xvi; Trans., page 498.

<sup>5</sup> "Mendelism," page 135.

than *A. dominicanus*, were encouraged by natural selection, and under its guiding hand the form *mima* eventually arose from *wahlbergi*.

"According to Mendelian views, on the other hand, *A. echeria* arose suddenly from *A. dominicanus* (or *vice versa*), and similarly *mima* arose suddenly from *wahlbergi* (p. 134). . . . On this view the genera *Amauris* and *Euralia* contain a similar set of pattern factors, and the conditions, whatever they may be, which bring about mutation in the former lead to the production of a similar mutation in the latter" (p. 135).

Although Professor Punnett ought to be competent to express "Mendelian views," I am pretty confident that he will be unable to find a single Mendelian writer who would accept his assumption about the origin of the two species of *Amauris*. But, however this may be, it is quite certain that no Darwinian, modern or ancient, and certainly no student of insect systematics, has committed himself to the belief that one of these two Danaïne models has directly arisen from the other.

The late Dr. F. Moore, in his revision of the Danaïnæ,<sup>6</sup> placed *echeria* and *dominicanus* in separate genera. In this he was probably wrong, but they are certainly widely separated. *Amauris niavius niavius* of the west, together with the eastern sub-species, *niavius dominicanus*, occupies an isolated position in the genus *Amauris*, and it is absurd—I can use no milder word—to suggest that *echeria* arose directly from either of them. Hence, the whole of Professor Punnett's assumption of a parallelism in origin between model and mimic, which Mr. Sumner finds so comforting, falls to the ground.

May I say in conclusion that, although the relationship between the two mimetic forms of *Euralia* is undoubtedly Mendelian, I can not believe that one of them arose suddenly from the other? I believe that any one who looks at Professor Punnett's Plate VI. will hesitate to accept the view that the details of either of the two mimetic patterns—reproducing with great precision the pattern of a species belonging to a different sub-family—arose all at once from the other by mutation.

I have, furthermore, some evidence in support of the conclusion that the origin of the mimicry was gradual. Another closely related species, *Euralia dinarcha*, presents on the west coast of Africa two forms very roughly resembling the Danaïne models which are so won-

<sup>6</sup> *Proc. Zool. Soc. London*, 1883, page 201. Dr. Moore placed *echeria* and an allied species in *Nebroda*. Aurivillius in his great "Rhopalocera Æthiopica" places *niavius*, including the eastern form *dominicanus*, second and *echeria* fifteenth in the genus *Amauris*.



derfully mimicked by the forms *anthedon* and *dubia* of the allied species. I very much hope that Mr. Lamborn will be able to breed *E. dinarcha*, and ascertain whether the Mendelian relationship exists between its two forms.<sup>7</sup> But whether this is so or not, there can be little doubt that these forms exhibit to us an initial stage in an evolutionary journey which has been carried very much further by *anthedon* and *dubia*.

There are other interesting facts which remain to be further investigated in the Mendelian relationship of these mimics. Mr. Lamborn informs me that the recessive form *anthedon* shows a well-marked tendency to appear seasonally; so that, during part of the year, he finds only this form on the wing. Then, later on, *dubia* suddenly appears. Such a phenomenon is extremely difficult to explain on ordinary Mendelian lines. Either we are faced by some undiscovered aspect of Mendel's law or the dominant form must have the power of lying dormant in some one or more of its stages, and then suddenly appearing. Against this latter hypothesis is the fact that in the seven large families bred by Mr. Lamborn, and now in the Oxford University Museum, there was not the slightest evidence of any difference between the two forms in this respect.

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### PROFESSOR DEWEY'S "AWARENESS"

IT is a shame to be asking Professor Dewey to take up so much time in answering what are regarded as irrelevant questions. But he has been so good in the past that I am going to take the liberty of putting two more questions. I shall put them entirely in Mr. Dewey's own words, so far as I can; and I shall request Mr. Dewey to forget, so far as this is possible, that in my former queries I seem to him to have confused his position with my own. The two questions I wish to lay before him concern the passage on the basis of which my previous unfortunate questions were raised. That passage I shall requote here so that all the data pertinent to my present inquiries may be seen at a glance: "Of course on the theory I am

<sup>7</sup> Returning to Oxford at the end of the Easter vacation, I find a letter from Mr. Lamborn written March 29, 1912, from Oni Camp, near Lagos, telling me that he has now succeeded in obtaining eggs from both forms of *E. dinarcha*, and that the larvæ are doing well. We may hope for evidence, which will decide whether these two forms are a Mendelian pair, in a few weeks. I am very fortunate in having friends in the tropics who are so often able to supply us with just the very solutions for which we are looking with the utmost interest and eagerness.—E. B. P.

interested in expounding the so-called action of "conscience" means simply the organic releases in the way of behavior which are the conditions of awareness, and which also modify its content."<sup>1</sup> In this sentence it seems to be asserted that organic releases in the way of behavior are the conditions of awareness.

There are two other passages, in the essay from which the above quotation is made, which must be cited before I can put my questions. "Awareness means *attention*, and attention means a crisis of some sort in an existent situation; a forking of the roads of some material, a tendency to go this way and that" (p. 73). "A mistake is literally a mishandling; a doubt is a temporary suspense and vacillation of reactions; an ambiguity is the tension of alternative, but incompatible mode of responsive treatment; an inquiry is a tentative and retrievable (because intra-organic) mode of activity entered upon prior to launching upon a knowledge which is public, ineluctable—without anchors to windward—because it has taken physical effect through overt action" (pp. 69–70). A comparison of these two statements has led me, perhaps mistakenly, to think that for Mr. Dewey doubt, ambiguity, and inquiry are all cases of awareness. But these cases of awareness, if indeed they be such, are all said to be characterized by what seem to me to be not organic releases, but organic inhibitions.

My two questions, now, are these: (1) Where in these cases of awareness, if they be such, are "the organic releases in the way of behavior which are the conditions of awareness"? (2) Even if it should prove to be the case that what I have called organic inhibitions are included by Mr. Dewey within the more generic term "organic releases," why are these "organic releases" called "the conditions of awareness" rather than the awareness itself? In other words, if awareness be literally these suspenses and tensions and intra-organic modes of activity, can these suspenses and tensions and intra-organic modes of activity be properly called also the *conditions* of awareness?

There are of course several other questions that I am keeping intra-organic and therefore retrievable—two anchors weighed from the windward, I have found, are enough at a time. But if the above two questions are answered, I hope that I may get from these answers a clue to the answers of the others.

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<sup>1</sup>"James Memorial Volume," page 69.



## REVIEWS AND ABSTRACTS OF LITERATURE

*Laughter: An Essay on the Meaning of the Comic.* HENRI BERGSON. Authorized translation by CLAUDESLEY BRERETON and FRED ROTHWELL. New York: The Macmillan Company. Pp. vi + 200.

As usual, Professor Bergson is fortunate in his translators. There is a cockiness of expression in this version of "*Le Rire*" not altogether true to the suave dignity of the original, but the matter is such that the manner becomes it. Laughter, if Professor Bergson is right, is also cocky: an impertinence, he says somewhere, and it is with laughter that he here deals. His handling is in terms of the characteristic of Bergsonian philosophy. This is constituted by analytic dualisms of time and space, quality and quantity, life and matter. Time, quality, and life are real and potent, the very stuff and texture of existence: space, quantity, and matter are but negations and inversions thereof, mere appearances of the living onrush. The routine of the daily life, our social relations, our amusements, are combinations of this process with its negations—spatializations of time, intellectualizations of instinct, mechanizations of life. The exigencies of action make them so: they are the soul of use, and it is by its utilities that life maintains itself. There exists, however, a dimension in which utilities, with their concepts and generalizations, have no worth, where intellect is satanic rather than salvational, where only concrete and living individualities count, where the *élan vital* is encountered with no veils between. In this dimension lies the field of art, which, "whether it be painting or sculpture, poetry or music, has no other object than to brush aside utilitarian symbols, the conventional and socially accepted generalities, in short, everything that veils reality from us, in order to bring us face to face with reality itself." The older way of expressing this true and ancient doctrine is to say that art is intrinsic and expressive, the residual life extrinsic and utilitarian—sometimes.

But the art of comedy is excommunicate from this election. It deals not with individuals, but with types; it is external and observational, not internal and imaginative. Only averages are its care, and the inductive sciences its kin, in that in method and object its "observation is always external and the result always general" (p. 169). And this must be, since the essence of the comic is to be a mechanization of life, a petrification of the labile, a mechanization and petrification not, however, through and through, but capable of correction, and therefore subject thereto at the hands of laughter. But that laughter's function may be universal, its object, the comic, must be general and not individual. Comedy, hence, can not reveal reality.

Whether it is because of this metaphysical preconception that the analysis of objects of laughter is limited to French comedy from Molière to Labiche, or because such an analysis has led to this generalization in terms of the Bergsonian metaphysic, can not be easily said. Certainly, to find in addition that laughter must concern itself with something human, in its social relations; that it must be divorced from emotion, requiring a

"momentary anesthesia of the heart," points to the first alternative, for these are deducible from M. Bergson's interpretation of life and nature. And it is only such a deduction that would see the comic object everywhere as a "mechanization of life"—caricature, because it involves rigidity and disproportion of feature; repeated or inverted movements, because they have, when alive, a continually changing aspect; character, because it is funny when automatism is opposed to freedom, the persistent and unconscious self-admiration of vanity to the labile and scientific cautiousness of modesty.

Hence, it is not impossible that if M. Bergson had gone further afield for his cases of the comic, if, instead of confining himself to the comedy of literature and social life, he had sought out the occasions of laughter in nature and the other arts, he might have found it needful to modify his theory a little. Granted that it lightens the cases he cites, does it equally illuminate the laughter occasioned by tickling, by fear, by victory, by release from any kind of suppression or tension? In cases of this sort is not the *élan vital* really liberated from, rather than a victim of, the contingencies of mechanization? How does the "mechanization of life" explain the comic of music, of discords of pure colors that many artists find laughable? What human or social relation is actually to be seen in these things?

Then laughter itself—is it really "unemotional"? It is true that mirth is not anger nor pity nor horror nor joy, but need it be any the less an emotion on its own account? As well deny it of any other that has an identifiable individuality. That mirth is not a negative nor depressed emotion is obvious, that it is cruel and pitiless is often true, but then so are joy and anger among the exalted emotions, and fear, among the depressed ones. The "anesthesia" of the heart is common to all emotions, to say the least—that is why they are emotions. They are selfish, central, exclude alternatives. They consume their object, each according to its fashion. If laughter hurts, so does anger; if mirth is blind, so is joy. And just as these are not intrinsically corrective, neither is mirth. Arising first as an intrinsic expression of certain values in existence, it acquires a secondary character which is in no way essential or definitive of it. Its utility is an artifact, not a natural growth, and the other emotions can participate in a similar utility, for if people dislike being laughed at, they also dislike being stormed at or pitied, and seek to change the conditions which evoke these emotions.

Now are such conditions also mechanizations of life? And if they are not, may not some of those which evoke mirth also be innocent of that rigor? In nature there seem to be many such innocents. But even if there be one only, M. Bergson's subtle and fascinating book is rendered by it a "fallacy of composition" in which one object of mirth, viz., the petrification of the labile, is identified with all, and in which one incidental utility is converted into constitutive function. Yet not altogether, for at the end M. Bergson finds laughter also sympathetic, containing a "movement of relaxation," a relief from the strain of living, analogous to dream.



And perhaps in its fundamental and deeper nature, laughter is that and only that.

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*The Philosophy of Music: A Comparative Investigation into the Principles of Musical Esthetics.* HALBERT HAINS BRITAN. New York: Longmans, Green, & Co. 1911. Pp. xiv + 252.

After a somewhat laborious "Introduction," the treatise in hand comprises a "Psychological Analysis of the Elements of Music," with chapters on rhythm, melody, harmony, and musical expression, and a discussion of "The Philosophy of Music," considered with reference to the appeal and the content of music to musical criticism and to education.

The perspective of the "psychological analysis" may be indicated by a typical passage: "Rhythm . . . is an attribute of neural activity inbred in the nervous tissues through ages and cycles of development and growth before the mind was capable of true creative work such as both melody and harmony imply. Consequently the music of undeveloped tribes and of uncultivated taste is preponderatingly rhythmical. Instruments of percussion are the favorite musical instruments of men in the lowest stages of mental development" (p. 63). The combined authority of physiology and anthropology is characteristic of the day, but to the reviewer it seems too often to amount merely to the restatement of familiar facts in grotesque or pedantic terms, less a profit to learning than a trial of temper.

Professor Britan is better in his discussion of melody and harmony where neither protoplasm nor "primitive man" can be conveniently adjoined. In melody he finds the gist of "musical thought," to which he proceeds to apply the rhetorical criteria of unity, strength, grace, originality, significance. While these terms serve no deeper purpose than to point to certain obvious features of musical composition sufficiently analogous to their literary counterparts to justify the terminology, yet in this there is a real service. For in the first place, it is worth while to suggest for musical description a set of analogies other than the overused (and often absurd) ones of painting and architecture; and in the second place, in a thoroughly profitable chapter on "Musical Criticism," Dr. Britan points the practical need and application of his terms. As to the quite different matter of penetrating the nature and analyzing the appeal of melody, it can hardly be maintained that we are much advanced.

A suggestion that invites consideration is that the plaintive effect of the minor mode is due to the primacy of the major in the general ordination of our musical conceptions: "So here in the minor scale, when we feel the unrest and yearning it produces, we are yearning in reality for the more natural order of the major mode" (p. 146). This, of course, is but another application of the "expectation" theory to musical interpretation—like all the rest, still leaving with us, unsolved, the foundation of such expectancy.

A general key to Professor Britan's position is his excellent saying,

"There are no patterns in art, though we are endeavoring to establish certain principles" (p. 217). And most of the principles laid down will be generally accepted. Yet his book as a whole would certainly be more effective without the odd assumption that it constitutes a "pioneer work" in a field represented by a literature of which his seventeen prefatory "references" give small measure.

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## JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. January, 1912. *The Relative Legibility of Different Faces of Printing Types* (pp. 1-34): BARBARA ELIZABETH ROETHLEIN. - An experiment to determine the ease or difficulty that various printing types present in reading. The factors that produce legibility are given. The texture of the paper is not important. The modification of certain letters is urged. *The Psychology of the New Britannica* (pp. 37-58): E. B. TITCHENER. - The author has made a careful study of the articles that deal with psychology in the new Britannica. He finds little to commend and much to condemn. It seems that this new edition of the encyclopedia has not made an adequate revision of its psychological material. *The Function of the Several Senses in Mental Life* (pp. 59-74): EDMUND C. SANFORD. - A brief survey of the development of the various senses is here given. Several mental experiences are taken up and discussed in relation to the various senses. *The Relation of Practice to Individual Differences* (pp. 75-88): FREDERIC LYMAN WELLS. - The experiments indicate that a superior performance at the beginning is not attained with a sacrifice of the possibility of future improvements. *The Influence of Caffeine Alkaloid on the Quality and Amount of Sleep* (pp. 89-100): H. L. HOLLINGWORTH. - Small doses do not seem to disturb sleep. Doses larger than six grains impair sleep for most subjects. The effect is greatest when taken on an empty stomach. *Minor Studies from the Psychological Laboratory of Vassar College. Mediate Associations Studied by the Method of Inhibiting Associations: An Instance of the Effect of "Aufgabe"* (pp. 101-109): M. VALERIE ATHERTON and M. F. WASHBURN. *A Study of the Images Representing the Concept Meaning* (pp. 109-114): MARY W. CHAPIN and M. F. WASHBURN. *Recent Literature on Psychoanalysis* (pp. 115-139): DR. J. S. VAN TESLAAR. - A series of reviews of the following: (1) S. Freud, *Psychoanalytische Bemerkungen über einen autobiographisch beschriebenen Fall von Paranoia* (Dementia Paranoides). *Sonderabdruck aus dem Jahrbuch f. psycholanalytische und psychopathologische Forschungen*, III., 1911, 9-68. (2) Oskar Pfister, *Hysterie und Mystik bei Margaretha Ebner (1291-1351)*. *Zeitschr. f. Psychoanalyse*, I., 1911, 468-485. (3) S. F. Ferenczi, *Anatole France als Analytiker*. *Zentralblatt f. Psychoanalyse*, I., 1911, 461-467. (4) Otto Rank, *Das Verlieren als Symptomhandlung*. *Zentralblatt f. Psychoanalyse*, I., 1911, 450-460. (5) Albert Mohl, *Berühmte Homosexuelle*. *Grenzfragen des Nerven und Seelen-*



*lebens*, LXXV., 1910, pp. 80. (6) H. Bertschinger, *Heiligungsvorgänge bei Schizophrenen*. *Allgem. Zeitschr. f. Psychiatrie*, LXVIII., 1911, 209-222. (7) S. Freud, *Formulierung ueber die zwei Prinzipien des psychischen Geschehens*. Sonderabdruck aus dem *Jahrbuch für psychoanalytische und psychopathologische Forschungen*, III., 1911, 1-8. (8) Oskar Pfister, *Die psychologische Entratselung der religiösen Glosolalie und der automatischen Kryptographie*. Sonderabdruck aus dem *Jahrbuch f. psychoanalytische und psychopathologische Forschungen*, III., 1911, 427-466. (9) M. Wulff, *Beiträge zur infantilen Sexualität*. *Zentralblatt f. Psychoanalyse*, II., 1911, 6-7. (10) Jan Nelken, *Ueber schizophrene Wortzerlegungen*. *Zentralblatt f. Psychoanalyse*, II., 1911, 1-5. Alfred Binet (140-141).—A brief biographical sketch. *Book Reviews*. E. L. Thorndike, *Animal Intelligence*: L. W. SACKETT. C. S. Myers, *A Text-book of Experimental Psychology with Laboratory Exercises*: E. B. T. H. H. Britan, *The Philosophy of Music*: E. B. T. H. Bergson (translated by C. Brereton and F. Rothwell), *Laughter; an Essay on the Meaning of the Comic*: E. B. T. J. Welton, *The Psychology of Education*: W. S. FOSTER. William Brown, *The Essentials of Mental Measurement*: W. S. FOSTER. H. Addington Bruce, *Scientific Mental Healing*: W. S. FOSTER. Francisco Redi (translated by M. Bigelow), *Experiments in the Generation of Insects*. H. de Vries (translated by C. S. Gager), *Intracellular Pangenesis; Including a Paper on Fertilization and Hybridization*. R. C. Punnett, *Mendelism*. F. L. Wells and A. Forbes, *On Certain Electrical Processes in the Human Body and Their Relation to Emotional Reactions*. M. T. Whitley, *An Empirical Study of Certain Tests for Individual Differences*. E. Abramowski, *L'Analyse physiologique de la perception*. F. Boas, *Handbook of American Indian Languages*. J. R. Swanton, *Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico*. C. Thomas, *Indian Languages of Mexico and Central America and their Geographical Distribution*. J. W. Fewkes, *Preliminary Report on a Visit to the Navaho National Monument, Arizona*. J. W. Fewkes, *Antiquities of the Mesa Verde National Park: Cliff Palace*. W. Goodsell, *The Conflict of Naturalism with Humanism*. W. L. Rabenort, *Spinoza as Educator*. T. Schroeder, "Obscene" Literature and Constitutional Law: a Forensic Defense of Freedom of the Press. *The Social Evil in Chicago: a Study of Existing Conditions by the Vice Commission of Chicago*. Report of the Vice Commission of Minneapolis to His Honor J. C. Haynes, Mayor. W. J. Chidley, *The Answer*. G. E. Partridge, *An Outline of Individual Study*. W. Benett, *Justice and Happiness*. J. Rehmke, *Zur Lehre vom Gemüt*. J. W. H. Allen, *The Universities of Ancient Greece*. M. Offner, *Die geistige Ermüdung*. M. Offner (translated by G. M. Whipple), *Mental Fatigue*. M. Offner, *Dass Gedächtniss*. M. E. Thompson, *Psychology and Pedagogy of Writing*. W. H. Winch, *When Should a Child Begin School?* J. E. W. Wallin, *Spelling Efficiency in Relation to Age, Grade and Sex*. H. E. Cushman, *A Beginner's History of Philosophy*. L. J. Walker, *Theories of Knowledge: Absolutism, Pragmatism, Realism*. C. J. Deter, *Abriss der Geschichte der Philosophie*. F. Cumont, *The Oriental Relig-*

- ions in Roman Paganism. L. Busse, *Die Weltanschauungen der grossen Philosophen der Neuzeit*. P. Smith, *The Life and Letters of Martin Luther*. Book Notes. H. v. Buttel-Reepen, *Aus dem Werdegang der Menschheit*. Gina Lombroso-Ferrero, *Criminal Man According to the Classification of Cesare Lombroso*. Otto Klemm, *Geschichte der Psychologie*. William E. Castle, *Heredity in Relation to Evolution and Animal Breeding*. M. Sopote, *The Grades of Life*. Arthur F. Hertz, *The Goulstonian Lectures on the Sensibility of the Alimentary Canal*. James Allen, *Man, King of Mind, Body, and Circumstance*. Richard Hamann, *Asthetik*. George Trumbull Ladd and Robert Sessions Woodworth, *Elements of Physiological Psychology*. William McDougall, *Body and Mind*. George Drayton Strayer, *A Brief Course in the Teaching Process*. Edward L. Thorndike, *Animal Intelligence*. George Trumbull Ladd, *The Teacher's Practical Philosophy*. H. H. Schroeder, *The Psychology of Conduct*. M. Mignard, *La Joie Passive*. H. Addington Bruce, *Scientific Mental Healing*. Gustave F. Mertins, *A Watcher of the Skies*.
- Biuso, C. Prolegomeni ad una Psicodinamica. Rome: Albrighi, Segati, & C. 1912. Pp. 176. 2.50 L.
- Bosanquet, B. The Principle of Individuality and Value. The Gifford Lectures for 1911. London: The Macmillan Company. Pp. xxxvii + 409. 10s.

## NOTES AND NEWS

M. HENRI POINCARÉ's lecture at the Sorbonne on April 12 was as brilliant as it was instructive. He dealt mainly with the constitution of matter, and drew the attention of his hearers, the French Physical Society, to the objective reality of the chemical atom, which he considers to be now beyond dispute. He made a bold comparison of the free electrons within the atom to comets, while considering the tied electrons as equivalent to the fixed stars, and accepted the magneton of M. Weiss as the third component of matter. Hence, he said, we must consider the atom, if we accept the most probable hypotheses current, not as a system whose movements are ordered and ruled by definite laws, but as a world where reigns a disordered agitation of elements delivered over to chance. Yet this world is rigorously closed to us at present, and every atom constitutes, according to him, an "individual." M. Poincaré's lecture will do much to clarify the views of inquirers into the subject, and it is to be hoped that during his forthcoming visit to this country he may repeat some of the conclusions announced in it.—*Athenæum*, April 27.

PROFESSOR WILLIAM JAMES's letters are being collected for biographical purposes, and any one who has any of his letters can render assistance that will be highly appreciated by addressing Henry James, Jr., 95 Irving St., Cambridge, Mass. Casual or brief letters may have an interest or importance not apparent to the person preserving them; and news of the whereabouts of any of the late William James's letters will be gratefully received.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### DOGMATISM VERSUS CRITICISM<sup>1</sup>

THE attention of the members of this association has been directed in their recent meetings to the issue between idealism and neo-realism and within this issue especially to the problem of perception and the relation between consciousness and the object of consciousness. Personally I rejoice that the main issue is the center of our attention; but I regret exceedingly that we have turned to the problem of perception as the point where the two philosophical parties really divide, for I do not believe that the study of this problem will lead quickly and directly to mutual understanding, let alone, to any agreement. As a realist I am firmly convinced that this is not the fundamental problem at issue; I deny that it is even in general a fundamental *philosophical* problem. I am aware that the very name "realist" as a party name is thereby declared to be inappropriate and that most realists will disagree with me in what I am saying; still I can urge that party names do get chosen in a more or less accidental way and do often describe the tension or division of opinion regarding matters of momentary interest rather than the great underlying causes for this difference of opinion. Indeed the partisans themselves are often blind to the real ground of difference; and my point is, that in philosophy this is precisely the state of affairs which we should strive to avoid, because it is unphilosophical, and because it is bad methodologically. Moreover, our attention these days should be attracted not merely to a few men or to a local movement, but to a great international philosophical movement, a movement which, once it gets full headway, will mean a world-wide philosophical revolution. The realist should already know this; and the idealist, whatever his type of idealism, should awaken to the fact that the long and undisputed reign of idealism is about to enter upon troublous times. Such a movement as neo-realism has already shown

<sup>1</sup> A paper read before the American Philosophical Association, Cambridge, December 27, 1911. This paper borrows a few paragraphs from an essay in a forthcoming volume entitled "The New Realism."

enough symptoms to make evident that it is opposed to idealism of every form and variety from that of John Locke to the present-day pragmatism. No minor problem, but a wholly different attitude toward all philosophical problems is the true force center from which it derives its impulse.

What is this new attitude which forms the fundamental point at issue between the two philosophical parties? *It is dogmatism vs. criticism.* The neo-realistic movement is a return to dogmatism,<sup>2</sup> not to dogmatism in the specific sense of the seventeenth-century rationalism, but in the generic sense of the contradictory of criticism. Let me make my meaning explicit by summing up the rival theories in two sets of propositions. The defendant, criticism, maintains one or more of the following propositions: first, that in general the theory

<sup>2</sup>It should be distinctly understood by the reader that the word "dogmatism" is used throughout this paper in the narrow and precise sense above defined. The name is taken from Kant's "Critique of Pure Reason," where, whatever else it may mean, it denotes the contradictory of what Kant calls criticism. Unfortunately the word has other associations in Kant's mind and in the mind of the student of Kant, for it sometimes means specifically the *rationalistic* ontology of the Cartesian and Leibnizian philosophers, whereas neo-realism differs radically from this philosophy. For example, many neo-realists have a strong tendency toward an extreme empiricism and toward an abandonment of the substance-attribute notion as a fundamental notion in metaphysics. Again, the older realism was a representative realism, an epistemological dualism; whereas neo-realism is an epistemological monism. Finally, a modern dogmatism must of necessity differ from that of the earlier centuries, just because it has behind it two centuries of experience with criticism. That is, it is consciously and deliberately dogmatic, whereas the earlier dogmatism was naïve and was therefore easily misled into idealism and its so-called criticism. But in spite of these unfortunate associations, I believe the names, dogmatism and criticism, not only appropriate, but enlightening; for I think the neo-realistic movement to be a reaction against the whole enterprise of Locke, Kant, and their followers to get at a fundamental science, and not merely against their idealism. That is, neo-realism is not only a different theory of knowledge, but what is more important for metaphysics, a different doctrine as to the place of epistemology in the hierarchy of the sciences. As the names realism and idealism do not point out this difference clearly, I prefer the names dogmatism and criticism, which, if taken in their generic meanings as given by Kant, certainly indicate precisely this difference. Indeed I would go farther, for many contemporary realists are critics, and it is at least conceivable, no matter how remarkable, that some dogmatists may be idealists. My point may be summed up briefly in the following two sentences: Dogmatism is the contradictory of criticism and defines neo-realism negatively or by exclusion. Chiefly and perhaps only in this respect is neo-realism a return to seventeenth-century philosophy.

Since reading this paper I find that most fellow realists, with whom I have had opportunity to speak regarding the name dogmatism, disapprove altogether of it, because it suggests that the neo-realist is not an empiricist. Personally, I do not fear this misunderstanding of the name, though of course any name, realism included, will be misinterpreted by the careless and thoughtless reader.



of knowledge is logically fundamental or prior to all other sciences and to all other scientific procedure; secondly, that the theory of knowledge can ascertain the limits of the field of possible knowledge; thirdly, that it can determine ultimately the validity of science and of the methods of science and can correct the results of science with the authority of a court of final resort; and, finally, that it can give us of itself certain fundamental, existential truths usually called a theory of reality. In opposition to these claims, the plaintiff, dogmatism, maintains: first, that the theory of knowledge is not logically fundamental, that it is simply one of the special sciences and logically presupposes the results of many of the other special sciences; secondly, that the theory of knowledge is not able to show, except inductively and empirically, either what knowledge is possible or how it is possible or again what are the limits of our knowledge; and, finally, that it is not able to throw any light upon the nature of the existent world or upon the fundamental postulates and generalizations of science, except in so far as the knowledge of one natural event or object enables us at times to make inferences regarding certain others; in short, that the theory of knowledge does not give us a theory of reality, but, on the contrary, assumes a theory of reality of which it is not the author. Put in one proposition, the charge which neo-realism makes against the older theory is, *idealism is a vicious circle*.

All of this can be stated in a way that is less precise, but that is probably more suggestive. There are two prominent and radically different points of departure nowadays in our philosophical studies. One man, the idealist, is impressed with the facts and truths of psychology; and though he may protest that psychology itself is but one of the special sciences, he still seeks a philosophical foundation by means of a study of these facts and truths. The other man, the realist, though not blind to these facts, can not regard them as the most significant; rather he is impressed with the truth that the chief business of science is to demonstrate, and that logic is the fundamental science. *The one man* is temperamentally a *psychologist*; *the other a logician*.

What is the immediate result? Radical disagreement in two important places: for, in the first place, how can we get a common platform upon which we can discuss the problems of epistemology and come to an agreement as to what is their correct solution; and, in the second place, how can we come to the same opinion regarding the authority and the place of the sciences in the field of philosophical research? Let us consider each of these questions more at length.

In the field of epistemology, take the problem of perception and the relation of consciousness to its object. An entirely different

point of departure tends to keep asunder the two lines of research. The idealist has on his hands a fundamental problem, and his whole theory of existence depends logically upon the solution at which he arrives. From the study of our conscious life and of the knowing process within it, he must learn all that he has a logical right to assume. He must keep his entire research, as it were, confined within the stream of consciousness. If he looks beyond consciousness he must do so from within outward. May I apply to his problem the adjective *immanent*? The realist on the other hand, as a dogmatist, approaches the problem from without. He assumes not only extensive information regarding the knowing process, the function it fulfills in life, the relation between it and the bodily organism, but also extensive information regarding the physical and social environment and regarding the nature of the objects of knowledge. Logically, the whole conception of existence as taught in physics, chemistry, and biology is at his disposal to employ as a premise. For the one party, there is no non-mental world, or, if there is, it is unknowable. For the other party, not only is there a non-mental world, but it is well-known, or at least far better known than is the mental world. Such a fundamental difference in the array of information upon which the solution of the problems is to be based can only lead to one of two things: to the illusion that we agree because we adopt the same words, though our meaning is utterly different, or to a debate on the logical position of epistemology in science. In the latter case the idealist will protest that no problem can be more nearly fundamental than the nature of the very process by which we solve problems; and the dogmatic realist will retort: Show me the critical theory of knowledge that lives up to your good intentions, that does not assume what you deny me the right to assume, that is not a vicious circle.

A similar situation meets us when we turn our attention to the different attitudes taken toward the authority of science. Thus if we ask: Who is the great metaphysical discoverer and explorer? Is he the professional philosopher or is he mankind at large and above all others the investigator in the various fields of science? Or expressed in other words, who has been giving us and who is giving us our modern theory of reality, the professional philosopher or the great mathematicians, astronomers, physicists, biologists, and psychologists; such men as Galileo, Kepler, Harvey, Newton, Laplace, Lavoisier, Priestley, Dalton, Mayer, Darwin, Helmholtz, Clerk Maxwell, and Hertz? The idealist seems to answer, "The professional philosopher"; the neo-realist, "the scientific investigator and discoverer." The idealist appears to believe that the *most certain* information regarding reality, which we can possess, is that furnished by himself



and other philosophers. At best the special sciences are only relatively true or need to be translated into the language and thought of idealism. Whereas the neo-realist regards the exact sciences to-day, to be sure, not as infallible, but as by far *the most nearly certain* body of information man possesses. Now do not misunderstand these statements. The realist is aware of many a crude piece of metaphysics in this and that scientific treatise, of many metaphysical inconsistencies in the doctrines of every generation of scientists, and in those of almost every individual scientist himself. Indeed this is precisely why professional metaphysicians are needed, for the special scientist is too busy to explore thoroughly the foundations upon which his theories rest, especially during periods when science is growing rapidly. But the metaphysician is not needed to revolutionize these theories. On the contrary, his business is to think through, to make explicit, to organize, and to make evident to the world the theory of reality that the scientists are implicitly entertaining.

"Ah," the idealist will say, "this is positivism." The realist replies: "This is not positivism, for positivism is itself but a form of idealism and has in it precisely the error against which the realist protests. Its father was Hume, and, with him, it too would base science logically upon a theory of knowledge. True, there is this common feature—that the realist is inclined to oppose absolutism or any other claim to an infallible theory of reality. He sees that science grows by trial and error, that science has found no other ultimate method of procedure. The realist is in this sense an empiricist; yet, mark well, not because he bases his metaphysics upon a theory of knowledge, but because our whole scientific procedure is a tentative one. Science does not assert its results as certainties, but as probabilities. It admits that it has not full proof of any of its existential hypotheses. Thus the empiricism of neo-realism is not a theory of knowledge, but a confession that our theories are not based upon full and sufficient proof. Moreover, he denies that our theories of knowledge are any better off in this respect, for he sees no way of digging deeper down for some ultimate support for these theories than does the physicist for physics. To change the figure, he sees no immovable standpoint that can serve him as a fulcrum with the help of which his logical lever will enable him to move the world. He wishes that he could; but he is convinced that any attempt to do so, such as that of the Kantian or Hegelian transcendentalism, is an out and out vicious circle. In short his empiricism is dogmatism and differs radically from that of those idealists who are also empiricists.

Let me illustrate my point that the realist believes that we owe our metaphysics to science and not to some ultimate type of philo-

sophical research by giving two examples. Suppose a follower of Berkeley and a modern naïve realist to be disputing regarding the nature of the content of which we are immediately aware in perception. The Berkeleyan holding to an epistemological theory believes it all but self-evident that this content is mental or is made up of states of consciousness. In turn, of course, the realist maintains that this content is made up almost entirely of a non-mental world. Now my question is, why does the realist do so? Is it because he also draws this proposition as a conclusion from a theory of knowledge or perception? I reply, "No." It might even happen that he has no theory of knowledge or perception. Where does he get the proposition? My answer is, "Just where common sense and science get it"; and that means it is virtually an ultimate premise and not a conclusion at all. The realist can not come over to Berkeley's view because he can not see how to get there; for he sees no way of logically undermining the position of common sense and of science and of thereby being able to build a deeper foundation or substructure beneath science and common sense. Here then is where the two men differ. The Berkeleyan finds such an ultimate problem whose solution gives him a more nearly fundamental position than that of science. The realist beholds in this position a mere logical treadmill by which, no matter how long or how hard you labor onward, you end precisely where you started. To turn to a second illustration. Suppose a Kantian and a realistic empiricist to be discussing the nature of matter. The former would maintain that a study of the knowing process will throw light upon the question by showing what matter must be in order to be a possible experience. In short, there is a method by means of which we can in certain particulars anticipate the physics of all time to come. The realist would reply, "No, it is impossible, or at least it has never been done." In all such reasoning you Kantians are surreptitiously borrowing the fundamental postulates of the physics and of the psychology of the time; and then after you have read them into your theory of knowledge you read them out again. Twenty years ago you would probably have tried to show that mass must be a fundamental constant in all nature because of the constitution of knowledge; and your argument would no doubt have seemed plausible, because everybody then believed mass to be such a constant: but here to-day the ruthless facts are telling us that mass is a function of the velocity. In short, the realist will say, I fail utterly to see any method of research, other than that of the physical sciences, by which we can ascertain the fundamental postulates or principles of the true theory of nature. Hence I see no standpoint from which as a metaphysician I can judge regarding such matters more authoritatively than can the



physicist in his laboratory. Rather what I see is that the growth of physics and astronomy in the days of Galileo revolutionized metaphysics then, and that the growth of physics to-day is probably going to revolutionize the metaphysics of our time, too. Indeed it has ever been thus, for all the major discoveries of science have led to changes within metaphysics; and some of them, such as evolution, have led to great changes within the theory of knowledge itself.

To return to our main discussion: The dogmatist and the criticist will have a radically different methodology. If science is the source of my theory of reality my method of research must be a logical analysis of what science teaches; and if science is as yet quite unable to answer the questions I put to it, I shall simply have to wait. If, however, the theory of knowledge is the fundamental and most trustworthy source of my theory of reality, my method will be to pursue epistemological research and not to wait for the growth of any other science. Now this difference in method leads many critics to misunderstand neo-realism, charging neo-realism with an over-fondness for dialectic. But there is a radical difference between using logical analysis in order to ascertain, for example, what chemistry teaches or presupposes and using logical analysis to solve a chemical problem. No amount of mere logic could discover the weight of oxygen, but a man who never saw a chemical laboratory can learn from an encyclopedia what chemists assert to be the weight. In short, my point is that the employment of such logical analysis is a prominent trait of neo-realism and that it indicates not a return to that delightful occupation, spinning a web of truth out of one's internal organs spider fashion, but a return to dogmatism.

May I call your attention also to what seems to me further evidence that the neo-realistic movement is essentially a return to dogmatism? Why have neo-realists championed the following causes: first, the giving up of the substance-attribute notion as fundamental; secondly, the holding to logical pluralism and its companion doctrine, the defense of analysis as an ultimate method of research; and, thirdly, the complete elimination of psychology or epistemology from formal logic? Which is true; are these principles inferred by the neo-realist from his theory of knowledge or has his theory of knowledge logically nothing to do with the matter? I am convinced that the latter is true, yes, even in the case of some neo-realists who may not be fully aware of it themselves. In the case of the substance-predicate notion, history shows that there has been gradually a wider and wider elimination of this notion from the mathematical and physical sciences from the days of Galileo to our own, whereas pre-Kantian rationalism, idealism of Kantian lineage, and romanticism have held more or less tenaciously to the older conception.

In Lotze in Germany, in Bradley in England, and indeed in any upholder of the doctrine of the absolute we see a remarkable hostility to the proposition that relations are fundamental, whereas you see the opposite tendency among neo-realists. The only explanation I have of this division by parties is that psychology and sometimes romanticism dominate in the one, and logic dominates in the other. In the case of the remaining two principles, it is, however, more evident. Examine the treatises on logic of the objective idealists, the phenomenologists, and the pragmatists; and the influence of psychology, or, if you prefer so to call it, epistemology, is everywhere evident, whereas there is a remarkable tendency for neo-realism to side with formal logic against what has been dubbed *Psychologismus*. Consider finally how neo-realism champions analysis as an ultimate method of research and, in general, logical pluralism as fundamental to our modern theory of reality. Now if I mistake not it is evident to all philosophers that the exact sciences have been for centuries utterly dependent upon the method of analysis. Indeed without it we should not have any of our modern sciences. As a consequence both romanticists and monistic idealists have to find some other pigeonhole besides that of genuine truth in which to place science. In short, they have to claim that science can not be our direct and fundamental source for a theory of reality; whereas the realist claims precisely the opposite.

In conclusion, there is some evidence among realists themselves that they do not regard the name realism as the most appropriate. Mr. Bertrand Russell, who is certainly one of the foremost neo-realists in the English-speaking world, urges that the appropriate name is pluralism. I believe it would be more appropriate, for it would at least refer to a fundamental tenet of the new party; but against it I urge that the new movement is more a *methodological* rebellion against the older philosophy, and that in a recent reply to Mr. Bradley, Mr. Russell suggests this very thing.<sup>3</sup> Thus though I may be suggesting the impossible, I do nevertheless ask: Should not the new movement be called neo-dogmatism? This name would at once make clear to the objective idealist the difference between the parties where now he feels that he, too, is in a sense a realist. Again it would do the same for those pragmatists who call themselves realists and yet feel rightly that there is some radical difference between their position and that of the neo-realists. It would make clear the relationship between the new movement and the seventeenth-century philosophy for which this movement has already expressed a fondness and with which neo-realism has been confused by some critics.

<sup>3</sup> "The Basis of Realism," this JOURNAL, Vol. VIII., page 158; and cf. *Mind*, 1910, N. S., Vol. XIX., pages 373-378.



Finally, I believe it would indicate the chief bond between the individual realists themselves, a methodological bond rather than a theory of reality.

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## STUDIES IN THE STRUCTURE OF SYSTEMS

### 2. THE DEDUCTIVE SYSTEM FORM

OF all system forms, the so-called "deductive" has received the greatest attention. Its father is Aristotle. Following suggestions and using preliminary work by his master, Plato, he put the stamp of his own mind on his researches into the nature of the deductive system. Euclid gave the first great example of the form in his "Elements," and this example was interpreted and imitated in the light of the Aristotelian theory. Every school-boy who labored through Euclid's text was thus familiarized with the leading ideas of Aristotle's theory. And quite naturally it was believed that the deductive system form was something peculiarly mathematical, though the attempt was made, with indifferent success, to apply it to philosophy, with great success, to physics.

The conception of a deductive system thus made current may be briefly stated as follows: Its dominating idea is that of "proof," by which is meant "deductive" proof; no propositions are admitted as valid until they have been proved; and they are "true" just in so far as they have been proved. The "proof" shows that the proposition "necessarily follows" from some other propositions; but this regress, so Aristotle taught, must come to an end; this is reached when we come to the "principles" ( $\pi\rho\omega\tau\eta$ ) which neither can nor need be proved, for they are "self evident." By means of the proofs our propositions participate in this self-evidence which the "axioms" enjoy, and in this lucidity consists the great merit of the deductive system; error may indeed creep in through a faulty proof (nothing human is perfect, alas!); but it can be corrected, for the rules for making valid proofs were made the subject of explicit and detailed study. Propositions must be proved, that is, reduced to the axioms; concepts must be "defined," that is, reduced to the fundamental concepts, in the last resort to the categories, which thus correspond to the axioms. Categories must be clear, intelligible, general; and the "derived" concepts, by means of the definitions, participate in the clearness of the categories, just as the propositions do in the self-evidence of the axioms. The light of day thus shines through the whole building, for its very structure assures clearness, validity,

necessity, for which the philosophic mind had always been longing.

As we look back over the centuries through which the history of the deductive system took its triumphant march, we are impressed with the feeling (which to the workers at the building seems to have been a conviction) that a system, such as plane geometry, could be developed in the deductive system form *in but one way*. Certain concepts are *the* fundamental concepts, certain propositions *the* axioms, radically distinct, by their nature of "clearness," "self-evidence," from all other concepts and propositions in the system. The search for "categories" and "principles" has always taken this direction and followed this procedure: by a direct inspection they are to be recognized as such, without further ado. Of course, individual writers did err (though it seems just a trifle hard to understand how they could have failed to recognize that which is "self evident"); but the correction itself followed, with undaunted confidence, the same method of direct inspection!

This is the heritage of the Aristotelian theory; "categories," "axioms," the terms which most clearly express it.

Had philosophers not been too much absorbed in different problems and too ignorant of mathematics to be any longer interested in the work which was going on around them in the special sciences, this idea of a deductive system would have been rudely shaken by the work of intrepid mathematicians, who, without theoretical bias, proceeded to develop deductive systems of "geometry," of "algebra" by starting from *various* sets of "axioms." As it was, philosophers ignored, and mathematicians built according to Euclid's pattern, without much concern for the structural significance of their work. And so the opinion could prevail that the Aristotelian account still fitted the modern work.

These various sets of "axioms" were at first offered in the spirit of the older conception of a deductive system, as improvements on Euclid's system which was found deficient in important points. But once the absolute perfection of Euclid's system was impugned and the possibility of starting from a different basis demonstrated, the work was carried on beyond the intentions of these first attempts. Mathematicians exhibited new, and new, sets of "axioms," "hypotheses," "postulates," "primitive propositions," or whatever name they chose for their starting-point of a deductive system, and proved that all of Euclid's propositions could be deduced from their sets also. But even more important than this multiplicity of "foundations" is the fact, that, if any one of these sets of "axioms" is chosen, the "axioms" of the other sets become *theorems* which must and can be *proved*. The new set of "axioms" may simply be a new selection from among the propositions of the old systems. What



becomes of the radical distinction between "axioms" and "theorems," if they may thus be interchanged! And what is true of the "axioms" applies to the categories.

The consequences of this work have not yet been recognized, though its bearing on all our thinking seems great; for the "example of mathematics" has been potent with those who imitated, as well as with those who opposed it. Spinoza, who put his philosophy into the deductive system form, as well as Kant, who denied the possibility of "definition" and "deductive proof" in philosophy, was guided by the Aristotelian idea of a deductive system. And Kant's own attempt at establishing a "table of categories" and of "fundamental judgments" moves, at bottom, in the same direction: certain concepts *are the* categories; certain propositions *the* fundamental judgments. This is a remnant of the Aristotelian way of thinking in the great and complex German philosopher, who—though a favorite subject of attack by the young scientists working in the realm of the "philosophy of mathematics"—in other respects, and particularly in his "transcendental method," seems to have sounded the key-note of all this modern work. To have shown this convincingly is one of the great merits of Hermann Cohen.

But are we not too rash in thus speaking rather disparagingly of the Aristotelian conception of a deductive system? Has the modern work really made a different theory necessary? Above all, are the ideas controlling this work sound themselves? Wherein do they differ from the classical account, and do perhaps they themselves require modification? These questions should be put and answered systematically; for we are at present in a puzzling and somewhat irrational position. If "proofs" merely link propositions to "*postulates*," lacking the distinguishing mark of "self-evidence," "certainty," "undeniability," what is the advantage of all this laborious "proving"? We seem to "establish" nothing! And if all the propositions of a deductive system are "contained" in the "axioms," do we not merely keep reasserting these "axioms" when we state the "Pythagorean Proposition"? The problem of the "New" in mathematics arises! Ah, says Professor Poincaré, who himself urged this problem, the "New" *exists* (and every unbiased mathematician will agree with him in this); but, though it is excluded indeed by the "deductive" procedure, it has its source in that important other method of mathematics, namely, "complete induction."

Does not the great mathematician, in opposing this "mathematical induction" to the usual "deduction," misconceive the former? This question is of double importance. If Poincaré's solution is correct, mathematics is not purely a "deductive" system, as modern mathematical logicians hold. If it is incorrect, the prob-

lem must either be solved differently or it is merely symptomatic of a general misunderstanding of the nature of a deductive system. I believe that the latter alternative is correct, and I shall indicate this by a brief analysis of Poincaré's theory.

In the first place it must appear paradoxical, if "complete induction" is really the source of the "New," that the application of the method should be so limited in "geometry" where the "New" is so very patent!

In the second place it must be borne in mind that the question how the "New" is *found* does not concern us here, but how we can account for its logical existence in a deductive system.

Now let us briefly examine this method of "mathematical induction." It may be well to attach our remarks to a particular example. I choose the "binomial theorem," because it is here that the beginner in mathematics usually makes his first acquaintance with this method; and the simple form in which it appears here illustrates the point as well as the later refinements on it by Dedekind, Schröder, Huntington, and others.

Starting with the formulæ

$$\begin{aligned} a + b &= a + b, \\ (a + b)^2 &= a^2 + 2ab + b^2, \\ (a + b)^3 &= a^3 + 3a^2b + 3ab^2 + b^3, \\ &\text{etc.,} \end{aligned}$$

which are obtained by successive multiplication with  $a + b = a + b$ , we make an "induction" to find the formula for the  $n$ th power,

$$(a + b)^n = a^n + \frac{n!}{1} a^{n-1}b + \frac{n(n-1)}{1 \cdot 2} a^{n-2}b^2 + \dots$$

How this is done in detail, it is not essential for us to examine here. But, and this is essential, this formula is not yet warranted, it is a mere presumption, a methodical guess at a general law. To incorporate this formula into the system, it requires to be "proved"; the "induction" is no warrant whatever. For in many cases we make a precisely similar induction, but find, on testing the "law" that it does not hold in general. This occurs with annoying frequency in the case of finding the " $n$ th derivative of a function" (for the remainder in Taylor's theorem)! The first part of the method, the "induction" consists, therefore, merely in making, by analogy, a *guess* at a general law (Bertrand Russell uses this rather disparaging, but very characteristic, expression). It is the *second* part which establishes the law as *valid*: by assuming the formula to be correct for  $n$ , we prove that it holds for  $n + 1$ . *This step from  $n$  to  $n + 1$  is the really characteristic feature of the method* (which is often called after it "conclusion from  $n$  to  $n + 1$ "); this step dis-



tinguishes it radically from any "induction." For it is a deduction pure and simple; here we "deduce"! From what? This I shall examine later. But we "deduce," no doubt about that! And nothing whatever distinguishes this "conclusion from  $n$  to  $n+1$ " essentially from other deductive proofs. The "New" does enter here indeed; but so it does in other "deduction"; only how? This is the question which the reference to "induction" leaves completely unanswered. And the problem of the "New" remains on our hands.

Its solution, however, does not require the invention of new structural elements or the recognition of hidden and unsuspected methods: the problem is merely symptomatic of the insufficiency of our prevalent theory of a deductive system. A reexamination is needed which will draw the full theoretical consequences of the practical work of modern mathematics.

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## DISCUSSION

### MISS CALKINS'S REPLY TO THE REALIST

MISS CALKINS is almost the only "idealist" who has appeared in arms against the advancing "realistic" movement. Partly because of this, partly because of the position Miss Calkins is rightly accorded among philosophic writers, and partly because her reply to the "realist" exhibits a type of fallacy entailing very important consequences, it has seemed that her contention is particularly worthy of consideration.

The reply in question<sup>1</sup> is divided into two parts. The first of these is concerned with the "recent criticisms of idealism," which, it is said, can be grouped under three main heads: "first, those which oppose idealism on the ground that it is subversive of some important system of beliefs; second, those which charge idealism with fundamental inconsistency; and, third, those which claim that idealism is based on unjustifiable assumptions."

The first of these criticisms is disposed of briefly. The fact that certain beliefs are generally accepted does not render them true, and as long as one's contention is based upon this principle it is irrefutable.

The second criticism, that concerning the inconsistency of "idealism," is not treated at all fully. The "realistic" contention is said to be that the subject-object relation, which is essential to

<sup>1</sup> This JOURNAL, Vol. VIII., pages 449 ff.

knowledge, "is possible only on the supposition that non-mental reality exists." Miss Calkins admits that "idealism" makes the distinction between subject and object; but, apparently, not the supposition that non-mental reality exists. The "idealist," "like other men, recognizes a difference between present and external, and merely imagined, objects." But this distinction is said to refer not to two kinds of things, "extra-mental and mental," but to "objects respectively of . . . shared and of . . . unshared consciousness." The only point to be noted here is that the *nature* of an object can not be explained by the fact that it is an object for many subjects. That is a fact additional to the problem of the *nature* of the object, and irrelevant to its solution.

The third of the "realistic" criticisms of "idealism" is treated at greater length and the chief point for consideration in Miss Calkins's article is to be found in connection with it. The "realist" has said that "idealism" is based upon an unjustifiable assumption in holding that "an object, because known, is therefore mental in nature." Miss Calkins endeavors both to uphold the "idealistic" position and to refute the "realistic" criticism of it. The method employed for this purpose should be carefully observed.

The "realistic" position is first stated in the words of Holt: "The entities (objects, facts, *et cæt.*) under study in logic, mathematics, and the physical sciences are not mental in any usual or proper meaning of the word "mental." The being and nature of these entities are in no sense conditioned by their being known" (p. 452). This is said to be "an accurate and an uncompromising statement of the difference between the two parties. For the idealist does hold as fundamental just this doctrine which the realist attributes to him, that is to say, he believes that objects, as known, are mental" (p. 452). Miss Calkins asserts (p. 454) that unknown objects (and hence unknown qualities of objects) while possible, are yet "utterly negligible," and, in addition, "inconceivable" and "indefinable." Throughout the article, statements recur which seem to be based upon the position that the unknown is non-existent; but since Miss Calkins admits the possibility of the existence of an unknown, we must simply accept the statement that it is "inconceivable." Hence, the phrase "as known," at the end of the last quotation (p. 452) is unnecessary, and must not be taken to imply that Miss Calkins holds objects, as *unknown*, to be *non-mental*, nor, indeed, to be any thing at all. The contention between "idealist" and "realist" is then clear: the "idealist" holds that all objects of knowledge are mental, the "realist" that some objects of knowledge, at least, are non-mental. And the "realist" asserts that the "idealistic" contention is an unjustifiable assumption.



Miss Calkins's reply assumes the form of asserting that an examination of the objects of logic, mathematics, and the physical sciences, shows that they are "ideal" (by which, apparently, is meant the same as "mental"). An empirical study of any known object reveals the fact that it is constituted of (1) sensible qualities and (2) relations. These are treated separately; but as the argument is the same in both cases, it will simplify matters if we limit our consideration of it to the treatment of sensible qualities.

What is asserted, then, is that the "idealist *discovers* by examination of objects—he does not (as the realist accuses) *assume*—that both sense qualities and relations are mental" (p. 453). Hence, the question arises: what does Miss Calkins mean by the term "mental"?

The answer to this question is best seen from the treatment of sensible qualities. Miss Calkins does not attempt to prove the mentality of sensible qualities by the ordinary method, namely, by pointing out their "variability"; for this, she says, quite rightly, "does not prove, even though it suggests, the ideality of objects" (p. 453). "But the idealist," we are told, "rests his case, not on reasoning of this sort, but on the *results of direct observation* coupled with *the inability of any observer to make an unchallengeable assertion about sense qualities save in the terms of idealism*. To be more explicit: the idealist demands that his opponent describe any immediately perceived sense object in such wise that his description can not be disputed. The realist then describes an object as, let us say, yellow, rough, and cold. But somebody may deny the yellowness, the roughness, or the coldness; and this throws the realist back on what he directly observes, what he knows with incontrovertible and undeniable certainty, namely, that *he is at this moment having a complex experience* described by the terms yellowness, coldness, and the like (an experience which he does not give himself). This statement, and only this, nobody can challenge. And this statement embodies the result of immediate experience" (p. 453). This is the sole argument used to prove that sense qualities are mental.

Now, what is meant by saying that no one can make "*an unchallengeable assertion about sense qualities save in the terms of idealism*"? We find that "terms of idealism" are terms which ascribe to sense qualities a mental nature. That this is so follows from the statement of what the "idealist" holds "as fundamental." So that the contention is that no one can make an unchallengeable assertion about sense qualities save by saying that they are mental. When it is asked how this conclusion is supported, the illustrations supplied are found to be of the following kind. If I say, *e. g.*, that this orange is yellow, what is really implied is that I *see* that this orange is yellow; or, if I say that snow is cold, what is really implied

is that I am *aware* of it as cold; when, in general, I make an assertion of the form "*X* has the sense quality *P*," what is really implied is that I am *aware* of *X* as having the sense quality *P*. Hence, the argument runs, sense qualities are mental.

There is a certain difficulty in perceiving the logic of this argument. It must be particularly noted what Miss Calkins is demanding. She is insisting on an unchallengeable *description* of a sense quality. It is therefore important to consider what is the nature of a *description*.

The important point that comes to light when we begin to consider description is that it presupposes knowledge which is itself indescribable. Sense qualities are examples of such knowledge; for sense qualities are not merely indescribable "save in the terms of idealism," but they are strictly not describable at all. It is, *e. g.*, impossible to describe yellow to a man born blind. *Each* individual has a stock of indescribable knowledge, in which sense qualities have a large place, and it is quite incommunicable, because indescribable. Communication proceeds on the supposition that there is knowledge which, while incommunicable, is yet the property of all. Each individual is assumed to have a corresponding stock of such knowledge which he could have attained only by immediate acquaintance.

Further, all description is in the terms of the elements of which the object is composed. (We do not *describe* yellow by saying that we are *aware* of it.) It follows that there can be no description of the elements themselves. Individuals are immediately aware of them.

A description may be defined, therefore, as the characterization of a thing by the enumeration of the indescribable elements of which it is composed. The question then is: What is the nature of indescribable objects? Among such are sense qualities, and it is asserted that they are mental. But why are they mental? Is it *because* they are indescribable? If so, it should be pointed out that the proposition "Sense qualities are mental" is *different* from the proposition "Sense qualities are indescribable" and needs for its proof the mediating proposition "Indescribable qualities are mental." But how is this proposition reached?

Or is a quality mental because it is incommunicable? This conclusion does not seem to follow at once. To establish it one would have to prove independently that *all* incommunicable qualities are mental. And how is this to be done? It might possibly be contended that if an object were purely individual it would be mental, though this seems questionable; but in any case it would have to be proved that incommunicable objects were purely individual. This seems palpably false: yellow is not purely individual, though it is quite incommunicable.



What Miss Calkins has said may be summed up by saying that there are certain objects of knowledge which are incommunicable, because indescribable; though, what she actually says is that such objects can not be described "save in the terms of idealism." Hence, her contention that sense qualities are mental *should* mean simply that sense qualities are incommunicable.

It may be doubted whether Miss Calkins means nothing more than this. There is some suggestion that when Miss Calkins says that sense qualities are mental she means "mental" to refer to their *nature* and not to their incommunicability. And this leads us to suppose that the term "mental" has been used in two senses by Miss Calkins, and that the proposition "sense qualities are mental," in consequence, means one thing at one time and another at another. This seems to be borne out from the following considerations.

Miss Calkins outlines an argument (p. 452) by which a "monistic idealism" (it is apparently assumed) could be established, and also the conclusion which would be established by it. But the argument there outlined is merely mentioned; much of the article is concerned with the other argument which we have quoted. Consequently, we must believe either that Miss Calkins did not think the outlined argument adequate for her purpose, or that she considered the one she uses a more effective instrument in attaining it. Now, the conclusion which is said to follow from the "monistic idealist's" argument (the one merely outlined) is that the objects which I "directly experience . . . must be like me, must—in other words—be other-self" (p. 452). That is to say, in particular, that sense qualities must be "like me." It is true that this is said to be the conclusion of a *monistic* "idealist"; but since Miss Calkins would assume that title for herself, we must believe that it is that conclusion she is endeavoring to establish by the method which she actually employs throughout her article. *If so*, there is one important consideration.

According to the argument actually adopted by Miss Calkins the conclusion was reached that sense qualities are mental, and it was seen what that proposition *should* mean. "Mental" in this conclusion *should* mean "indescribable." And as long as a term's meaning is made clear there can be little objection to any particular usage of it. But it must be noted that this meaning of "mental" has no reference to the *nature* of the sense qualities. An object could be mental in this sense if it were "gross matter." The one condition that it would have to fulfill would be "indescribability."

Not so, however, if mental is taken to mean "like me." The term then refers to the *nature* of an object and not at all to its relations to a knower. A sense quality is "mental," is "like me," is "other-self," if it thinks, feels, wills, acts, in this sense of "mental";

and may, if it does these things, be said to be mental with as much, and as little, propriety as I may be said to be mental. And it is clear that this meaning of mental is very different from the former one.

Now, if, in using the term "mental," we at one moment adopt one of these meanings and at another moment adopt the other, our conclusion will probably be unsound. Miss Calkins seems unconsciously to have done this. She does not, indeed, explicitly use the term mental to mean "like me"; yet she says that is the "idealistic" conclusion, and the "idealistic" conclusion, she also tells us, is that objects of knowledge are mental. Hence, it seems that one sense of mental is synonymous with "like me." On the other hand, Miss Calkins does not explicitly use the term mental to mean indescribable; but that is what her argument involves. Once sense qualities are said to be mental in this latter sense, it is natural to argue, fallaciously, that they are also mental in the sense that they are "like me." But this conclusion is clearly in no way whatever connected with the arguments by which Miss Calkins endeavors to prove that sense qualities are mental.

There are two general meanings of the term mental which it is of the highest importance to keep distinct. The first of these makes the term applicable to *qualities* of *minds* as real existing entities. (In an analogous way it is said that speech is human.) In this sense of mental it is applied, *e. g.*, to awareness, and also to any other quality which is peculiar to minds.

The other general meaning of the term mental makes it applicable to any entity which is supposed to be dependent on minds for its existence, being, or reality. "Mental," in this sense, means simply "dependent for existence, being, or reality on mind or minds." It is difficult to demonstrate that there are *any* such entities, though that there are is sometimes thought to be quite obvious. It has also been thought that an "idealism" could be established if it could be proved that all objects are dependent for their existence, being, or reality on minds. But this belief has been due to a fallacy.

The fallacy consists in supposing that *if* objects are mental in the second sense, they are *also* mental in the former sense: if, that is, they are dependent for their existence, being, or reality on minds, they are *also* qualities of minds. It is hardly necessary to point out that the two meanings of mental have no logical connection whatsoever.

This confusion has led to much superficial argument on behalf of "idealism." "Mental" has been used illegitimately very widely and much *ignoratio elenchi* argument has arisen due to the fallacy arising from this two-faced term. Miss Calkins's article exhibits a similar inconsequence.



It *may* be true that the objects of knowledge are "like me." It is *possible* also that Miss Calkins can demonstrate that they are "like me." I am not at present concerned to consider possible arguments in support of this conclusion. What I am concerned to do is to show that Miss Calkins *either* seeks to establish the conclusion that objects of knowledge are mental by an illegitimate use of the ambiguous term mental *or* does actually establish the proposition that the objects of knowledge are mental, but in a sense which is trivial and wholly irrelevant to the "realistic" contention. Miss Calkins has shown that objects of knowledge are mental *neither* in the sense that they are dependent for their existence, being, or reality on minds *nor* in the sense that they are similar to minds. Yet these seem to be by far the most important meanings of the term mental, and are the meanings most relevant to the particular "idealistic" theory which Miss Calkins outlines. And I wish to point out that this inconsequent type of argument is very prevalent in "idealistic" writings.

The second part of Miss Calkins's article concerns itself (1) with the positive "realistic" doctrine and (2) with the "idealistic" conception of the universe. What is said with reference to (1), namely, that "realistic" writers have little positive doctrine is doubtless quite true. Still, is it not largely a polite fiction that a philosopher is great if he has constructed, at any cost, a pretentious theory of the universe? Has not the clearer-away of "much rubbish" a place in this world, as well as the builder of a crystal palace? In regard to (2) there is little to be said except that the treatment exhibits once more the difficulties arising from the word "mental."

The article is, on the whole, so admirably clear as to emphasize once and for all two distinct points: (1) when "idealists" say that the objects of knowledge are mental they must also say precisely what they mean by the term "mental"; (2) the hypothesis that the objects of knowledge are mental will have to find some definite, relevant, and logical support if it is to be more than a mere forgotten fantasy.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Wandlungen in der Philosophie der Gegenwart.* JULIUS GOLDSTEIN.  
Leipzig: Werner Klinkhardt. 1911. Pp. viii + 171.

To readers outside of Germany Dr. Goldstein's book is likely to seem significant chiefly as an evidence of the awakening of the German mind to certain new philosophical tendencies that have long been conspicuous in

Anglo-American and French thought, and as an effective instrument for the diffusion of those tendencies in the land of Kant and Hegel. The author plainly intimates to his fellow-countrymen that in philosophical matters they have for the most part ceased, at least until very recently, to be *dans le mouvement*. Elsewhere great changes have been taking place—changes in the center of philosophic interest and in the fundamental presuppositions of philosophic procedure: “and these changes, in their reactions upon religion, ethics, and men’s practical attitudes, have, for now nearly two decades, been bringing about a crisis in philosophy, have been giving a new direction to inquiry.” But “in German philosophy few signs of all this are recognizable. It still, with some praiseworthy exceptions, walks with unsuspecting innocence in the old paths and busies itself with the traditional problems. In many cases it has not yet emerged from the Hume *vs.* Kant controversy.” Possibly the old doctrines and the traditional methods of attack may in the end hold their own and successfully dispose of the new—though the author does not, in fact, anticipate that outcome. But in any case, the new ideas must be faced, must be more than superficially understood, must be open-mindedly examined, as they but rarely have been by German academic philosophers. Dr. Goldstein has accordingly undertaken to naturalize the new tendencies in his own country and to arouse in the German philosophic public a fuller realization of the prevailing drift of contemporary reflection.

Two means are employed to this end. The author, in the first place, endeavors to show the underlying unity of seemingly diverse innovating doctrines, to trace the convergence of a number of recent lines of thought in a general conclusion of great moment and of essential novelty. He offers, in the second place, brief, but by no means mechanical, expositions of the teaching of three philosophers whom he regards as the chief representatives of the new way of thinking: Bergson, James, and Eucken. The introduction of Eucken in this sort of company is somewhat surprising; and the author in the end is obliged to admit that that metaphysician returns to the “old paths” at what is, confessedly, the crucial point. The new movement may be described (among other ways of characterizing it) as a final *Loslösung vom Platonismus*; but Eucken’s “affirmation that the *Geistesleben* is in itself timeless and immutable” can only be regarded as “a not yet eliminated survival of the Platonic mode of thought.” One suspects that Dr. Goldstein felt obliged to have some German representative of the new philosophy and consequently selected Eucken to figure rather incongruously in that rôle, *faute de mieux*. But in fact there are better German examples who might have been chosen, though perhaps no perfectly typical one. Some, at least, of Dr. Goldstein’s “new paths” were trodden some time since by Avenarius, some by von Hartmann, and some by Dilthey; and the most important ones may be said to have been opened chiefly by Schelling and Schopenhauer.

The author’s enumeration of new tendencies and his attempt to interpret their collective import are interesting and often decidedly illuminating; no one can fail to derive from the book a better understanding of the intellectual movement of our time. Yet I do not think that the inter-



pretation is at all complete or clear-cut. In general, what is now taking place, Dr. Goldstein finds, is a "smash-up of rationalism." Rationalism he defines as "a conception of the nature of science formed under the influence of mathematics and an endeavor to bring the facts of life into accord with the mathematical physicist's picture of the universe." This definition, however, hardly corresponds to the author's own meaning or to the nature of the conceptions against which the most typical new philosophies are insurgent. It is quite as much against the rationalism of absolute idealism as against the rationalism of mechanistic naturalism, that James and Bergson and their followers, and Goldstein himself, have rebelled. The formula given neither indicates the common essence nor suggests the distinguishing differences of the various current forms of anti-rationalism. And in the absence of a more satisfactory definition of rationalism, the author fails to show convincingly that all the tendencies which he describes have a significant common essence or are anti-rationalistic in the same sense. Under the one designation he includes such diverse attitudes as the simple, common-sense recognition of the limitations of our knowledge of nature and the probable necessity of future corrections in our scientific generalizations (p. 25); the admission that the subsumption of particular facts under general laws is merely description and not explanation (p. 165); the denial of the apriority and logical necessity of the axioms of mathematics (p. 68); the recognition of the futility of all ready-made philosophies of history (p. 36); the discovery that technological progress often entails such an increasing complication of human life that it becomes a doubtful boon (p. 49); the abandonment of the belief that "an absolute, *i. e.*, a final and definitive, religion" has been attained (p. 52); vitalism, which is fundamentally a special form of what may be called scientific pluralism, the denial of the possibility of regarding all natural laws "as special cases of a single, all-embracing world-law" (p. 58); instrumentalism, or the pragmatic conception of the nature and office of the intellect (p. 13); indeterminism (p. 30); temporalism, or the conception of reality as a process of becoming, in which there is no room for the timeless and eternal (p. 166); and radical evolutionism, or the conception of this becoming as a constant creation of new reality not given in nor wholly predictable from anything preexistent—in which creative process the moral endeavor of man is a participation (pp. 166-170).

All these positions, of course, represent one degree or another of diffidence with respect to the powers of the human reason; so much they have in common. But they represent very different degrees; and they have historically made their appearance, for the most part, under the influence of diverse logical motives, and as parts of quite dissimilar doctrines. The adoption of some of them by no means commits one to an acceptance of the others; and many of them are far from novel. But the adoption of the last two involves the acceptance of most—to be precise, of all but three—and naturally leads to the acceptance of all, of the others. And the fact is that Dr. Goldstein himself is a radical temporalist and a believer in Bergson's "creative evolutionism," and that to him, therefore, all these modes of anti-rationalism present themselves as phases of a single philos-

ophy. In other words, while they have not historically sprung from a common root, and while the milder and older phases of the tendency do not logically imply the newer and more extreme phases, the former are more or less clearly implied by the latter. The book would have been clearer and more instructive if the author had from the first made it evident that the principal root of his own anti-rationalism was the combination of temporalism and radical evolutionism—and had noted that it is only from the point of view of his own philosophy, and not in themselves, that the numerous tendencies which he mentions constitute a doctrinal unity. In the absence of an understanding of these points, the reader is likely to be left with a rather confused and congested sort of conception of both "rationalism" and its opposite, and with some errors of historical perspective not at all intended by the author. Dr. Goldstein's *Zusammenbruch des Rationalismus* is a name for too many and too various doctrines—or, at all events, for too many that are not themselves new, but merely capable of combination with certain significantly new doctrines. And since these last are scarcely set forth until the end of the book, the key to the inner logic of the author's exposition is concealed from the reader, and—one can hardly help surmising—to some extent from the author himself.

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*Some Neglected Factors in Evolution: An Essay in Constructive Biology.*

HENRY M. BERNARD. Edited by MATILDA BERNARD. New York: G. P. Putnam's Sons. 1911. Pp. xvi + 489.

A book, rather interesting from the point of view of the speculative philosopher, but utterly fantastic in so far as it claims to be scientific, is Henry M. Bernard's "Some Neglected Factors in Evolution."

Mr. Bernard starts with a hypothesis of the universal presence in living organisms of a protomitotic network consisting of so-called chromatin bodies from which radiate delicate linen filaments. The chromatin bodies function chemically, their influence being distributed along the linen threads. Growth and extension of this simple chromidial network is carried on by the dividing of the chromatin, together with the splitting of the growing threads. Waste matter, resulting from chemical reactions, is carried along the filaments to the surface of the organism. The tips of the filaments are sensitive, and impulses from outside may travel inward as a nerve current.

Increase in size of an organism of this kind necessitates differentiations. Concentration of the powers of reaction and response gradually takes place. This means a closer clustering of chromidia where the stimuli are the strongest, with rearrangements of the filaments into strands for stronger and more coordinate contractions. Theoretically, such an organism should be spherical with all its chromatin collected in the center. The centers of energy would then be at the spot where all the paths of all the nerve stimuli from the surface cross each other. The primitive chromidial network thus becomes transformed into a new organ-



ism, the cell. All this reasoning is purely hypothetical, and Mr. Bernard's "Studies on the Retina," published in 1901-03, have, so far, convinced no one as to the reality of a protomitomic network.

The metazoan body, according to Mr. Bernard, consists of a multitude of chromidial centers connected with each other by myriads of filaments. Gastraeal organisms arise from a rounded protomitomic individual which became impitted to form a digestive cavity. The cavity thus produced became lined with a compact layer of nuclear nodes, forming a digestive epithelium.

How tissues and organs may be formed out of the chromatin linin network is described in Chapters IX.-XII. The scheme described denotes peculiar imagination and considerable ingenuity. It is unfortunate, however, that highly diagrammatic figures are shown purporting to be true to nature. The description of nuclear division according to the diagrams in Fig. 39 is grotesque.

Part II. deals with the "Cosmic Rhythm" which Herbert Spencer had already recognized as traceable in the phenomena of life. During long epochs species have arisen, culminated, and dwindled away. Life on this earth has not progressed uniformly, but in immense undulations. In this, Mr. Bernard catches a glimpse of an evolutionary truth "wider than any as yet apprehended." Considered in the light of this law, the evolution of organic life breaks up into a series of periods, each advancing according to a fixed formula. A great many forms are evolved on the plan of each unit of structure. Those which became modified for any special environment acquire stability at the cost of progress, but those which remain free to react efficiently to any environment at any time may yield new organisms of a type higher than their own. The production of new types of organisms is due to that special method of colony formation in which the combining organisms or "units" fuse together in such a way as to give rise to a new and more complicated organism.

Mr. Bernard traces five structural units in nature, the chromidial, the cell, the gastraeal, the annelidan, and, lastly, the unit culminating in man. In man, the nervous system is most highly specialized, the finer senses are so coordinated as to give a coherent report of the environment. A wealth of new forces appear comprised under the term psychic, *e. g.*, the thirst for knowledge, the love of the beautiful, etc. "The human unit, therefore, has to attain a condition of stable equilibrium, not only with an external, material environment, but with a psychical environment."

In the outburst of the "mind of man," in the fifth period, the psychic was "brought to the surface and externalized for the purpose of building up social aggregates." In modern society we find vast amalgamations gradually learning to live, side by side, without continual conflict. Old distinctions, necessary to the existence of the human organism only at the earlier stage of its integration, still persist. Like vestigial organs, however, they must in time disappear. Any real advance to a condition of stable equilibrium seems impossible until harmony is established between the component units of the organism. The politics of the present and the

history of the past give evidence of only blind and unsuccessful attempts to produce efficient and harmonious aggregates. Expressions of human sympathy and help have been considered graces, not duties. We are functional components of a new social organism. Only by the free development of all the units can a human society escape the fate which organisms of past periods brought upon themselves through the stiffness of their skeletons and the consequent withdrawal of large numbers of their units from sensitive contact with the environment. The organic rhythm is nearing the end of its fifth great period. Just as it appears to be repeating the law of unit formation, it vanishes entirely. May we not believe that it rises out of sight in order to start a new period on a higher level of life?

ROBERT CHAMBERS, JR.

NEW YORK CITY.

*Free Will and Human Responsibility.* HERMAN HARRELL HORNE. New York: The Macmillan Co. 1912. Pp. xvi + 197.

If one is tempted to consider the freedom of the will an outgrown question left behind us with scholasticism and Jonathan Edwards, the publication of two books on the subject by American thinkers (Professor Palmer and Professor Horne) within three months of each other should give one a greater respect for this time-honored problem. Nor will the perusal of Professor Horne's presentation of the subject be likely to make one feel that the question is any nearer being settled than it was on that mournful day when Buridano's ass starved quietly to death in the midst of assinine dainties. That one should feel thus on concluding the book is, perhaps, the more surprising inasmuch as the author does not pose as a dispassionate judge, but frankly holds a brief for the cause of freedom. To say this, however, does not mean that he treats determinism in an unfair manner. He states the case without prejudice and puts the arguments on both sides as strongly as he can.

The plan of the book is simple. After an introductory chapter, the history of the dispute is traced from the earliest times to the present. Then comes a presentation of the arguments of determinism, followed by the libertarian's rebuttal, and these are then reinforced by a chapter of positive arguments in favor of freedom. With this the discussion really ends, though further chapters are given us on "Pragmatism and Freedom" and "The Difference it Makes."

The historical sketch of so large an issue is naturally superficial. This of course was inevitable and is quite excusable. But the author might have given a clearer notion than he does of the relative importance of the question in pagan and in Christian philosophy. Moreover, the attempt is made to put the history of the conflict in such a light as to be itself an argument in favor of freedom, by showing that the general tendency has been toward it and away from determinism,—a conclusion arrived at by omitting any mention of the great reinforcement which determinism has received from the modern views of nature since the time of Galileo.



Professor Horne claims no originality in his statement of the arguments on either side. He has simply collected all he could find, and the result is nine arguments for determinism (each separately rebutted), and twelve arguments for freedom. In reading these thirty arguments (counting the rebuttals) one can not help feeling that each side would have been more persuasive had it been furnished with fewer reasons. More striking is the author's apparent failure to grasp the real force of the ethical argument of determinism so well put by Hume, Greene, and many others, that if the act is not determined by the character, responsibility and, with it, morality go to pieces. This seeming failure of our author to evaluate fully the strongest argument of his opponents is perhaps related to his frequent confusion of determinism with materialism, of the doctrine of freedom with idealism. That Professor Horne is perfectly aware of the distinction here involved is clearly shown by the appendix; and yet many of his most elaborate and most trusted arguments and rebuttals aim simply at proving that mind may be a cause, that will acts are not determined by brain states, etc.—as if Hegel, Greene, Paulsen, and a band of others had not amply demonstrated that determinism is as consistent with mental causation as is freedom.

The value of the book lies in the sharpness with which the issue is stated, the clearness with which the whole great subject is presented in 187 pages, and the excellence of the rebuttals of certain strong deterministic arguments. There is appended also a valuable bibliography which every one interested in the subject will be glad to have. On the whole, the book fulfills the purpose for which it was written as expressed in the author's preface: "In my own work I have felt the need of a clear brief treatise covering both sides of the issue in outline, to which students might be referred, and which might, perhaps, be used as a text for discussion at a certain point in the course. These pages are designed to supply such a need."

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WILLIAMS COLLEGE.

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## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. January, 1912. *Le "volontarisme intellectueliste"* (pp. 1-21): A. LALANDE. — Critical discussion of Fouillé's "Thought and the New Anti-intellectualistic Schools." *Les grands courants de l'esthétique allemande contemporaine* (1er article) (pp. 22-43): V. BASCH. — Shows the fundamentally psychological method of all German estheticians and discusses the Einfühlung theory of Lipps and Volkelt. *Les conséquences et les applications de la psychologie* (pp. 44-67): R. MEUNIER. — A sketch of the working value of psychological science in logic, ethics, sociology, metaphysics, pedagogy, psychotherapeutics, and "the difficult art of living." *Notes de discussions. Y a-t-il dualisme radical de la vie et de la pensée?*: A. FOUILLÉ. *Analyses et comptes rendus*. F. Le Dantec, *Le chaos et l'harmonie universelle*: CH.

PIEDALLU. Laberthonnière, *Positivisme et Catholicisme*: J. BARUZI. Alexandra David, *Le modernisme bouddhiste et le bouddhisme du Bouddha*: J. BARUZI. J. Pacheu, *Psychologie des mystiques chrétiens*: J. BARUZI. A. Brofferio, *La Filosofia delle Upanishadas*: J. BARUZI. L. Jeudon, *La morale de l'honneur*: F. PAULHAN. J. Segond, *Cournot et la psychologie vitaliste*: DR. CH. BLONDEL. L. Perego, *L'idealismo etico di Fichte e il socialismo contemporaneo*: J. SEGOND. B. Croce, *La Filosofia di Giambattista Vico*: DR. S. JANKÉLEVITCH. Kant, *Gesammelte Schriften*: J. SEGOND. *Revue des périodiques étrangers*.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. January, 1912. *Sur la structure logique du langage* (pp. 1-24): L. COUTURAT. — A sketch of an universal grammar that might realize Leibniz's idea of mirroring the human mind. *Les formes de la vie psychologique* (pp. 25-47): C. D'ISTRIA. — A study, with reference to Cabanis, of the effects of age, sex, and temperament on psychic life. *La logique déductive* (pp. 48-67): A. PADOA. — A continuation of his exposition of symbolic logic, including the syllogistic. *Études critiques. La nature et l'homme d'après Sigurd Ibsen*: P.-G. LA CHESNAIS. *La Socio-psychologie de Wilhelm Wundt*: H. NORERO. *Discussions. La théorie électromagnétique*: M. DJUVARE. *Questions pratiques. Les obligations des ouvriers syndiqués*: M. LEROY. *Supplément*.

Collins, Varnum Lansing. *Lectures on Moral Philosophy* by John Witherspoon. Princeton: Princeton University Press. 1912. Pp. xxxi + 144.

Downey, June E. *The Imaginal Reaction to Poetry*. Bulletin No. 2 of the Department of Psychology of the University of Wyoming. 1912. Pp. 56.

J. G. Fichtes Werke. Vol. VI. Mit Mehreren Bildnissen Fichtes Herausgegeben und Eingeleitet von Fritz Medicus. Leipzig: Verlag von Felix Meiner. 1912. Pp. 680. 7 M.

Harrison, Jane Ellen. *Themis: A Study of the Social Origins of Greek Religion*. Cambridge: The University Press. 1912. Pp. xxxii + 559. \$5.00.

Hollingsworth, H. L. *The Influence of Caffein on Mental and Motor Efficiency*. Archives of Psychology, No. 22. Columbia Contributions to Philosophy and Psychology, Vol. XX., No. 4. New York: The Science Press. Pp. iv + 166.

Husik, Isaac. *Matter and Form in Aristotle*. Berlin: Verlag von Leonhard Simion. 1912. Pp. 93. 2.50 M.

James, William. *Essays in Radical Empiricism*. Longmans, Green, and Company. 1912. Pp. xiii + 282. \$1.25.

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Stöckl, Albert. *Handbook of the History of Philosophy*. Vol. I. Second edition. Translated by T. A. Finlay. New York: Longmans, Green, and Company. 1911. Pp. 446. \$3.75.



Wallin, J. E. Wallace. Experimental Oral Euthenics. Reprinted from the *Dental Cosmos*. Pp. 32.

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## NOTES AND NEWS

SEVERAL professors and graduates of the new National University of Ireland, founded in 1909 (see *Rev. Sc. Ph. Th.*, III., p. 390), published in March the first number of a review, entitled *Studies*, in which they intend to place before the reading public their researches in general literature, celtic, classic, and oriental literature and history, philosophy, pedagogy, sociology, and the sciences. The magazine is to be directed by a committee presided over by the Reverend T. A. Finlay, S.J., M.A., professor of political economy in the University College of Dublin. Each number will contain articles, reviews, and notes.

PROFESSOR WILLIAM JAMES's letters are being collected for biographical purposes, and any one who has any of his letters can render assistance that will be highly appreciated by addressing Henry James, Jr., 95 Irving St., Cambridge, Mass. Casual or brief letters may have an interest or importance not apparent to the person preserving them; and news of the whereabouts of any of the late William James's letters will be gratefully received.

A RECENT number of the *Cambridge Review* notes the lively interest of university scholars in the study of early Greek religion. Recently we had Miss Harrison's remarkable "Themis," and in the near future we may expect Mr. F. M. Cornford's "From Religion to Philosophy," as well as a book by Mr. A. B. Cook and further researches from the original and always stimulating pen of Professor Ridgeway.

M. W. SPECHT, privat-docent of psychiatry in the University of Munich, recently launched a *Zeitschrift für Pathopsychologie* (Leipzig, Englemann), the aim of which will be to strengthen the psychological foundations of mental pathology. Professors Ach, Bergson, Heymans, Janet, Külpe, Meumann, Münsterberg, Dick, and Sommer will be contributing editors.

A NEW periodical, *Imago*, is announced from Vienna, edited by Professor S. Freud and published under the direction of Otto Rank and Dr. Hanns Sachs. It is to be devoted to the application of psychoanalysis to the entire field of mental sciences.

THE University of California has conferred the doctorate of laws upon Dr. Sidney E. Mezes, professor of philosophy and president of the University of Texas, and upon Dr. E. C. Sanford, professor of psychology and president of Clark College.

At the National University of Mexico Professor J. M. Baldwin is delivering the second half of the two years' programme of lectures on psychosociology. In addition to these lectures a course in the history of psychology is also announced.

MRS. JOHN STEWART KENNEDY has given to New York University a Hall of Philosophy. It is to be known as the Cornelius Baker Hall of Philosophy in memory of Mrs. Kennedy's father, who was one of the founders of the University.

PROFESSOR LILLIEN J. MARTIN, of the department of psychology of Stanford University, gave an address on "Über die Localisation optischer Vortellungsbilder" at the Fifth Congress for Experimental Psychology, held in Berlin.

DR. F. W. MOTT will complete his series of lectures on "Heredity considered from the Point of View of Physiology and Pathology" at Kings College, University of London, on June 10.

IN a recent issue of the JOURNAL, the American Philosophical Society was incorrectly referred to as the Philadelphia Branch of the American Philosophical Association.

MM. L. DUGAS and M. L. Cellerier, of Geneva, are about to launch a new educational annual entitled *Année Pédagogique*, which is to be published by Alcan, Paris.

THE installation of Dr. John Grier Hibben, hitherto Stuart professor of logic, as president of Princeton University occurred on Saturday, May 11.

DR. IRA REMSEN has resigned the presidency of Johns Hopkins University. It is understood, however, that he will retain the chair of chemistry.

MESSRS. E. P. DUTTON AND COMPANY announce the publication of "English Philosophies and Schools of Philosophy" by Professor James Seth.

DR. ALEXANDER MEIKLEJOHN, professor of philosophy and dean of the faculty of Brown University, has been elected president of Amherst College.

MR. WALTER B. PITKIN, associate in philosophy in Columbia University, has been appointed associate professor of philosophy.

MR. C. M. GILLESPIE, of Yorkshire College, has been appointed to a newly established professorship of philosophy at Leeds.

MR. A. J. BALFOUR has been appointed as next Gifford lecturer for the session 1913-14. The appointment is for two years.

ON May 14 Professor W. Bateson gave the first of two lectures on "The Study of Genetics," at the Royal Institution.

PRIVAT DOCENT DR. F. A. SCHMID, of the University of Heidelberg, has been made professor extraordinarius.

DR. GEORGE CLARKE COX, of Dartmouth College, has been appointed assistant professor of philosophy.

THE ninth annual meeting of the Experimental Psychologists was held at Worcester, Mass., April 15-17.



## THE JOURNAL OF PHILOSOPHY

### PSYCHOLOGY AND SCIENTIFIC METHODS

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#### THE PROGRESS OF EVOLUTION<sup>1</sup>

THE progress of evolution has various meanings. Hence it is necessary to define the subject proposed for consideration. Progress, first, may denote the spread of evolutionary doctrine. But this is patent, so that discussion is not required. Or it may mean the development of biological theory. In regard to this we need remember only that progress has of late been making, since progress here, contrary to the earlier belief, has proven indispensable. The fact of evolution is established. The form, the law, the process of evolution, and the forces at work therein, remain subjects of eager technical debate. Or, thirdly, progress might refer to the readjustment of principles occasioned by the acceptance of evolution. This phase of the matter lies more fully within the philosophical field; still it is not the one now suggested for discussion. Our subject proper may be termed the noetic of evolution, the discussion of the concepts and principles implied by evolution, and on which it is based. What progress has been made in respect of these? What was needed? How much has been gained? What remains to be accomplished? Along with these questions, I shall also recall certain phases of the history of opinion.

1. I begin with a negative statement of progress which may excite dissent: a just estimate has not yet been reached of the origin of evolutionary theory. It is common to date the beginning from Darwin. But genetic views were fundamental in nineteenth-century thinking before Darwin announced, in part before he had conceived, "The Origin of Species." Among naturalists a notable minority had been groping their way toward a theory of descent. Spencer, at the mid-century, was advancing from sociology, biology, and psychology, to his cosmical doctrine. Prior to both Darwin and Spencer many of the *Geisteswissenschaften* had felt the influence of idealistic evolution, or had of themselves approached their problems

<sup>1</sup> Read before the American Philosophical Association, Harvard University, December 28, 1911.

by the genetic line of attack. Great as Darwinism was—in itself and through its effects—it may be questioned whether part of its success was not due to the preparation previously made for evolutionary conclusions. This question has special pertinence in regard to the influence of evolution beyond the limits of biology. Concerning this broader field there has been, and there persists, some confusion of opinion. Here, too, Darwin's work has been the greatest single force. But it has not been the only force, or the earliest, or the creative force in the temporal sense of the term. More often—in the phrase of a recent writer<sup>2</sup>—it has furnished “vast reinforcement” to tendencies already existing.

2. Progress has been made in distinguishing phenomenal from transcendent evolution. Though Darwinism was not the sole cause of the intellectual revolution of the mid-century, it was the principal cause. The movement thus involved a scientific theory. And as we look back to the discussions of the sixties, how few there then were who distinguished between scientific results and transcendent implications. Primarily the issue lay between rival theories of organic life: Are species fixed in nature, or are they mutable, produced by gradual process? But this issue was phrased in terms which combined science and theology: Have species been created once for all, or are they mutable and explicable by descent? The question of phenomenal fact and law was crossed with a transcendent problem.

Related, of course, these questions are. And under the conditions of thought fifty years ago it was inevitable that they should be united. Nevertheless the consequences were disastrous. In regard to them, and concerning a number of kindred questions, the result was extreme confusion. The light engendered by the controversy was small, the heat in inverse ratio. Now, however, we marvel less at the clash of opposing doctrines and the emotional disturbance than at the tacit assumptions which were fundamental to the whole debate. Among these the fallacy under consideration took a prominent place. Neither orthodox nor revolutionary distinguished between phenomenal truths and ultimate interpretations.

From this fallacy later thought is happily delivered. At least, in this connection progress has been making in the sphere of ethics and theology. Whether the gain is equal in philosophy proper appears more doubtful. Fact and notion, law and ultimate principle, differ, whatever the instrument of transcendent thought may be—whether faith or seasoned speculation. But concerning evolution the distinction has been made more clear in the former than in the latter case. Our scientific brethren we can hardly hold re-

<sup>2</sup> Waggett, “Darwin and Modern Science,” page 480.



sponsible for the confusion—or popular reflection. Have philosophical thinkers always been clear on the point themselves? Have they contributed in due measure to the general enlightenment?

3. Evolution and the sciences. The problem just suggested has various ramifications. Scientific evolution and philosophical evolution touch—and differ. Hence arise questions in the logic of science—on the other hand, also, questions of metaphysical conclusion. Our primary concern is with the problems of the former class, among which the subject of method is first and prominent.

At the end of the “*Origin of Species*,” Darwin predicted the application of evolution to psychology and anthropology. This prophecy, as all are aware, has been amply fulfilled. The mental sciences like the organic, sociology and ethics as well as psychology proper, have felt the stimulus of genetic ideas; not, however, without doubtful transfers of method and explanatory principle from one science to another, or from the sciences of one group to a group essentially diverse. Biological evolution has wrought out—Darwin, cautious technician that he is, concludes—“the necessary acquirement of each mental power and capacity by gradation.” The struggle for existence determines organic evolution: mental evolution and its sub-varieties—social, ethical, artistic, literary, religious—the extremists urge, must follow the same law.

Here progress has been forced by the continuing inquiry. The phenomena themselves have compelled revision of the categories chosen to explain them. Two examples may be cited in illustration. In moral evolution, as speedily appeared, the law of struggle in its primary form is a doubtful application. It would tend, for one thing, to eliminate rather than to conserve the superior individual. Therefore it was referred to the survival of the group, and competition was interpreted as tribal instead of individual. Later the problem of heredity grew pressing, and in particular the problem of mental inheritance. Here the emphasis has recently been placed on the importance of the social environment, and a return has been made to the doctrine of social heredity—a position, I venture to think, which we should never have abandoned.

Progress then has been making at this point also. Is it, however, complete? Is it so great as is vitally needed for the independent prosperity of the sciences of the mental group? An affirmative answer would be of questionable validity. Undoubtedly the climax has been passed. No longer—or, at least, more rarely—do we explain all things, from theology to summer novels, by natural selection. But biological psychology continues fairly prevalent. And one has even heard echoes of a similar spirit in recent developments of philosophy itself!

4. The presuppositions of evolution: that is, the presuppositions of a noetical kind, the concepts and principles assumed by evolution and on which it depends. Such are present, even in the scientific form of the doctrine, in evolution as a theory of descent. Still more are they present and determinant when the consequences of organic evolution are drawn, when its conclusions are brought to bear upon broader problems, when its methods are applied in other departments of thought. If the matter itself admitted of uncertainty, the doubt might be dispelled by a glance at recent history. Fifty years ago men confused scientific evolution and its transcendent implications. For the most part, also, they overlooked the bases on which their own arguments rested. Consider, *e. g.*, the famous meeting of the British Association at Oxford in 1860. In the discussion between Wilberforce and Huxley the honors lay with the scientific thinker. In ethics, as in science, the biologist showed superior to the bishop. In epistemology, however, were not both at fault? For them, as for most thinkers of the time, the debatable issue was the question of fact: Is man descended from some animal form? The corollaries of the fact, they felt, needed no debate: If man is so descended, man is man no longer. For the underlying notions which condition this conclusion were left out of account; or they were deemed of little moment. Change and becoming, origin and nature, genesis and value—how many thought of these ancient problems as fundamental to nineteenth-century reflection? Yet nothing is clearer, if the matter is thought through to the end, nothing more certain, than that such concepts underlie the whole body of genetic doctrine.

If now we ask what progress has in this respect been made, the answer is complex. In certain ways the advance has been considerable. For the pressure of the questions forced by evolution on the world compelled attention also to their underlying bases. I do not mean to say that this attentive thought has always realized its own procedure. That is rarely true in the history of such movements. More often there is a mingling of methods—reflective thinking, conscious of its own nature and aims, goes hand in hand, or side by side, with processes which may best be described as processes of trial and error, practical attempts at partial readjustment adapted to the needs of given cases. Such processes have in special measure been characteristic of our time. We could not become philosophers at a bound. Or rather, we have philosophized in the happy belief that naught of metaphysics was mingled with our thinking. The origin of species, the descent of man, the genesis of conscience, political, social, religious development—in measure we have thought through, or worked through, or “muddled through” our problems. And though we often knew it not, we have been busy the while with these



other cruces—origin, nature, worth, and their relations—for they were inwrought in the tissue of our reflective task.

Progress has been most pronounced in the field of the mental sciences. A letter of Henry Sedgwick, dated in the middle eighties, well expresses the change from the earlier point of view. Thinking of the non-moral and the moral stages of evolution, Sedgwick wrote: "I can not feel any doubt as to the *historic fact* of the time-relation of the two. . . . But I do not think that the determination of this historical question settles the relation between the two: the fundamental question still remains open whether what is later in time is to be understood by contemplating what went before it, . . . or whether the process of cosmical or of human development is not of such a kind that the significance of the earlier stages is only revealed when we look forward to their end. This, I think, is the deepest question of philosophy in the present stage of thought." The conclusion suggested by the lamented Sidgwick was reached by many thinkers in the closing decades of the century gone, but not by all. On questions of such import scholars will differ, even when the issues have been made clear, and when, so far as may be, they have been thought through. Above all, these causes of divergence produce their maximum effect in ages which, like our own, have felt the spell of great discoveries. But if, in the nature of the case, progress could not be complete, has it been adequate? I fear the answer must be given in the negative. Indeed, if I mistake not, there has been of late considerable reaction toward the earlier and the cruder point of view. Current accounts of evolution and its influence not merely proclaim the universal potency of the genetic method, they appear to imply that no other estimate is possible. At times this conclusion is urged as the unassailable outcome of nineteenth-century reflection. It should rather be termed the position of the mid-century, or of the first decades after the mid-century was passed. For it ignores the progress which the later years have brought.

It is necessary in conclusion to guard against a possible misunderstanding. The thesis that progress has been less than adequate does not imply agreement with venturesome essays of a contrary type. If certain forms of genetic theory ignore their own noetic problems, some philosophers of evolution attack these questions in a spirit of surprising confidence. The question may be raised whether Bergson himself should not be included in the latter class. Mind, Bergson defends in the evolutionary process, and other important interests. But what of the method of defense? It is incisive, it is illuminating, the argument is phrased in a marvelous style, the doctrine is one of those works of genius which get us forward by its stimulating influence, whether or not it can in the end be accepted as true. Is there,

however, sufficient evidence for the conclusions reached? This at least is the doubt which recurs to some of us who welcome many of these conclusions. In the case of other systems the foundations are certainly too weak to support the constructions which are reared upon them. Therefore systems of this type also represent imperfect progress. For they are unstable, and, being unstable, they fail to realize their legitimate aims. In sum the noetic cruxes suggested by evolution can not reasonably be ignored. Neither, on the other hand, are they solvable at a stroke.

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## THE FEELING OF OUGHTNESS:

### ITS PSYCHOLOGICAL CONDITIONS

THIS JOURNAL having been kind enough to review<sup>1</sup> with some sympathy a paper of mine, which, as Professor Leuba phrased it, was intended to "clear much of the ground surrounding one of the fundamental problems of the psychology of ethics," I venture to submit to American men of science the conclusions of a larger inquiry which is to appear this year in Binet's *Année psychologique*.

The problem is that of the psychological conditions of this specific and well-known state of mind which a subject expresses when he says: "I am conscious that I ought." In a paper<sup>2</sup> of 1897, Professor Leuba has called it "the feeling of oughtness." I shall use the term, although it seems to me that the latest researches on the psychology of *feelings* tend to confine this word to affective states, where the consciousness is necessarily either agreeable or painful. Writing in French, I have used the expression *la conscience de devoir* or *l'obligation de conscience*.

The feeling of oughtness is not always connected with the impression of moral goodness. I have found it very often in introspections gathered during experiments on judgment and ideation, and was thus put on the way of an experimental study of this feeling such as, if I am not mistaken, has never been conducted before.

The first results concerning this feeling of oughtness in the laboratory experiments are the following:

1. It is the apperception of an internal conflict between two tend-

<sup>1</sup> Vol. VIII., page 361.

<sup>2</sup> "The Psychophysiology of the Moral Imperative," *Amer. Journal of Psychology*, Vol. VIII., No. 4.



encies, one of which has its origin in some definite *orders* (French *consigne*; German *Aufgabe*) given to the subject as to a sentry.

2. These orders give birth only to a tendency if they be *accepted* by the subject. This acceptance implies, as its condition, a peculiar relation between the subject and the inquirer. From the standpoint of the subject this relation may be roughly described as an affective state—a combination of love and fear and admiration which gives to the experimenter prestige and authority in the eyes of the subject.

These being the results of a first investigation, the question arises: What are the tendencies of every-day life which can be assimilated to the tendency originating from *orders*? What are the tendencies which, if they meet with opposition, shall give rise to the feeling of oughtness? Habit, social custom and example, instinct have been asserted by several schools to be the fountain of moral obligation. I think it can be shown that none of them is, if considered alone, the source of any obligation whatever. Habit (of church going, *e. g.*) enforces the feeling of oughtness; it does not create it. Social custom has certainly in every one of us a binding force; but it does not act in this way through habits nor through the ideo-motor power of example. It is felt as an obligation, because there are, at its origin, positive *orders* given by respected authorities to affectively disposed subjects: in other terms, because the circumstances are exactly the same as in the laboratory experiments alluded to.

If, in speaking of instincts, we first think of animal life, is it not curious that the symptoms, which might be interpreted as proving the presence of a feeling of oughtness in animals, are to be found in dogs to whom *orders* are given in general terms? Ought we perhaps to consider our domestic animals as Aristotle considered the slave: if they be not apt to form general judgments, they might be, nevertheless, capable of receiving them?

The orders given in general terms to the psychological subject as to the soldier have not only the same characteristics as the ancestral *taboo* to which the sociological school gives such a great place in the explanation of moral ideas; they also answer exactly to the description which Kant gives of the moral law: categorical, imperative, but requiring some experience, if one is to see where they have to be applied in practical life. This resemblance is easy to account for. The *orders* are indeed a product of reason, if we think that reason has a part in every universal proposition, be it indicative or imperative. But we have no ground for invoking here a *pure* reason dictating a law to all intelligent beings, whether human or not. Kant says himself that his theory does not in the least account for

the practical effect of this purely rational law; the fact of obligation remains to him entirely unintelligible.<sup>3</sup>

If we say that the origin of obligation is to be found in an universal proposition formulated by a concrete person and accepted by another person, we shall understand the binding character of some orders, which to our intellectual judgment appear absurd. The obligatory character of the law of sacrifice, as it is felt by many Christians, is inconsistent with the rationalistic theory as well as with the sociological one: this law, taken universally, is anti-rational as well as anti-social. With our theory, if we have received the law from somebody whom we love and admire, this is sufficient to explain the hold it has on us.

Two questions are forced on our attention and require further examination: (1) How does the reason work in order to transform the "impression of good," given by a particular action, into a general judgment of value? (2) How is the affective relation, necessary to the acceptance of orders, originated? To this last problem so much may here be said: there is no ground to believe that prestige is always of social origin. Psycho-analysis shows a way in which biological and sociological values might be created apart from any social influence.

These few propositions may perhaps be of some interest even without the body of facts which in a longer article could be called upon to back them up. They are, as can be seen, purely psychological. Their ethical, pedagogical, and philosophical corollaries do not concern us here. When the causal relations, which we have set forth, shall be generally recognized, the various philosophies will have to reckon with them, and they will do so without difficulty. Some will welcome the contingent character of our moral obligations; others will be impressed with the great place our theory gives to the personality: to them the mystery of personality will soon seem as sacred and as adorable as did the mystery of the moral law.

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## DISCUSSION

### PROFESSOR DEWEY'S "BRIEF STUDIES IN REALISM"

IN the interesting "Studies in Realism," which Mr. Dewey has recently published,<sup>1</sup> he has done two things. In addition to presenting more fully than he had done before his own view of the

<sup>3</sup> "Grundlegung," 3d section, *sub fine*.

<sup>1</sup> This JOURNAL, Vol. VIII., pages 393 ff. and pages 546 ff.



nature of perception, he has criticized the doctrine of perception held by "epistemological" and "presentative" realists. It is this criticism of realism that I wish to examine in this paper.

The cardinal error Mr. Dewey finds in this realism is perhaps best summed up in these words: "Until the epistemological realists have seriously considered the main propositions of the pragmatic realists, viz., that knowing is something that happens to things in the natural course of their career, not the sudden introduction of a 'unique' and non-natural type of relation—that to a mind or consciousness—they are hardly in a position to discuss the second and derived pragmatic proposition that, in this natural continuity, things in becoming known undergo a specific and detectable qualitative change" (p. 554). The realists criticized are guilty, then, of believing that knowing is a sudden introduction of a "unique" and non-natural relation.

There are three adjectives in this charge, but I presume that only one of them has any dyslogistic significance. The suddenness of the introduction of any relation can hardly be objected to by any empiricist who sticks to his last. Nor can the recognition of the uniqueness of any relation be reasonably considered by Mr. Dewey as an anti-empirical procedure. He has himself recognized at least one unique relation and has given an excellent statement of what a unique relation is: "Here, if you please, is a unique relation of self and things, but it is unique, not in being wholly incomparable to all natural relations among events, but in the sense of being distinctive, or just the relation that it is" (p. 552). This sentence shows that the adjective that really is meant to count in Mr. Dewey's indictment is the adjective "non-natural."

Now why should the consciousness relation, which "epistemological" and "presentative" realists recognize, be considered non-natural? The answer seems to be that for them this relation is a relation "*to a mind.*" A very cursory glance over the pages of Mr. Dewey's articles will show that the realists he is criticizing, whether "presentative" or "epistemological," are constantly represented as holding that the thing known in perception is in relation "*to a knower*" or "*to consciousness.*" Every criticism he passes against these realists presupposes for its validity that these realists are committed to the doctrine that there is a non-natural "mind" or "consciousness" or "knower," and that anything in order to get known must get into a non-natural relation to this non-natural term. It is possible that these criticisms could be stated in other forms which should leave out of account this presupposition, so thorough-going in the form in which Mr. Dewey has stated them, but what the criticisms would then be would largely be a matter of conjecture. As the

criticisms now stand they have direct pertinence only to some type of non-naturalistic realism which is based on the recognition of "mind" as an indispensable "knower" in every perception.

Relation to a mind or consciousness or knower! This is a thesis which some years ago was quite generally supported, and among realists even now Messrs. Bertrand Russell and G. E. Moore still maintain this thesis. But most of the American thinkers, whom the American Philosophical Association's "Committee on Definitions" would class as "epistemologically monistic realists," have been as outspoken against this thesis as Mr. Dewey himself. For instance, Mr. Woodbridge and the contributors to the "First Program and Platform of Six Realists" have made it fundamental to their respective realisms that consciousness is a relation *between* things and not a term of a relation or a relation of things to mind.

Now Mr. Dewey has, in the commendable way so characteristic of him, made his criticisms as impersonal as possible. With two or three exceptions he has named no names; but he has made it, nevertheless, quite obvious that the "epistemological" and "presentative" realists he has in mind are those whose views are similar to Mr. Perry's. His reference to Mr. Perry's phrase, "ego-centric predicament,"<sup>2</sup> near the beginning of his second paper, seems to be a clear indication of his meaning, so far as "epistemological" realism is concerned. As regards "presentative" realism his position is made unmistakable. "Many realists . . . have treated the cases of seen light, doubled imagery, as perception in a way that ascribes to perception an inherent cognitive status. They have treated the perceptions as *cases of knowledge*, instead of as simply natural events having, in themselves (apart from a *use* that may be made of them), no more knowledge status or worth than, say, a shower or a fever. What I intend to show is that if 'perceptions' are regarded as cases of knowledge, the gate is opened to the idealistic interpretation. The physical explanation holds of them as long as they are regarded simply as natural events—a doctrine I shall call naïve realism; it does not hold of them considered as cases of knowledge—the view I call presentative realism" (p. 395). All epistemologically monistic realism, thus, is explicitly brought within the scope of his criticism.

Now how does Mr. Dewey show that when perceptions are regarded as cases of knowledge the gate is opened to the idealistic interpretation? After stating his own "naïve" realistic position he says: "But suppose that the realist accepts the traditionary psychology according to which every event in the way of a perception is also a case of knowing something. Is the way out now so simple?

<sup>2</sup> Of the bearing of which on the realistic position I have written elsewhere, *Philosophical Review*, Vol. XXI., pages 351 ff.



In the case of the doubled fingers or the seen light, the thing known in perception contrasts with the physical source and cause of the knowledge. There is a numerical duplicity. Moreover, the thing known in perception is *in relation to a knower*, while the physical cause is not as such *in relation to a knower*. Is not the most plausible account of the difference between the physical cause of the perceptive knowledge and what the latter presents precisely this latter difference—namely, *presentation to a knower*? If perception is a case of knowing, it must be a case of knowing the star; but since the ‘real’ star is not known in the perception, the knowledge relation must somehow have changed the ‘object’ into a ‘content.’ Thus when the realist conceives the perceptual occurrence as a case of knowledge *or of presentation to a mind or knower*, he lets the nose of the idealist camel into the tent. He has not great cause for surprise when the camel comes in—and devours the tent” (pp. 395-6; most of the italics mine).

It is as clear as anything can be that here the gate is opened to the idealistic interpretation by the introduction of the phrases and clauses I have italicized. Once deny that a case of knowledge is a presentation of the thing known to a “mind” or “knower,” and the proof that an idealistic interpretation is involved in the treatment of perceptions as cases of knowledge loses all cogency. But this is just the denial that is made by many realists who still regard perceptions as cases of knowledge. These realists, however, in so regarding perceptions are “presentative” realists according to Mr. Dewey’s definition. In other words, Mr. Dewey’s proof of the essentially idealistic character of “presentative” realism requires two premises. One is that perceptions are cases of knowledge, and the other is that perceptive knowledge is presentation to a “knower.” Without the latter premise the proof halts, and Mr. Dewey must do without this premise if he is to represent the position of these realists correctly. Mr. Dewey’s proof then leaves untouched the question whether these realists have given ground for the idealists’ neglect of the physical explanation given by realists of such cases as doubled imagery (p. 395).

Now everything that is further urged in these two articles against “presentative” and “epistemological” realism assumes that all the advocates of this realism believe perception to be a presentation of objects “to a mind.” Hence the whole argument is void as against these realists who, while being “presentative” and “epistemological,” deny the existence of a “mind” to which objects are presented. It is quite possible, as I have already suggested, that some of the reasons urged against this type of realism can be restated so as to bear against it, but it is evident that in the form in which they have

been stated by Mr. Dewey they are beside the mark, if the mark is this type of realism.<sup>3</sup>

But there is one specification of the charge against "presentative" realism which it is possible here to examine without regard to the fact that it is implicated in the general misunderstanding already alluded to. Mr. Dewey says that if "presentative" realism be true the physical conditions which cause perception ought to be perceived along with other objects. "In the case of the seen light, reference to the velocity of light is quite adequate to account for its occurrence in its time and space difference from the star. But viewed as a case of what is known (on the supposition that perception is a case of knowledge), reference to it only increases the contrast between the real object and the object known in perception. For, being just as much a part of the object that causes the perception as is the star itself, it (the velocity of light) *ought* to be part of what is known in the perception, while it is not. Since the velocity of light is a constituent element in the star, it should be known in the perception; since it is not so known, reference to it only increases the discrepancy between the object of the perception—the seen light—and the real, astronomical star. The same is true of any physical conditions that might be referred to: *The very things that, from the standpoint of perception as a natural event, are conditions that account for its happening are, from the standpoint of perception as a case of knowledge, part of the object that ought to be known but is not*" (pp. 396-7).

The simplest way to answer this criticism is to challenge the statement. Why *ought* anything to be perceived that is not perceived? Either we have an empiricist theory of perception or we have an apriorist theory. Apriorism can, from its own presuppositions, lay down the law as to what ought to be. The genuine empiricist may also be concerned with what ought to be, but, in matters theoretical, what ought to be is for him only what he is led by experience to expect. If these expectations are not realized, he does not decline to accept what comes instead; he merely tries next time not to cherish such vain expectations. Now our past experience does

<sup>3</sup> The fact that such an acute thinker as Mr. Dewey can criticize an adverse view without realizing that he is thoroughly misapprehending it should make him more sympathetic with the failure of the critics of instrumentalism in understanding its presuppositions. It may also be suggested that perhaps one reason for Mr. Dewey's misunderstanding questions asked of him by a realist, questions that concern his view of consciousness, is that Mr. Dewey misunderstands the questioner's view of consciousness and is thus led to impute to the questioner an imputation to Mr. Dewey of a view which the latter has first erroneously imputed to the questioner. (See Mr. Dewey's "Reply," this JOURNAL, Vol. IX., pages 19 ff.)



not justify us in saying that whenever anything is perceived the physical conditions which give rise to our perception of it are all perceived. If then we persist in saying that nevertheless they *ought* to be perceived, this "ought" is evidently not an "ought" of empirically warranted expectation, but an "ought" of *a priori* legislation. It is a bit of sheer dogmatism, of licentious intellectualism; and the use of such an "ought" by an avowed opponent of dogmatism and intellectualism for the purpose of demolishing an empirical realism comes as a startling surprise, not unrelieved by a touch of humor.

"Presentative" realists who regard consciousness as a selective relation among things, a relation unique in the sense of being the distinctive relation it is and comparable to other natural relations,<sup>4</sup> have in this conception of consciousness a means of explaining why the physical conditions of perception as a case of knowledge are not themselves perceived. This explanation consists in showing that what has to be explained is an instance of a general characteristic of selective relations. This characteristic is exemplified when the chisel of the sculptor, though it is the physical condition of the marble's assuming a similitude to the model, does not itself enter into the relation of similarity with statue and model. Suppose, for another instance, that my room-mate at college invites me to spend the holidays at his home and that there I meet his sister whom I subsequently marry. When I thus enter into the matrimonial relation with the girl of my choice, must she and I include her brother in the family constituted by our marriage, because forsooth he was the condition of our coming to know and love and wed each other? Must we likewise marry the clergyman who officiated at the ceremony, and also marry the marriage-license which authorized it, because they too are the conditions of the marriage? What a monstrously redundant polygamy such an "ought" requires every bride and groom to commit! It seems the most "natural" thing in the world that new relations should arise and sometimes arise suddenly, and yet that the conditions, physical and otherwise, which brought about these relationships should not be included in the specific relational complexes produced by them. Why should we deny to the consciousness relation a similar privilege of obtaining among just the terms its conditions see fit to assign to it, without intruding ourselves upon it with the arbitrary demand that it should be more catholic in its terms than it naturally is?

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<sup>4</sup>"Experience and its Inner Duplicity," this JOURNAL, Vol. VI., page 232: "In answering this question I beg the reader not to allow the term 'togetherness' as I have employed it to prejudice him. Like every general term, it emphasizes common features and slurs over peculiar features."

## SOCIETIES

THE TWELFTH ANNUAL MEETING OF THE WESTERN  
PHILOSOPHICAL ASSOCIATION

THE Twelfth Annual Meeting of the Western Philosophical Association was held at the University of Chicago, April 5 and 6, 1912. In pursuance of the plan adopted by the executive committee, the morning and afternoon sessions of the first day were devoted to papers on ethics and the discussion of ethical problems. The special topic of the afternoon was "The Teaching of Ethics." The discussion of this topic, led by F. C. Sharp, J. H. Tufts, and J. W. Hudson, was lively and profitable. In the evening the visiting members were guests of the local members at a delightful dinner given at the Quadrangle Club. At the session immediately following, the President's address was given by A. W. Moore upon "Bergson and Pragmatism." The day was closed by a smoker where the usual good-fellowship prevailed.

The morning of the second day was given to a joint session with the Western Psychological Association, at which five papers were read and discussed. At the business meeting, which was held at the close of the afternoon session, reports were received from the Secretary and Treasurer, B. C. Ewer, showing a balance on hand of \$82.85, and from the Acting Secretary, H. W. Wright, showing an expenditure of \$9.58 for printing, postage, etc. E. B. Crooks, V. A. C. Henson, H. M. Kallen, and G. T. Kirn were elected to membership in the Association. Officers for the coming year were elected as follows: *President*, J. E. Boodin; *Vice-president*, B. H. Bode; *Secretary and Treasurer*, H. W. Wright; *Executive Committee*, A. W. Moore, A. K. Rogers, G. A. Tawney, W. K. Wright. The place and time of the next meeting were left to the decision of the Executive Committee.

The following are abstracts of papers read at this meeting:

*The Genesis and Function of the Ethical Ideal*: G. T. KIRN.

The ethical ideals are the product of the natural life which proceeds to organize experience.

Human life begins with instincts, and if ever more than an instinctive life is to appear the instincts must be redirected by the rational life.

In the growth of the ethical ideal there is a prelogical stage, for ethical ideals as well as concepts are formed before we become conscious of the process. They are largely the bequest of social heredity, and are enforced by social authority. But what at first is done unconsciously will in time be done under the direction of consciousness.

An instinctive act has consequences which are unsatisfactory and



the unsatisfactory results tend to inhibit the instinct. After a number of repetitions the "idea" of unpleasant future consequences will inhibit present impulses to action. The action of the moment is now organized with reference to life as a whole.

Society also makes the contribution, for the actions of one person have consequences for another. The painful response of the other has an inhibitive effect upon the agent; and the impulse of the moment is organized in a larger whole, which is society. In all cases the ideals crystallize out of experience and determine the direction a personality takes in the realization of itself.

Even the earlier prophets of Israel wrote history in order to trace the relation between conduct and consequences. Thus they ascertained the will of their God. The authority which at first is found in society is afterwards turned over to reason which instinctively urges that every intention, or volition, be consistent and in harmony with the experience already organized.

*The Essentials of a First Course in Ethics:* GREGORY D. WALCOTT.

A first course in ethics should give college students a fairly adequate survey of the field of ethical discussion and present a fairly consistent programme of procedure when face to face with actual ethical problems. The former result is gained by an epitomized history of philosophy, with emphasis upon the ethical contributions of the more important thinkers as presented in their own works; the latter, by a constructive discussion of a half dozen main topics, viz., "The Method of Ethics," which should be scientific against a general evolutionary background; "The Field of Ethics," where ethics is considered in relation to other subjects, especially sociology, from which it is practically differentiated by the altruistic motive; "The Different Planes of Ethical Living," which result, in part, in consequence of the opposition between the individual consciousness and the social consciousness; "The Criteria of Moral Progress," in connection with social progress evidenced by increasing social complexity and social control; "The Moral Ideal," which has both physical and psychical elements; and "The Realization of the Ideal," considered with reference to both an ideal and the actual environment. College students are a variable factor in the community and form a distinct class. They need to realize that their contribution to the social welfare will be in proportion to their affiliation with the larger group, but not complete submergence in it.

*The New Individualism:* JAMES H. TUFTS.

The new individualism defended by Professor Fite in his recent volume, "Individualism," takes as its point of departure the distinction between a mechanical and a conscious process, and proposes as

ethical standard, "To each according to his intelligence." The paper aims to examine how far the distinction referred to is consistently carried through, and whether the author's conceptions of the individual and society involve survivals of the mechanical point of view. As regards the criterion proposed, the question is discussed whether duty to another is adequately met by treating him according to his actual intelligence, or whether there is a duty to raise his intelligence.

*The Introductory Course in Ethics:* F. C. SHARP.

On account of its importance for the guidance of life, the course in elementary ethics should be accessible to the largest possible number of students. For this reason it should be free from prerequisites and should not ordinarily extend beyond the limits of a single semester. For the same reason, if a semester in theory and a semester in applied ethics are offered, each course should be so planned that it can be taken independently of the other.

The method generally employed in the class room in this country seems to be the "pouring-in method," in one of its several forms. This does not even accomplish satisfactorily the narrow ends which it sets before itself, that of the apprehension and retention of the results of the observation and thought of others. What is far more important, it does little or nothing to develop either the power to observe and think or the habit of observing and thinking. The method now in vogue should therefore be replaced by the method of discovery, in which the members of the class are given problems to work out and the teacher supplies only so much of the necessary information as the students are unable to obtain by their own efforts. Since we all live in an ethical laboratory the introduction of this method into ethics is a comparatively simple matter. The teaching of introductory ethics through the study of the history of ethics will by no means accomplish the results obtainable by the method here recommended.

*The Content and Method of the First College Course in Ethics:* JAY WILLIAM HUDSON.

The founding and maintaining of a concrete, democratic society is not merely a political project; it is primarily an ethical undertaking for the sake of a very definite ethical ideal of human welfare. It is an undertaking which implies rational, self-conscious responsibility on the part of every real member of it. This, in turn, implies the self-conscious examination and evaluation of moral standards by every man and woman who have achieved democracy's rights and duties. Education for democracy, in contrast with education for less autonomous forms of society, means a new and cardinal emphasis upon a thorough education in all the technique of efficient moral re-



flection. There is only one course in which the future citizen can receive a direct and intensive training of this sort—the course in ethics. The content and method of the course must be modified in terms of this neglected fact.

*College Ethics for Freshmen:* BERNARD C. EWER.

Many college troubles are due in part to undergraduate ignorance of college ideals. There is need of a systematic course of study, in the curriculum of the freshman year, dealing with the various educational and social aspects of college life. Such a course would include consideration of the history of the American college, its purpose, the individual programme of study, departments and methods of study, grades and honors, honesty, educational interests outside the curriculum, health, athletics, fraternities, co-education, student government, college spirit and college honor, religious institutions, the relation of the college to the home and to the surrounding community, the choice of a vocation. It should afford training in study methods, and could be combined with work in various departments. The literature used should include books and magazine articles on the college, and also the best popular books on education, health, American social and political life, and biography. Such a course would impart seriousness to undergraduate purposes, and would help to establish a cordial understanding between students and faculty.

*Bergson and Pragmatism:*<sup>1</sup> A. W. MOORE.

*A Psychological Definition of Religion:* WILLIAM K. WRIGHT.

The definition defended was: "Religion is the endeavor to secure the conservatism of socially recognized values through specific actions that are believed to evoke some agency different from the ordinary ego of the individual, or from other merely human beings, and that imply a feeling of dependence upon this agency." The definition is subjective and empirical and covers all cases of what any individual of any religion would himself regard as a religious act, and differentiates religion from animism, magic, morals, ethics, esthetics, and science. It is practically useful as a preliminary step toward determining the objective function of religion in human society, which is found to be conservative and socializing. This function is so significant as to furnish a strong defense for the ontological validity of religion in the field of contemporary metaphysics.

*Present Status of the Problem of the Relation between Mind and Matter:* MAX MEYER.

Modern scientific progress is largely due to the fact that scientists have ceased to introduce ghosts as causes into the explanation of objective facts. Accordingly, we ought not to introduce ghosts, sub-

<sup>1</sup> To be published in full elsewhere.

jective states, into our explanations of animal behavior, as is quite commonly done by comparative psychologists who speak of satisfaction as stamping in paths of low resistance in the nervous system, unless a scientific advantage is to be gained by thus deviating from the approved method of science. No one, however, has ever shown any advantage to be thus gained. If by interaction this ghost theory of animal and human behavior is meant, then we certainly ought to prefer parallelism, that is, purely objective science. If, on the other hand, by parallelism is meant that corresponding subjective states and nervous processes are strictly simultaneous, then we ought simply to wait till the answer is given by proper observation, which may become possible in the future. The most urgent need of the present time is the establishment of definite correlates of specific mental functions and of specific nervous functions so that we may translate subjective descriptions of human life into objective terms for the benefit of a purely objective theory of human behavior.

*The Two Theories of Consciousness in Bergson:* E. B. MCGILVARY.

In "Time and Free Will," duration and motion are mechanical syntheses; *i. e.*, there is neither duration nor motion, except for a conscious spectator and except in consciousness. "If consciousness is aware of anything more than positions, the reason is that it keeps the successive positions in mind and synthesizes them" (p. 111).

In the first chapter of "Matter and Memory," not only do objects exist independently of the consciousness which perceives them, but these objects have motion and activity of their own; "the truth is that movements of matter are very clear, regarded as images, and that there is no need to look in motion for anything more than we see in it" (pp. 9-10). So far is consciousness from being the agent whose synthetic activity gives motion to inert spatial things, that on the contrary, consciousness arises only when the independent motion of matter is partly suppressed in order to make way for the indeterminate action of our bodies.

According to the former view there is more in consciousness than in matter; there is motion in consciousness, which matter by itself does not have. According to the latter view there is less in consciousness than in matter; the motion that matter has in its own right is reduced to give play to freedom. Bergson oscillates in the latter part of "Matter and Memory" and in "Creative Evolution" between these two views. His behavior exemplifies in a beautiful manner his theory that every one carries all his past with him and that just so much of this past as is suited to the exigencies of the present moment becomes effective. When it is suitable to the exigencies of his philosophy to remember that matter has been proved



to be inert, he remembers that this proof has been given. When it is suitable that matter should be active, he remembers that matter has been proved to be active. The difficulty which the reader finds in his later view of matter is thus due to the fact that Bergson combines two radically inconsistent views.

*The Mechanism of Social Conduct:* G. H. MEAD.

The mechanism of social conduct is to be regarded from the standpoint of social behavior. The peculiar character of social behavior is found in the gesture which influences other forms in acts involving members of a group. These gestures are the first overt indications of the response of another individual who forms the answering gesture. Within this field of the conversation of gestures lies social behavior. The social object or percept may be defined as the gestures which lead to a social act when it is sensed by another form, and arouses in that form the imagery of its answering gesture and the consequences of this response. This involves as yet only responses to social objects in the experience of an animal, but no consciousness of a self. This is presumably not present in the consciousness of animals lower than man nor in that of very young children. It is a growth in consciousness. The phase of social behavior which seems to give the mechanism for the formation of a self, is found in the human animal's ability to stimulate himself socially, largely through vocal gesture, as he stimulates others, and to respond to this gesture as he would to the vocal gesture of another. A self is in these terms one's own response to one's own social stimulation. One is able to carry on a conversation with one's self and one carries it on with others. This "me"—the empirical ego of psychology—arises only over against the consciousness of other selves and gains its importance through its function of rehearsing inhibited social actions in their relation to each other, in the reflective preparation for conduct involving interaction with other individuals of a group.

*The Paradoxes of Pragmatism:* B. H. BODE.

The paradoxes of pragmatism have their origin in the fact that certain of its doctrines are interpreted from different and incompatible standpoints. Such difficulties as arise from the appeal to immediate experience, from the changes that objects undergo in becoming known, and from the influence of the organism upon the character of our experiences, may be removed if we avoid the confusion of standpoints. The appeal to immediate experience is at the bottom a repudiation of the unknowable, to which other philosophies are bound to have recourse in order to give a consistent account of the nature of the truth-relation. The pragmatic account avoids this

result, and it is able to establish an intimate connection between the origin of hypothesis and the process by which it is verified. The apparent impossibility of attaining true knowledge of the past, if knowledge involves a change in things, ceases to be formidable if we do not construe the relation of organism and environment, and of past and present, in a mechanical fashion. Once we give up the attempt to cut off the past from the present and to make of knowing a process in which things are passively registered, the pragmatic explanation becomes straightforward and natural.

*The Interpretation of Reality:* H. W. WRIGHT.

Rationalism, whether it takes the form of naturalism or of intellectualism, is unable to interpret a reality which is undergoing genuine evolution. Naturalism attempts to interpret the real universe in terms of facts and forces whose modes of action are already fixed and predetermined, and hence leaves no opportunity for the occurrence of the really new, in fact, no possibility of evolution itself. Intellectualism, on the other hand, converts the legitimate demands of human thought for consistency and coherence of ideas into a test of reality, and, finding the actual world neither unified nor self-consistent, rejects it as illusory and regards the temporal process of change which we directly experience as mere appearance, and evolution itself as unreal. Neither is feeling nor any form of sensuous intuition adequate to the interpretation of real evolution. To which of our capacities shall we look then? Assuredly, to that activity which produces our own personal development, *i. e.*, *will*. For it is volition which maintains the unity of our experience while at the same time continually introducing new objects into it. The activity of will is therefore the very principle of genesis itself, the essence of real development, showing us the ideal possibilities of the future, thus converting the ideal into actuality. It is consequently able as no other form of human experience to interpret the nature of reality, not as being, but as becoming, as that which is achieving organization, is winning unity.

*Cognition, Beauty, and Goodness:* H. M. KALLEN.

Private, concrete, elusive, in itself neither mental nor amental, beauty is the optional mode of that positive, intrinsic, value-relation which binds the mind to its object in such wise that the two are completely and harmoniously adapted to each other in the very act of apprehension.

*German Pragmatism:* G. JACOBY.

In opposition to Professor James's formula: "Germany lags behind in pragmatism," we propose that "America lags behind Germany." American pragmatism is the reaction of a biological type



of philosophy against the rationalistic idealism of the so-called "Hegelian" school of this country. Forty years ago a similar biological philosophy in Germany reacted against the true Hegelian school of Hegel himself. From this anti-Hegelian movement derives the well-known German pragmatism of Ernest Mach, Wilhelm Jerusalem, George Simmel, Richard Avenarius, Wilhelm Ostwald, and Hans Vaihinger, whose recently published standard work on "Die Philosophie des Als Ob" was written in 1816-1818. If American pragmatism meets at present with disapproval in Germany this is due to the fact, that just at the time when anti-Hegelian pragmatism became popular in this country, Germany had become tired of it and had just entered a new counter-reaction, the so-called "revival of philosophy." The German revivalists reject pragmatism as a kind of utilitarianism. But this is a misunderstanding. It appears that pragmatism is the best, if not the only method, by which the tendencies of the new German movement can be worked out satisfactorily.

H. W. WRIGHT.

LAKE FOREST COLLEGE.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Analyse et Critique des Principes de la Psychologie de W. James.* A. MÉNARD. Paris: Felix Alcan. 1911. Pp. 466.

"*Une étude de ce genre*," M. Ménard writes in his preface, "*destinée tout particulièrement à exposer l'essentiel d'un ouvrage important peu ou mal connu comportait des citations où le lecteur pût retrouver l'auteur, malgré le commentateur. On excusera, pour cela même, notre loyalisme d'en avoir abusé.*" This sentiment is the key to the book. But M. Ménard is too modest. His analysis is desirable not only for the French public; it performs a needful and a high service also for all readers to whom the psychological work of William James is of interest—readers American or English or continental. Nor is there need to deprecate the "loyalty" of quotation, or to excuse such divergences between author and commentator as arise in the book. M. Ménard's criticisms are those of a reflective interpreter, not of a hostile judge. What he says comes rather by way of supplementation and complement, than by way of contradiction or disputatious abstraction.

Of the many excellences of this summary, not the least seems to me to be the effectiveness with which it exhibits the inward consistency and articulation of James's psychological method. To the incidental reader and even to the student who approaches the "Principles" with the bias and preconceptions of the barren psychology of the laboratory, a psychology dominated largely by the Wundtian influence, much in the master's

great book seems discontinuous, unreflectively empirical, contradictory. M. Ménard shows how superficial such an impression is. The eight chapters, in which James's principles of psychology are expounded reveal an architectonic that is not merely the expression of the deductive habits of the French mind, which will set its world in order whether or no; it is much more the natural articulation of James's conclusions on psychology, now treated as objects to be exhibited, where in the text they are principles to be discovered.

It is needless, for readers of the JOURNAL, to restate these principles or their review by M. Ménard. He throws them, however, into relief by flanking them, with respect to method, by the views of Wundt, and with respect to content, by those of Bergson. In M. Ménard's opinion they shine by the contrast as well as by their inward light, and this is not an opinion with which I am ready to disagree, though, I do not doubt, others may and will.

The contrast in method depends on and derives from the contrast in content. From the standpoint of radical empiricism, mental states are continuous and genuinely indivisible. Consciousness is a stream; no state of it can be "compounded." Mental facts, hence, can not undergo analysis from within, and the method of psychology will, in consequence, involve no more than the description of such states and their coordination with their physiological correspondents. These latter, indeed, the ground and condition of mental states, are susceptible of determination with respect to their components, if they have such, but no state of consciousness can be deduced or compounded from simpler mental elements. Thus there should be a radical difference between the method of psychology and that of the physical sciences. Wundt, however, denies the necessity of such a difference. Believing that there is no means of knowing, other than the analysis of a whole into its elements, he maintains that psychological knowledge must consist of just such analysis, *i. e.*, "if we succeed, in psychology, under the same given and measurable conditions, in causing a certain complex to vary in a constant manner, we should be able to conclude that this complex *contains* a constant element which is one of its *constituents*." On the basis of such variations Wundt finds two elementary psychological categories—pure sensations and simple feelings. James, starting empirically with content, argues to a method determined by that content: Wundt, starting *a priori* with a method, argues to a content that alone such a method can adequately handle.

Both procedures and conclusions are practically antithetical. For James, consciousness is nothing so much as a *stream* in which identical and changeless elements can not be found; least of all, elements. For Wundt, consciousness is a comparatively stable composition, and its transitive and elusive aspects are negligible. Can there, then, be no compromise between the procedure of James and that of Wundt, no genuinely solid psychological knowledge? Not so, thinks M. Ménard. James's own work is such a compromise. If mind is a stream, its bed, the nervous system, is compared with it, not a stream. The action of the nervous system is the resultant of the interaction of its elements—a physical thing susceptible



to just that experimentation which Wundt desiderates. Thus, on the side of the mind, we get purely empirical description; on the side of the body, *scientific* analysis of conditions coordinate with the states subject to this description. Laboratory psychology, hence, is both possible and desirable. But its business is not the disintegration of an undisintegrable stream of thought; its business is the coordination of the qualities of that stream with the exact conditions under which they appear.

As for Bergson, M. M  nard finds much in common between him and James. Both are agreed as to the inadequacy of the analytic method of approach to a knowledge of the mind. There is an intimate analogy between James's "radical empiricism" and Bergsonian intuitionism. The latter's conception of pure perception is practically identical with James's pure sensation, while his doctrine of the sensori-motor function of the brain, of the selective character of its activities, though they derive from different motives (not, in M. M  nard's opinion, opposed to each other) are analogous to the Jamesian teaching on the same subject. It is when one passes beyond the function of the nervous system and the abstraction of "pure sensation" to the problem of perception that differences are perceived. These differences are radical. They involve the questions of memory, recognition, and attention, and with respect to none of them are Bergson's answers satisfactory. These answers turn on his division of memory into "pure" and "motor," a division not founded, M. M  nard thinks, on introspection, and presupposing an unverifiable subconscious and inert mentality, that becomes, in perception, recognition and attention, conscious by some *vis occulta*. James's interpretation of the phenomena of memory in sensori-motor terms is simpler and more elegant, and by use of association by contiguity, serves equally well to account for "recognition" and the "feelings of familiarity"; and for attention by means of "accommodation" and "preperception." Although M. M  nard doubts whether James's distinction between "accommodation" and "preperception" is not a distinction without a difference, he holds that this doubt abates in no way the superior adequacy of the Jamesian account of memory, recognition, and attention. Nor is the latter account of will less superior to Wundt's hypothesis of a particular feeling of innervation for which there is neither logical necessity nor empirical evidence, direct or indirect, since all that is needful is the underlying theory of the sensori-motor function of the brain. In the light of this theory, James finds the will to be at most the deployment of the motricity of ideas, all of which are to him, in varying degrees, motor. But it does not follow from this intimacy between ideas and bodily action that the difference between mind and matter (which is felt through action) is reduced thereby. William James's assumption of the attitude of the populace toward mind and body—na  ve and irreducible dualism—is the only assumption that comports with scientific psychology. And herein again James excels both Wundt and Bergson.

It will be seen that there are here many possible points of difference with respect to interpretation. I do not propose to take these up. Interpretation is a matter of temperamental, not of logical, necessity. I can

not refrain the remark, however, that it is something of a pity that M. Ménard has found it necessary to confine himself to the "Principles" and has not followed the development of the master's thinking on psychological problems to its latest expressions. He notes, for example, but does not use, the chapter on the "Compounding of Consciousness" in "A Pluralistic Universe." Yet this has a profoundly important bearing on one of the positions taken in the "Principles." Then, there is the essay on the "Energies of Men," and still others. However, within the limits of his book M. Ménard has performed a service for which lovers of William James and of the science of psychology may well be grateful.

HORACE M. KALLEN.

THE UNIVERSITY OF WISCONSIN.

*Justice and Happiness.* W. BENETT. Oxford: Clarendon Press. 1911. Pp. 140.

Readers of Mr. Benett's "Ethical Aspects of Evolution," published several years ago, will be somewhat disappointed, at least in the form of the two essays, "Justice" and "Happiness," which are brought together in this more recent volume. The author shows himself, on the whole, the same close and independent thinker; he is often suggestively original as well as independent; but he seems here too much the abstract thinker. The essays are so much more of the concept-without-percept type than the earlier work. Not that he offers no illustrations, but such illustrations as he gives do not belong so convincingly to the natural scenery of thought. Again, the two essays are more than merely the two essays which they appear to be, since in point of fact the author has only one subject, namely, the relation of justice to happiness, and for his failure more openly and more completely to organize his material to this one end he should be criticized—at least with a gentle reproof! Still, although in both of the ways now indicated he has failed to make thought and fact, form and matter meet in a wholly successful harmony, nevertheless any critic must feel apologetic, for Mr. Benett has certainly made an interesting contribution to the subject—or subjects?—upon which he has written.

To give a very brief and inadequate statement of his contentions, the primary interest of men in justice is not acquisition or maintenance of happiness, but security for freedom. Primarily, justice makes men free—free to live, free to realize themselves, free in a "forward evolution." Thus justice is either retributive or distributive, and in either case is determined under two principles, one of personal equality, the other of desert or "equality of value." In retributive justice there is no conflict of these principles, rewards and punishments being governed entirely by desert, the position of men before the law, by personal equality; but in distributive justice there is and always must be conflict, for here, *e. g.*, in the distribution of property and social status, desert (especially after modification by historic development) and personal equality "are contradictory and can not be realized concurrently or by the same laws." Accordingly distributive justice is always a compromise between equality of persons and equality of deserts or perhaps (again remembering how the



original principal of equality of desert has been obscured by history) "between personal equality and personal inequality";<sup>1</sup> or say, further, between dispersion and accumulation of property, between socialism and individualism, in taxation between a poll tax and a graduated property tax. And, being such a compromise, "true justice, if established, will never be regarded as just by the adherents of either side" and, "because in a state of evolution the conditions on both sides are always shifting, both terms must be continually under revision" (p. 57). Justice, in other words, is ever a sort of restless balancing, an unstable equilibrium of opposites and herein one hears again the persistent theme of the author's *Ethical Aspects of Evolution*, to quote now the rest of his title, "viewed as the parallel development of Opposites." But, justice being such a mean or poise, being unjust if given to either side in excess, and any deviation from its character of a mean, as in either insufficient or excessive respect for property, bringing the dangers of degeneration, of extreme stability, which is a bar to progress, of deterioration of moral character, and of one form and another of despotism, there is the "plain inference that what we have to thank justice for is that it protects us from those dangers and secures our freedom and our uninterrupted progress along the path of evolution" (p. 70). As for happiness, it can not be primarily the motive of man's interest in justice, for justice, as has been shown, both implies and seeks life, progress, conflict, while happiness "is a state of peace or harmony from which the feeling of conation is as completely as possible excluded" and "its value depends entirely on the conduct which it accompanies" (p. 124). "To pursue happiness must be the same thing as to avoid conflict" and this "is the same thing as to renounce duty." In short "the pursuit of happiness as a direct end empties happiness of value, and the only prizes it offers are apples of the Dead Sea" (p. 125). Happiness, then, can no more be the motive of justice than peace is the motive of war. "Peace may be had, without war and without honor, by submission. When men go to war it is for freedom, and the love of freedom is a higher form of the love of life. Rather than lose that they would forego peace and live in perpetual warfare. And they would forego not only peace, but happiness also" (p. 121).

Such are Mr. Bennett's contentions and let me hope that by my attempts to state them clearly and fairly I have both tempered my introductory criticisms and justified my statement that he has made an interesting contribution to his subject.

ALFRED H. LLOYD.

MUNICH, BAVARIA.

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## JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. January, 1912. *Contribution to the History of the Concept of Reality* (pp. 1-10): OSWALD KUELPE. — By the concept of reality is meant "those objects whose determination is

<sup>1</sup> *Vide* whole of author's excellent summary, pp. 40-41.

arrived at by the several empirical sciences and their supplementary metaphysics, . . . and the fact becomes clear that in these cases there is something postulated, whose being and becoming are quite independent of all thinking and cognizing." An examination of the concept of reality throughout the course of philosophy shows that reality is postulated and determined. *The Problem of Time in Recent French Philosophy. I. Renouvier and Recent Temporalism* (pp. 11-31): ARTHUR O. LOVEJOY. - The beginning of a series of papers on the history of temporalism, the series to consider Renouvier, Bergson, Pilon, and James. The work of Renouvier is here reviewed. *Nietzsche and Democracy* (pp. 32-50): A. K. ROGERS. - An exposition and criticism of the three main features of Nietzsche's philosophy, namely, the appeal to nature, the rejection of the social and sympathetic virtues, and the attempted alliance with the scientific dogma of natural selection. *The Consistency of Idealism with Realism* (pp. 51-68): W. H. SHELDON. - "Realists then have been right in asserting the reality of abstracted unreduced facts, wrong in denying that they may also be reduced to terms of mind. Idealists have been right in asserting the finality of that reduction, wrong in denying the equal finality of the abstract." *Discussion* (pp. 69-81): *A Reply to Professor Royce's Critique of Instrumentalism*: JOHN DEWEY. *Reviews of Books* (pp. 82-97). Hastings Rashdall, *Philosophy and Religion*: H. W. STUART. Alfred Walth Whitehead and Bertrand Russell, *Principia Mathematica*: MORRIS R. COHEN. Simon Deploige, *Le Conflict de la Morale et de la Sociologie*: WARNER FITE. A. E. Taylor, *Varia Socratica*: G. S. BRETT. *Notices of New Books. Summaries of Articles. Notes.*

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band 25, Heft 2. January, 1912. *Wilhelm Dilthey* (pp. 143-153): A. TUMARKIN. - A tribute. *Im Druck erscheinene Schriften von Wilhelm Dilthey* (pp. 154-161): H. ZEECK. - 111 of Dilthey's more important books and articles published between 1859 and 1911. *Platon's Gesetze und die sizilische Reform* (pp. 162-174): J. O. EBERZ. - The Philebus, the Statesman, and the Timæus were succeeded by the Laws in Plato's final attempt to unite the Sicilian towns in a reformed state, with the cooperation of Dion and the Pythagoreans. *Aristophanischer und geschichtlicher Sokrates* (pp. 175-195): H. RÖCK. - I. An examination of previous trials for sacrilege preparatory to contesting Zeller's position that Socrates's execution was a judicial murder. *Die Anamnesis. Ein Beitrag zum Platonismus* (pp. 196-225): E. MULLER. - From a study of ten of Plato's dialogues it is made clear how essential his doctrine of *anamnesis* is to an understanding of his theory of knowledge, and of mental faculty. *Einige wichtigere Erscheinungen der deutschen Literatur über die Sokratische, Platonische und Aristotelische Philosophie 1905-1906* (pp. 226-236): H. GOMPERZ. - A critical but very appreciative review of A. Döring's *Geschichte der griechischen Philosophie*, and a combative study of R. Pohlmann's *Sokratische Studien*, to be continued. *Rezensionen* (pp. 237-245): M. Wundt, *Griechische Weltanschauung*: R. PHILLIPSON. H. H. Bockwitz, *Jean Jacques Gours's Philosophisches System*: B. JORDAN. G. Falter,



*Staatsideale unserer Klassiker*: B. JORDAN. *Die neuesten Erscheinungen. Historische Abhandlungen. Eingegangene Werke.*

REVUE PHILOSOPHIQUE. February, 1912. *La substitution psychique* (pp. 113-139): E. PAULHAN. — A study, in pathological and periodic variations, of consciousness in three phases of substitution; when an element is suppressed in a preexisting system leaving a gap, when a new element comes to replace one that has temporarily or permanently disappeared, and when a new element is accommodated to the old and the old to a new. *De la valeur pratique d'une morale fondée sur la science* (pp. 140-166): J.-M. LAHY. — Ethics must draw its ideals from the contributions of science and the certainty of a scientific ethics gives a mental calm and enthusiasm that the old ethics could never attain. *Les grands courants de esthétique allemande contemporaine* (2e et dernier article) (pp. 167-190): V. BASCH. — An exposition of Lipps's position, and the "science of art" of Semper, Grosse, Wundt, Schmarsow. *Analyses et comptes rendus.* Lash, *Die Logik der Philosophie und die Kategorienlehre*: A. L. *Les méthodes juridiques* (Leçons). A. Levy, *La société et l'ordre juridique*: G. RICHARD. Cornejo, *Sociologie générale*: DR. S. JANKELEVITCH. J. Van Biervliet, *Premiers éléments de pédagogie expérimentale*: L. DUGAS. A. de Fleuriau, *L'Activité réfléchie*: J. DAGNAN-BOUVERET. Werner Klette, *Über Theorien und Probleme der Bühnenillusion*: L. ARRÉAT. Berthelot, *Un romantisme utilitaire*: FR. P. Broder Christiansen, *Kritik der Kantischen Erkenntnislehre*: J. SEGOND. J. Burnet, *Plato's Phædo*: C. HUIT. *Revue des périodiques étrangers.*

Coffey, P. *The Science of Logic. Volume I.* New York: Longmans, Green, and Company. 1912. Pp. xx + 445. \$2.50.

Dubray, Charles A. *Introductory Philosophy: A Text-Book for Colleges and High Schools.* New York: Longmans, Green, and Company. 1912. Pp. xxi + 624. \$2.60.

Elliot, Hugh S. R. *Modern Science and the Illusions of Professor Bergson.* New York: Longmans, Green, and Company. 1912. Pp. xix + 257. \$1.60.

Gesell, Arnold L. and Beatrice C. *The Normal Child and Primary Education.* New York: Ginn and Company. 1912. Pp. x + 342. \$1.25.

Lickley, J. D. *The Nervous System: An Elementary Handbook of its Anatomy and Physiology.* New York: Longmans, Green, and Company. 1912. Pp. xii + 130. \$1.80.

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## NOTES AND NEWS

At the meeting of the Aristotelian Society on May 6, Miss Beatrice Edgell read a paper on "Imagery and Memory." "In examining the orders of fact which it is necessary for psychological analysis to recognize in its attempt to deal with memory as a cognitive state of consciousness,

we may, following Bergson, distinguish retention, the memory which repeats, the memory of habit and practise, from the memory which imagines, memory proper. The differing forms of the latter—recognition, persistence, reminiscence, suggested recall, and recollection—manifest with varying degrees of distinctness three orders of fact: an act, reference back to the past, imagery and meaning or object remembered. Imagery is treated as the product of the reference back, the form in which consciousness responds to a given situation. It is "presentation," distinguishable from the act of remembering on the one hand, and from the meaning or what is remembered on the other. Unless "presentation" be so recognized, there is no justification for regarding a cognitive state of consciousness as generically different from other forms of conscious experience. All consciousness would then be reducible to one supreme category—*conation*. A sketch plan of such a merely *conative* psychology has been worked out by Professor Alexander. But the attempt to eliminate 'presentation' leads to insuperable difficulties. When imagery is treated as object and non-mental, the 'pastness' of what is remembered becomes unintelligible, while the memory of the subject's own past states of consciousness is *ex hypothesi* impossible, for such past states can not be non-mental objects. Memory in this case has to be translated into 'revival' or 'renewal,' but such a translation proves upon examination inadequate to the fact as consciously experienced."—*The Athenæum*.

J. CARLETON BELL, Ph.D. (Harvard), managing editor of the *Journal of Educational Psychology* and director of the psychological laboratory in the Brooklyn Training School for Teachers, has been appointed professor of the art of teaching in the University of Texas. Dr. Bell will devote his attention chiefly to the experimental investigation of problems of teaching.

STEPHEN S. COLVIN, Ph.B. (Brown, '91), Ph.D. (Strasburg, '97), professor of psychology in the University of Illinois, has accepted a chair in educational psychology in Brown University, newly established in cooperation with the State Board of Education with the assistance of an appropriation made by the state legislature.—*Science*.

PROFESSOR HUGO MÜNSTERBERG, who has now sailed for Europe, gave an address on June 4 before the Naval War College in Newport, R. I., on "The Psychology of the Navy," and an address on June 5 before the American Association for Labor Legislation on "The Psychology of Industrial Efficiency."—*Science*.

THE fourth annual meeting of the Minnesota Psychological Conference was held at the University of Minnesota on March 29. The morning session was devoted to a discussion of the Treatment and Diagnosis of Exceptional Children.

PROFESSOR G. M. WHIPPLE, of Cornell University, has been granted a half year's leave of absence. He will make a study of the recent developments in applied and educational psychology in various educational centers of Europe.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE PRESENT STATUS OF THE PROBLEM OF THE RELATION BETWEEN MIND AND BODY<sup>1</sup>

I AM not sure that the title of this paper conveys the proper idea of its contents. It might have been more correct to call it "The Ghost Theory of Animal Behavior." But that might have impressed the hearer as too sensational.

At the last meeting of the Psychological Association, during the discussion of the place of psychology in medical education, one of the speakers found it necessary to warn against including in the teaching of psychology a discussion of the problem of the relation of mind and body. Let me say at once that I hold, on the contrary, that the problem of the relation of mind and body is the chief one, if not the only one, for the adequate discussion of which the medical student should turn to psychology, for practically every other content of the modern science of psychology is available to him in his courses other than those going under the name of psychology. Yet in spite of the apparent contrast of opinion, as just stated, I feel certain that my own ideals are not essentially different from those of the gentleman referred to. The contrast of opinion results chiefly from the meaning of the phrase "relation of mind and body." I object to throwing the problem of the relation of mind and body out of the curriculum of a medical student just because some teachers of psychology can see in it no more than the endless repetition of traditional metaphysical speculation.

If we follow the traditions of past centuries, a discussion of the relation of mind and body is merely the discussion of metaphysical arguments in favor of adopting the one or the other of the two metaphysical war-cries, interaction or parallelism. I can readily understand why any one who expects of science, not terms suitable for shouting, but terms suitable for clearer and more comprehensive thinking, should get disgusted with these terms interaction and paral-

<sup>1</sup> Read before the Western Philosophical Association, University of Chicago, April 6, 1912.

lelism. If these terms mean anything to me, they mean this. Any mental state of mine, I am convinced on scientific, empirical grounds, is in a specially direct manner dependent on (mathematically speaking, is a function of) one or more variables of the nature of nervous activity. Suppose we refer to such mental and nervous variables as corresponding values. Then the question arises: Do such corresponding values make their appearance in our experience strictly *simultaneously* or *in succession*? In the latter case we have the relation of cause and effect; that is, we accept interaction. If, however, there is strict simultaneity, we can not speak of the relation of cause and effect; that is, we accept parallelism. Now, it is almost incomprehensible that philosophers should have wasted their energies for centuries in order to derive from metaphysical arguments an answer to a question which can be answered only by appealing to observation. Imagine that geographers had attempted to derive from metaphysical speculation an answer to the question whether the North Pole was located on the ocean or on a continent. They had to wait patiently until some one had made the observation. We shall have to wait patiently until an instrument (let us think of an X-ray mirror) will have been invented which enables a person having a mental state to observe the corresponding value, the corresponding objective process in his own nervous system without the slightest interference with the normal function of this nervous system. Then we shall be able to decide whether the corresponding experiences, subjective and objective, are strictly simultaneous or successive. Until then let us wait and not spend any more time on interaction and parallelism than what is sufficient to describe the problem to the student as a problem whose solution lies in the future.

With the rise of modern biological science parallelism seemed to be destined to beat its rival into oblivion. But a curious reaction has set in, and the latest book on this subject-matter, that of William McDougall ("Body and Mind") steps before the public eye as an outspoken and very able defender of interaction. What has brought about this evolution and attempt at revolution, for no name other than revolution seems to me significant enough for the attempt to answer our question thus one-sidedly? It might be said that the preceding parallelism was equally one-sided. As a matter of fact, this can not be said of the parallelism of that class of men whom we may compare with McDougall—of the biologists. With the biologists, especially those of the nineteenth century, the confession of parallelism did not mean the dogmatic solution of the problem which, as just stated, can be solved only by future observation; it really meant only a confession of their belief that animal life, including human life, in all its phases and without any exception, could be



scientifically described without any reference whatsoever to subjective states, to states of consciousness. McDougall sees that this is the meaning of the term parallelism in the biology of the last centuries. He sees this so clearly that he defines his own view, interaction, as meaning that a scientific understanding of animal life is made possible only by introducing into the chain of causes and effects the subjective factor, consciousness.

Should we side with the majority of the biologists or with McDougall and those others of a similar trend who assure us of the insufficiency of a *purely objective* science of animal life? Before I give my answer, I invite you to glance back over a few thousand years of human thought. There was a time when no strange event seemed comprehensible to the human race unless it was referred to a god, a ghost, a demon as its source. Lightning was fire thrown by the weather god. A king eating grass did so because he was possessed of a demon. A friend found dead in his bed in the morning had been smitten by a ghost. We no longer think in this way. We no longer think of an epidemic, for example, as the work of gods taking revenge. Is not all progress of modern science due to the fact that scientists have consistently discarded all *ghosts* as causes explaining any natural phenomenon? And now we are asked to be inconsistent. In the explanation of animal, and especially human, life we are asked to introduce the ghost, consciousness, as a cause. Truly, before we take such an inconsistent step, strong proofs should be required that thereby we may hope to gain a scientific advantage.

Let no one object that introducing consciousness into the explanation of animal life, of animal behavior, is not the same as introducing a ghost into the explanation of an epidemic, for one's own consciousness is surely not an illusion. But here is the point: "one's own." The scientist who gives an explanatory description of an epidemic does not describe the disease from which he is suffering himself, lying on his death bed. He describes, if not exclusively, at least chiefly, his experience of the diseases which have stricken other people. And the scientist who portrays animal behavior describes chiefly his experience of the behavior of other organisms, not his own. But the *consciousness* of other organisms is not an experience. It is a ghost introduced for the purpose of explanation like the ghost introduced for the purpose of explaining an epidemic.

What, now, are the scientific advantages which are offered us, if we show ourselves willing to deviate from the established custom of several centuries of scientific progress, if we show ourselves willing to introduce, in our study of animal behavior, the ghost into our explanations? Let me quote McDougall, whom I regard as the ablest champion of the "ghost theory" of animal behavior. He adopts for

this theory the name of "animism." He says: "Animism recommends itself because it points to a great unknown in which great discoveries still await the intrepid explorer, a vast region at whose mysteries we can hardly guess, but to which we can look forward with wonder and awe, and towards which we may go in a spirit of joyful adventure, confident in the knowledge that, though superstition is old, science is still young." I have been unable to find that McDougall claims for his view any other scientific advantage. I do not know how others estimate the weight of this one; to me it has no weight at all. I am too much aware of the present incompleteness of our neurological science, of the existence of a great unknown lying there before the intrepid explorer, too enthusiastic and hopeful in my endeavor to clear up my notions of the manner in which animal behavior depends on nervous functions, too much imbued with the spirit of joyful adventure in the field of objective science,—to turn to the ghost theory for a mental tonic, for inspiration and encouragement. If that is the whole scientific advantage offered by the ghost theory, I must say that I do not need it. Let him accept the ghost theory who has already despaired of further progress of the objective science of nature, who needs a bracing up. I do not need it.

If there is no real scientific advantage attaching to the ghost theory, how are we to understand its reawakening, under the name of interactionism or animism, among psychologists, after it had seemed, for many years, to have been laid into the grave with its last defender, Lotze? There are two reasons for this. First, it had suffered under an argument unjustly wielded against it. The assertion had been made and had been generally accepted that the theory was incompatible with the law of the conservation of energy. Fifteen years ago Stumpf succeeded in pricking this bubble. Unfortunately, however, some psychologists mistook the annihilation of that hostile argument for a positive proof of the value of the ghost theory, which, obviously, it could not be. The second reason is of greater significance. The neuron theory held its sway over neurology, and, as a part of this theory, appeared the doctrine of the synapse. The ear, say, is stimulated. A nervous process runs along a neuron, but only to find itself blocked at a point which is both an end point of the path thus far taken and a division point from which many directions may be taken. The tension becomes greater and greater. The protoplasm stretches out its arms like an amœba and touches the protoplasm of another neuron. The nervous process then crosses this bridge. Thus far this seems plausible, and the doctrine of the synapse has always seemed plausible to the neurologist who asked no further question. But the psychologist asks a further and abso-



lutely essential question: Why does the protoplasm stretch towards one neighboring neuron when the organism happens to be in one situation, towards another neuron when the organism is in another situation? General silence with the neurologists. But some psychologists had an answer ready. They brought in their *deus ex machina*. The ghost does it. Consciousness, feeling, will, or whatever you call it, turns the bridge in the proper direction as the switchman turns the switch in the railway yard. Thus the doctrine of the synapse is largely responsible for the reawakening of the ghost theory of animal behavior.

Although it does not interest us directly, I can not forbear mentioning as a curiosity the fine reasoning of some psychologists telling us that the mere causal determination, selection, of one direction among many thinkable ones did not require an expenditure of energy and therefore could well be regarded as the work of the ghost. As if the direction of anything, say, a pole losing its balance on the tip of the nose of a circus clown, could be causally determined without the expenditure of energy.

It was among European psychologists chiefly that the physiological doctrine of the synapse reintroduced the ghost into the explanation of animal behavior. In America the ghost became popular through the great influence of one man, James, whose followers assign to one kind of mental states which does not seem to have any proper business, to the feelings, the job of stamping in and stamping out complete paths of nervous conduction. But they never state any definite law explaining how the proper feeling itself, with its stamping power turned in the proper *direction*, comes into existence at the proper time.

We now reach the crucial point of the issue which I intend to present. According to McDougall, those who reject, or do not favor, the ghost theory of animal behavior do so because they lack the courage to accept an incomplete world picture. But I charge that, on the contrary, those who adopt the ghost theory lack the courage to accept an incomplete world picture and to wait for future research in natural science to complete it. Too impatient to wait, they fill in the gap with a ghost, with unexperienced consciousness, with the concept of something which is unmeasurable, to which none of the methods of scientific research are applicable. If any one claims that my assertion is wrong, that the methods of scientific research are applicable to the ghost which is made to bridge the gap of causal connections in animal behavior, I challenge him to state a single instance. He will not assert that such work as the classical experiments of Ebbinghaus on memory serves as such an instance. McDougall himself admits expressly that they are a purely objective

study of verbal habits, that they are no measurements of consciousness.

How, then, did men, so much in earnest about psychological progress as McDougall, become so overwhelmed with despair that they had to appeal to the ghost theory for help, or rather for mere comfort? The answer is simple. They attempted in vain to conceive of a nervous process as being capable of forcing another nervous process from its own path into a new path. It is the demand for such a conception that I have tried to supply in my book on the "Fundamental Laws of Human Behavior."

The most important concept applied to animal behavior is that of *an experience*. We mean by an experience that an animal, in a new situation, acts in a new way in response to the same stimulus, that is, that the nervous process from a certain sensory point does not pass along the path of least resistance, but along a path of higher resistance. In order to understand that a nervous process proceeds over a path other than that of least resistance, we must speak of its being *forced*. But we need not speak of its being forced by a ghost. When a *person*, say, a school-boy, instead of moving along the path of least resistance, which leads to a circus parade, is forced away from this path towards his school, he is forced most probably by *another person*, his mother, or a truant officer; but certainly not by a ghost, a good or evil demon. When a *nervous process* is forced to stream over a path other than that of least resistance, it is forced most probably by *another nervous process*. If psychologists had been less slow in thinking this simple thought, they would have been less quick in introducing the ghost who is supposed, in the nervous system, to take a place equivalent to that of a switchman of a railway yard, or a lineman of a telephone company, or a stamper of a sheet metal factory, but who, in the nervous system, is simply a *deus ex machina*. I have shown in my book that it is possible to understand all the fundamental facts of animal life experience by simply conceiving of any nervous process as capable of forcing, under certain conditions, any other nervous process out of the path of least resistance into another definite path. The doctrine of the synapse is then entirely superfluous. To enter into the details of this conception and its application to the various forms of animal (including human) behavior, this is neither the time nor the place.

If, then, a purely objective science of animal behavior must be the ideal towards which to strive to-day as much as, and even more than, at any previous period of science, can we afford to omit all reference to subjective states in the instruction given to scientific, and especially medical, students? May be that the time will come when we can afford it, but my study of the most modern advances in



that branch of medical science which particularly concerns us, in psychiatry, furnishes me sufficient proof that that time has not arrived yet. I have in mind that successful movement of studying and treating hysteria and related disturbances which has become associated with the name of the Austrian psychiatrist, Freud. His analysis of the individual's life leads to a systematic reeducation of the organism along definite lines, which is beginning to replace the former therapeutic methods of strong, but haphazard suggestions, hypnotic or non-hypnotic; and this analysis is made almost exclusively in *subjective* terms. It is too early, then, to renounce under any and all conditions all subjective terms in psychology. We can not put them out of the world by putting, like the proverbial ostrich, our heads in the sand so that we do not see them.

But then, certainly, it is impossible to keep the purely objective description of animal, or let me now rather say "human," behavior and its subjective description in tight compartments; but a mixing up of them is equally unjustified. We need to establish definite relations between our subjective and our objective terms, so that, instead of mixing them up, we can translate the one into the other. Then only will it be possible to utilize the advances made at the present time in psychiatry for the advancement of an objective science of human behavior. We must try to establish *definite nervous correlates for all the specific mental states and mental functions* which are used in and seemingly can not be spared from our descriptions of human life in the mental and social sciences. I venture to predict that those terms of mental function, for which no nervous correlate can be found, are the very ones which are superfluous, can be spared from our descriptions of mental life in man and animals. When a few years ago I made an attempt at establishing some such nervous correlates, I found to my surprise that most psychologists did not seem to see the use of them. They failed to see the difference between such definite correlates and the vague generalities of our text-books stating that, whenever anything is to go on in our minds, something must go on in our brain; or that, whenever any brain function is fixed, it is fixed by the satisfaction which it gives to the mind. Such generalities may be true; but to me it makes no practical difference whether they are true or not, because they are no solutions of scientific problems, for reasons stated throughout the whole length of this paper.

In the establishment of definite correlates of specific mental functions and of specific nervous functions I see the present-day problem of the relation of mind and body.

MAX MEYER.

## DISCUSSION

## SOME ASPECTS OF PROFESSOR FITE'S INDIVIDUALISM

I FIND myself with considerable sympathy for what I interpret as Professor Fite's purpose in his recent book. Indeed I am not sure that what I have to say involves much more than a change of emphasis. I am ready at any rate to agree that the logic of a fully conscious individualism looks in the direction which he urges. The principle of democracy, as distinguished from what may loosely be called communism, is indeed just this, that each man shall, not surrender his aims to the general welfare, but adjust them to a full and free recognition of the similar aims of other men, on the faith that only thus can he fulfill his own life most abundantly.

But along with a communistic ideal of the state, such as Professor Fite seems to have chiefly in mind to criticize, motivated by altruistic feelings, and logically dependent, therefore, upon the somewhat remote hope that men can be induced voluntarily to surrender such advantages as they possess to their less successful neighbors, there is an alternative position which, though sharply opposed to the conception of democracy, adopts equally with it the presuppositions of individualism. It differs, however, in giving to certain individuals a preference, and in holding that their more important claims can only be met through the absence of a complete autonomy and satisfaction in a considerable number of their fellow men. Of course no one who is not entirely stupid can fail to see that the logic of his own private interest demands that he allow *some* other men to get their way, too. But plenty of people do believe, with much confidence, that they can and ought to stop short of a universal tolerance.

Now at this point I have not been able to make up my mind with certainty just what Professor Fite's attitude is. On the practical side I suppose he intends at least to say this: first, that people can never be largely benefited until they have an intelligent understanding of their own needs and purposes and are ready to assert these for themselves, instead of leaving them to the good will of others; and, secondly, that schemes of social reform, to be effective, must be framed primarily to appeal to interests, rather than to benevolence and charity, to supply their motive force. So far I am inclined very largely to agree, as a question of where the emphasis had better lie in the promoting of political and social measures. Talk about humanity and disinterested justice has indeed an important preparatory value in breaking up the inertia of the public mind in the face of new proposals, to which I doubt if Professor Fite is altogether fair. But after all if concrete changes are to be brought about and



are to continue to work well in practise, men have got to be shown that these are to their interest. The average citizen, for example, must be made to realize that his taxes are increased or his business opportunities lessened by public graft, before he can be held in line for municipal reform; and the disposition to substitute such definite economic considerations that come home to self-interest, for humanitarian exhortation, is one of the best guarantees of the probable success of any wave of reform. Back of this there may be, and indeed I have no doubt there must somewhere be, a temper of moral fervor. But the less we talk about this and accentuate it as the professed motive, and the more we apply ourselves to the rational business of working out the situation in a form to enlist a sufficient multitude of private interests, the more reforms are likely to lose their spasmodic character and become settled principles of action.

But now while this is good advice to the reformer and to those in whose special interest a change is sought, I do not feel so clear about the state of mind which it recommends to the powerful classes who are already in possession, or who by their superior intelligence have the immediate directing of the future. So far as bringing influence to bear upon them goes, I agree, because it seems to be the fact that we are foolish to trust much to exhortation. We ought rather to gird up our loins and convince them that they can not disregard us with safety to themselves; and in so far as they are intelligent they will doubtless in the end see the point and act accordingly. But what is the temper of mind that Professor Fite would ethically approve and justify on their own part? Does reason prescribe that they wait passively for the corresponding development of intelligence in other men, exploiting them meanwhile as without rights until they are able to enforce these rights? or does justice demand that they take such men into account from the start as potentially capable of autonomy, and so, as having rights to be respected? Professor Fite gives some ground for believing that the first is his meaning; if so, I have no wish to defend him. But his idealistic logic seems to me rather to look the other way. Much of this appears without point unless it intends to hold that a complete self-interest will find itself imperfectly fulfilled, except as others are equally self-conscious and autonomous; and if this is so, one is failing in duty to himself unless he does what he can to further the development of security for equal rights to all, even before these can be enforced upon him. The same claims would thus rest upon him as on the ordinary showing; only the *source* of these would be his own welfare, rather than something from the outside that calls for sacrifice and altruism. Subject to correction, I am inclined to suppose that this is really Professor Fite's meaning, and that apparent evidence to the contrary is due to the

fact that he has not sufficiently separated two different standpoints—the standpoint of the reformer, who asks what he can safely presuppose in other men as a working basis of reform, and the inner standpoint of the intelligent man himself in face of the question what rights he shall concede voluntarily to his weaker neighbor.

But here another query arises about Professor Fite's philosophy. He has, as I understand him, a twofold problem. Primarily, perhaps, he is trying to refute what he considers the sentimentalism of the humanitarian. But also he is attempting to justify rationally the claims of social conduct apart from such an altruistic motive. Now it is when the aristocratically-minded man is to be convinced of this that I feel a lack of conclusiveness on Professor Fite's argument. I agree that the most likely way to reach him is by showing him that he is playing the fool, is ignoring facts which he ought to face, and which are preventing the best attainment of his own desires. But I hesitate to believe that this demand is always capable of being met completely, or that it is sufficiently met by an appeal to the nature of consciousness as such. And the reason, on the side of theory, is this, that I find it difficult to separate intelligence from the particular nature of the desires which it may endeavor to serve. The inclusiveness with which a man is going to admit foreign ends within his own system will depend upon the character of the objects which he thinks worth while attaining; and this can not be assumed forthwith as of just one standard quality. What am I to say, for example, if I come across an ideal which apparently gets satisfaction through compelling as many other men as possible to do its bidding—which seems to aim at the very act of keeping others under, because this affords an enjoyable sense of superiority and power? The only thing that can be counted on with certainty is that a perfect intelligence will aim to take account of all the facts, but not that it will necessarily accept as among these facts the legitimacy of another person's ends. It is conceivable that as much intelligence may be shown in recognizing such a competing end and then finding ways to override it, as in accepting it and adjusting action to its requirements.

And to this there are only two answers that I see. It may be said that you are losing something, after all, from the content of the world when you exclude the contribution which another man might bring if he were permitted to follow his own bent. From the world, perhaps, but why of necessity from *my* world, unless I happen to be built so that I want it more than I want its exclusion? His economic contribution I may easily be indifferent to, even if it were clearer than it is that some of it would flow to me. There may be a chance that he may put some obstacles in my own path, but possibly I enjoy the excitement of combat and exploitation. If it is claimed, again,



that by admitting him into my circle I realize the finer spiritual joys of cooperative fellowship, this may very well be so in case I find myself caring for an enlargement of this sort, but not at all if I happen to have an aristocratic taste for power. It will not do to say that no man actually does prefer this last ideal, and that his nature will in reality get a fuller expression in the other way. I may hold this as a faith; but I can not demonstrate it while so many are convinced to the contrary. And in any case the ground for my faith will be, not the abstract character of consciousness, but the concrete nature of the being who is to make use of intelligence to further his ends, those ends being set by his inborn make-up and natural disposition, which apparently differs, within limits, in different people. If a man has seemingly other wants than mine, which look to empire rather than cooperation, I can not refute him by pointing out that intelligence—and he of course wishes to be intelligent—is never complete until it has thoroughly grasped the standpoint of every would-be competitor. He will answer that he intends to understand them; but as for sympathizing with them and accepting their claims, that is another matter. To do this may be precisely to defeat his own particular aim. To enter into their hopes with toleration and sympathy would require that he be another sort of being from what he is—that he be of a nature to suffer directly some diminution of his own sense of attainment through an outlying loss to another man. Assume a satisfaction in fellowship independent of the special character of the task to which cooperation is turned, or an intrinsic disinclination to view with indifference a loss to others over and above the indirect effects that this may have on my own enterprises, and you may indeed expect results. As a matter of fact I suspect that Professor Fite does assume this, and that to it his argument owes the generous quality that might have been quite lacking. But this looks suspiciously like bringing back again the notion of a disinterested side to human character on which the effective appeal of motives to social conduct depends, and the proof of this carries us beyond the abstract logic of self-consciousness.

Accordingly, while I agree that ordinarily the best way of proving to any one that he ought to regard the rights of others is by showing him that he is acting unintelligently otherwise, I should expect to be able to do this, not by a deductive argument from the nature of consciousness, but rather in an empirical way, by calling his attention to the actual nature of the world in which he lives, and the circumstances of the case. But then I should have to give up the hope of convincing him that the harmony was bound to be a complete one. I should be content if he were persuaded only that this was the *better* way, though not of necessity a way which involved no elements what-

ever of loss to him. I might fall back on the faith that apparent loss will after all prove real gain. But so long as knowledge confessedly is incomplete, this would have to be faith, and not philosophic insight. Even if I came up against an ultimate difference of ideal I should not despair of finding solid reasons for my own side. But in that case, at any rate, I should have to admit a solution which was of the nature of a compromise, which came about at the expense, to some degree, of a real preference, and was, therefore, a reconciliation only partially complete.

A. K. ROGERS.

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## SOCIETIES

### NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association held its final meeting for the current academic year on May 22, in conjunction with the Section of Psychology and Anthropology of the New York Academy of Sciences. An afternoon session was held at the Psychological Laboratory of Columbia University. After dinner at the Faculty Club the evening session was held at the American Museum of Natural History. The following abstracts are of the papers presented at the two sessions:

*Group Differences in the Interests of Children:* GERTRUDE MARY KUPER.

That interest plays a very important dynamic rôle in the educational field is only too evident from such treatises as Dr. Dewey's article, "Interest as Related to Will" and Dr. Montessori's "Pedagogia Scientifica." But interest is a general term and can not have an absolutely universal value for every individual or every subject of thought or desire. Individual interests are as important in the social world as are individual capacities. They should, therefore, be a fruitful field for scientific investigation. The experimental work done with advertisements has brought to light group differences in the preferences of men and women for various appeals. The investigation to be reported was of a like nature, except that it dealt with children.

The formal experiment consisted in asking an individual child to arrange nine pictures in the order in which he liked them best. The nine pictures were chosen to represent nine specific appeals: landscape,



children, animals, religion, pathos, sentiment, patriotism, heroism, and action. (They were Cosmos prints and therefore of uniform size and finish.) In all, there were three series of these pictures, each parallel so far as possible with the other two in their appeals. The children numbered over 200, 10 girls and 10 boys for each year's age from 6.5 to 16.5. They were almost entirely attendants of the public schools of New York City and came from quite varied sections of the city.

The results were tabulated according to age differences, broad social distinctions, and nationality. In the last-named case the number of subjects was so limited (10 girls and 10 boys to each of the following nationalities: Irish, French, German, and Italian, and only 9 girls and 8 boys to the Spanish) that the results are not held as significant.

The positive data showed a sex difference in the order of preference for these several appeals. The girls' order was: (1) Religion, (2) patriotism, (3) children, (4) pathos, (5) animals, (6) sentiment, (7) landscape, (8) the heroic, (9) action. The last two were decidedly lowest in the scale and the first three were quite clearly highest for all ages; but the picture representing these nine curves was one of bewildering intersections as the values changed from year to year. The boys' order was: (1) Religion, (2) patriotism, (3) action, (4) the heroic, (5) pathos, (6) animals, (7) sentiment, (8) landscape, (9) children. The boys' chart representing the curves for these appeals showed greater agreement from year to year. Religion and patriotism, the heroic and action, and landscape and children kept rather parallel courses all along the age scale, and no very decided tendencies appeared with progressive age differences. Girls seemed to lose interest somewhat in pictures of children and animals and to take greater interest in the heroic and action pictures. The latter change is explained by the fact that, as the girls increased in school knowledge, they read an historical background into these more or less warlike scenes.

A great sex difference was found in the variability measures, as calculated for the various ages, appeals, social classes, and nationalities. In every case but two, the girls exceeded the boys in their P.E.; and in these two exceptions the boys' P.E. was once greater than the girls' by only 5 per cent., and another time exactly equal to the girls' P.E. The amount of sex difference was, as a rule, anywhere between 12 per cent. and 57 per cent. This held true in every scale, whether according to age, appeals, social class, or nationality. The girls' average P.E. was 1.66; that for the boys was 1.36.

Both girls and boys were least variable about the subjects they

liked best, *i. e.*, religion and patriotism; but apart from these appeals there was no correlation of variability with relative likes or dislikes.

It is a noteworthy fact that in range of variability the boys far exceeded the girls. The limits for the boys' P.E. were .82 (patriotism) and 1.60 (landscape), giving a range of difference of 78 per cent.; the limits for the girls' were 1.47 (religion) and 1.95 (animals), showing a range of only 48 per cent. In this particular experiment this indicates that boys are very much more agreed about some likes than are girls, and yet quite as varied about others. In other experiments such a range of variability may point to greater individuality of the male sex among themselves while as a group they are relatively homogeneous.

Another sex difference noted was the number of positive dislikes expressed by each sex. The girls gave 161, or 6 per cent., dislikes as against the boys' 65, or 2.4 per cent. Boys seemed to entertain relative indifference toward the appeals at the bottom of the list. The things the girls disliked most were, (1) scenes of action suggesting death and (2) pictures showing angry attitudes. The reasons given by the boys for their dislikes were, (1) gloomy, indistinct scenes, (2) sentimental pictures, (3) costumes worn by men which were feminine in style or left the figure partly nude, and (4) pictures suggesting illness.

A certain age difference revealed itself in the remarks made by the children about the pictures. The seven and eight year olds showed limited powers of observation. Some detail, and, in landscape scenes, always the human detail, no matter how small, was made the focus of attention to the complete overlooking of the larger subject. Unfamiliar details when pointed out to them received as many different interpretations as there were children. As the children grew older their remarks were fuller; they made fewer mistakes in their interpretation of the pictures and they drew upon all their known sources for filling in their perceptions. At the ages between 11 and 13 the critical spirit made its first appearance among the girls. Only at fourteen did it occur in the boys' comments. At these ages the emotions prompted the remarks of both girls and boys. Emotional attitudes, actions, and even words were ascribed to the pictorial persons. At 15, the remarks became more laconic, but what was said was significant and definite as to the persons, place, and action of the picture. This age marked the first signs of hesitation in speaking of the pictures of sentiment. Up to the age of nine the remarks had been very naïve; after that the pictures were dismissed with the phrase, "they're lovers" or "a love picture"; often the characters were named Romeo and Juliet, Paul and Virginia, etc.

In all their comments the girls were far more personal than the



boys. The personal pronoun and references to their individual experiences were the usual preface to their statements. With the boys it was quite otherwise; they discussed the picture as an objective thing, independent of their conscious existence. Boys tended to locate scenes in definite historical time and specific geographical places.

The effect of uncertainty about a picture, crudely averaged, was a displacement of about five places toward the lower end of the scale.

*Practise in the Case of Children of School Age:* THOMAS J. KIRBY.

This experiment was conducted to get some information concerning (1) the value of the practise experiment as a method for school work and (2) the value of practise periods of different lengths.

339 fourth year children belonging to 10 different classes took part in the practise, which consisted of adding columns, each of 10 numbers, 0's and 1's not included, as rapidly as was consistent with accuracy, each child competing with his own past record. Seven different sheets of columns of equal difficulty were used. (Thorndike's Addition Sheets.)

In every case there was one hour of practise, but for different classes this hour was broken into 22½-, 15-, and 6-minute periods, an initial 15-minute period and a final 15-minute period being given to form the basis for determining the gain per cent.

The hour's practise for the 339 children taken as one group resulted in an average gain of 55 per cent.; median gain of 48 per cent. In a similar test with 19 university students, Professor Thorndike found an average gain of 29 per cent., median 33 per cent., from about 53 minutes of practise, and said: "The amount of improvement in this experiment may also add to our confidence that the method of the practise experiments wherein one works at one's limit and competes with one's past record may well be made a regular feature in many school drills. Even if the same length of time produced in children a percentile improvement, only half as great as here, the gain would still probably be far greater than the gain by any of the customary forms of drill."

For the classes which took the hour's practise in 22½-minute periods, there was an average gain of 61 per cent., median 49 per cent.; in 15-minute periods, average gain 55 per cent., median 43 per cent.; in 6-minute periods, average gain 54 per cent., median 44 per cent.

*The Age of Walking and Talking in Relation to General Intelligence:* CYRUS D. MEAD.

I. *Data*.—50 "normal" children (25 boys and 25 girls), averaging less than six years of age, of graduate students of Teachers College and Columbia College. Ages were thrown to the nearest month.

Walking means: "To take a step unassisted." Talking means: "To use a word intelligently, *i. e.*, to associate the idea with the object."

*Results.*—The median "normal" child begins to walk at 13.5 months, with a probable error of 1.06 months. The chances are 999 to 1 that the true median will not differ from the median obtained by more than .66 month. The extreme range is from 11 to 30 months. 90 per cent. of the cases fall between 11 and 17 months. The median "normal" child begins to talk at 15.7 months, with a probable error of 2.83 months. The chances are 999 to 1 that the true median will not differ from the median obtained by more than 1.96 months. The extreme range is from 9 to 25 months. 90 per cent. of the cases fall between 10 and 21 months, with 18 months as the mode.

II. *Data.*—145 "schoolable" children (boys and girls) of the Indiana School for Feeble-minded Youth, in reply to the question on the personal descriptive entrance blanks: "At what age did the child commence to walk?" and 92 in reply to the question: "At what age did the child commence to talk?"

*Results.*—The median feeble-minded child begins to walk at 21.8 months, with a probable error of 7.56 months. The chances are 999 to 1 that the true median will not differ from the median obtained by more than 3 months. The extreme range is from 12 to 72 months. 90 per cent. of the cases fall between 13 and 50 months.

The median feeble-minded child begins to talk at 34.2 months, with a probable error of 12.6 months. The chances are 999 to 1 that the true median will not differ from the median obtained by more than 6.5 months. The extreme range is from 12 to 156 months (only one case going above 108 months). 90 per cent. of the cases fall between 14 and 84 months.

### *Sex Differences in Incidental Memory:* G. C. MYERS.

A test was desired wherein the thing to be remembered should be merely incidental and where the focus of the subject's attention should be directed away from the facts to be called for after the exposure of the stimuli, but where these facts would have to enter, wholly or in part, into the experience of the subject. To this end a list of six simple words were used as stimuli. The subject was told that he would be given a spelling test and he was led to believe that it would be a real test in speed and accuracy of spelling.

A practise test with digits was given for three successive times before the real test began, to delude the subject as to the purpose of the experiment. A dozen or more digits were pronounced at random so rapidly that the subject could scarcely keep up in writing them. In the midst of this series of digits the experimenter, without



any warning, gave the signal for the subject to turn the page upon which he was writing, and continued to pronounce digits at the same speed. The subject was told that the words would be given in the same manner, but not quite so rapidly. The following words were then pronounced: angel, pickle, dirt, busy, onion, women. The last word was pronounced in such a manner that another word was expected by the subject, but the signal, "turn," was given instead, and the subject was told to write as many of these words as he could remember, to place them in the order in which they had been given, and to indicate by a line the place for each omitted word. The time each individual required to reproduce the words was recorded by a stop-watch.

After testing over 100 individuals the writer applied the test to groups of college, normal-school, and public-school subjects. Aside from immediate reproduction, records were secured after various intervals, ranging from  $\frac{1}{2}$  hour to 3 months. In all such cases a practise test of rapid folding of papers was added. After the words were pronounced the papers were promptly collected and the experimenter left the room. The subjects thought the work was ended, but at various times the experimenter reappeared and asked for the reproduction. The time for all group reproduction was limited to  $1\frac{1}{2}$  minutes.

The best results were secured immediately after presenting the stimuli. Practically the same efficiency was shown for the reproduction after 6 hours as for that after  $\frac{1}{2}$  hour. But there was a decided fall after 7 days and a still greater fall after 3 months.

No appreciable difference was shown in efficiency between the lower grades and the college students for immediate reproduction; but after various intervals there was a gradual decrease in efficiency with age.

Of the 1,515 subjects, 757 females and 758 males, only 29 of the former and 18 of the latter reproduced the six words in exact order.

In all grades the females were markedly superior to the males, both for the number of words remembered and for order. They had a higher central tendency and were more variable than the males in the 5th, 6th, 7th, and 8th grades, while for the other groups the males were more variable.

108 other subjects were tested with 10 letters and digits. Here the girls answered more, but the boys were better for order.

*The Effect of Distribution of Practise Upon Learning:* ELMER A. CULLER.

The purpose of this experiment was twofold: to determine the effect of differently distributed practise series upon learning given

material; and to make observations upon the learning process in general.

The material to be learnt was the path from the beginning to the end of the Hampton Court maze. The paper (8 by 6 inches) on which the maze was printed, was affixed to a board. Over it was placed a large circular piece of cardboard, easily movable, having in the center a small opening ( $\frac{5}{8}$  to  $1\frac{1}{16}$  inch) through which extended a pencil to mark the course of the subject's movement. At no time could the subject see more of the maze than the part visible through the opening. At the beginning of the experiment the subject was thus instructed: Pencil is now at the entrance to the maze; keep on moving until you reach the end. Never cross a line; always keep to an open path. Mazes are all the same and will be placed in the same position.

At each trial the time was recorded and number of errors was counted and recorded. To each subject were given 12 trials. Subjects were divided into 6 groups as follows: 12 trials at one time, 6 on 2 successive days, 4 on 3 days, 3 on 4 days, 2 on 6 days and 1 on 12 days. There were 5 men in each group except the last, in which were 3. With regard to time of day, subjects were divided into two groups: one group each day for the required number of days, after lunch (1-2 P.M.): the second group each day after dinner (7-8 P.M.). In comparing men of the two groups no account was taken of this slight difference, as it was considered practically negligible. Good light was uniformly provided. The interval between successive trials of a subject at the same sitting was 30-40 seconds.

Subjects were all graduate students, age from 22 to 28.

Three classes of errors appeared: Wrong choice between alternative courses, retracing when on right course, and (accidentally) crossing a line. The first kind are major errors (value 1) and the other two kinds minor (value  $\frac{1}{2}$ ). These are arbitrary values for computing results. The major errors were counted as follows: There are 6 (or 7, depending upon the course taken) places where choice must be made between alternative paths of which only one is right. Each time the subject moved from one of these places in a wrong path, *i. e.*, away from the goal, it was counted one error. Errors of retracing when on the right path were usually small and due to defective attention or eyesight—subject either thought he had accidentally passed an opening and moved back to see, or on coming to a turn failed to notice the opening and thought he had run into a blind alley.

The results are as follows:

- I. TABLE OF ABSOLUTE TIME AND ERROR VALUES ATTAINED IN EACH GROUP  
(The different groups are indicated thus: One—12, etc.; the word indicates



the number of trials each day, the figure the number of successive days. The two columns show the average of number of seconds consumed and number of errors made in the last three trials in each group; thus showing the relative standing of groups at end of practise period. The figures in parentheses show relative position.)

	Time, Per Cent.	Errors, Per Cent.
One—12 .....	50 (3)	4.8 (4)
Two—6 .....	61 (5)	5.2 (5)
Three—4 .....	59 (4)	3.2 (3)
Four—3 .....	39 (1)	.9 (1)
Six—2 .....	75 (6)	5.5 (6)
Twelve—1 .....	48 (2)	3.0 (2)

## II. TABLE OF PERCENTAGE GAINS

(In each case the percentage represents the ratio between the average of first three trials and last three trials in the same group. This table is intended to show improvement of each group irrespective of absolute values attained.)

	Time, Per Cent.	Errors, Per Cent.
One—12 .....	210.0 (4)	147.9 (5)
Two—6 .....	253.0 (3)	161.5 (4)
Three—4 .....	195.0 (6)	302.0 (1)
Four—3 .....	341.0 (2)	218.5 (3)
Six—2 .....	206.6 (5)	125.3 (6)
Twelve—1 .....	368.7 (1)	236.6 (2)

(It must be said that the results of Six—2 were vitiated by the professed indifference of one subject, because of which both time and errors for the last few trials in that group are abnormally high.)

The results seem to point to the following conclusions: In general, outside the Six—2 group, the One—12 and Two—6 groups made the lowest absolute records and also least improvement; this apparently indicates that the learning period was too prolonged, with insufficient practise at any one time. On the other hand, the Twelve—1 and Four—3 groups show in general the highest absolute records and greatest improvement. Here the practise was more thorough each time and not so prolonged. The curve of greatest regularity is the Four—3 curve. The three groups, then, in which practise periods were longer and confined to a few days show better results than the three in which practise periods are shorter and prolonged over 4—12 days. The application to learning any material would seem to be that better results are secured by a few more prolonged or persistent periods of study repeated perhaps for several days than shorter periods prolonged over a greater number of days.

Some observations were made on individual methods of learning which can not be included here.

*Experiment in the Catching of Pennies:* E. S. REYNOLDS, J. T. GYGER, L. L. WINSLOW.

The experiment had two aims: (1) To investigate the learning process. (2) To find what transfer, from the right hand to the left hand, if any, would be shown.

Three subjects took part in the experiment which follows. It was carried on in two series: (1) That in which the subjects caught the pennies, two at a toss, palm of the hand down. (2) That in which they caught three. The first series was of 7 days' duration; the second, 10 days'. The time for tossing was from 1. P.M. to 2 P.M. on Mondays and Wednesdays. Conditions were as nearly constant as possible, the same room being used throughout the experiment. In the case of the two-penny series, the subjects caught for 10 trials and then rested for 10. In the three-penny series two subjects caught at the same time, the third subject resting. In the first case, score was kept by the two unemployed subjects in turn; in the second case, by the one unemployed subject.

Certain conditions influencing accuracy were noted, among which are the following: Some parts of the room were more conducive to accurate catching than others, that nearest the window being the most favorable. The pennies could be caught with most accuracy if no objects were in front of the subject to distract his attention. The tossing, when carried on before a blank, light-colored wall, was most successful. An increase in confidence and in accuracy resulted when a window was opened to admit new air. An interruption, as that caused by another person entering the room, was followed by a corresponding fall in score. The subject, by counting to himself his successful tosses, was stimulated to a better score. The nervous feeling of haste as well as nervousness caused by outside matters of importance to the subjects (such as pressure of work) tended rather to increase than to diminish their scores.

Each subject discovered and followed his own methods of tossing. After finishing the two series, the subject who had followed the method of throwing his pennies high into the air was able to catch an additional penny (making four in all) with very little effort. The other subjects tried this continually and failed, their hands striking the floor before the fourth penny was reached. The quick shutting of the hand was an important factor. One subject was materially helped by thinking of the word "grab" previous to each trial. In some instances, the second penny would be caught and lost, the first and third being retained. Although occasionally a subject would catch all three successfully without knowing it, yet the tossing can not be said to have become automatic.

The progress in learning was unsteady. Yet in each case there



was a gradual advance, noticeable particularly in the beginning. A warming-up period was universally experienced by each subject at the beginning of each day's practise.

In the second series, a transfer test was tried with the left hand before and after the practise series. This showed a considerable increase in ability to catch with the left hand.

AMOUNT OF TRANSFER CATCHES

Subject	Before Test	After Test	Per Cent. Gain
1 .....	3	14	466 $\frac{2}{3}$
2 .....	11	32	290+
3 .....	1	29	2900
Total gain .....	15	75	500

*Painting and the Learning Process:* C. M. SAX.

Although art and science are widely separated, they may cooperate in art education. Prevailing methods are indirect, depending upon a never certain transfer of training. During the three years the average student spends at art school, his course is as follows: Casts and still life in charcoal; still life in color; anatomy and perspective as formal subjects; the figure in charcoal; some composition, and, finally, painting the head and figure in oils.

Results show little transfer; for example, compositions show little knowledge of anatomy or perspective. Charcoal and oils have few identical elements in substance or procedure; in fact, specific habits formed in mastering charcoal often act preclusively when the student attempts to paint. Students who can draw, but not paint; construct, but not compose, or are draughtsmen, but not colorists, and their opposites are in the overwhelming majority.

Experiments now under way on the learning process as applied to painting seem to show that (a) preparation in charcoal and still life is unnecessary in painting figures; (b) efficiency depends largely upon correct analysis; (c) muscular coordination plays a minor part; (d) a direct method and generalized idea of procedure are essential and (e) the control of attitude is most important.

*The Optimal Distribution of Time, and the Relation of Length of Material to Time Taken for Learning:* DARWIN OLIVER LYON.

This paper was divided into two parts, it being in reality a discussion of two distinct questions: (1) "The Distribution of Time in Relation to Economy in Learning and Retention"; and (2) "The Relation of Length of Material to Time Taken for Learning." Concerning the first of these, it was shown that in estimating *economy*, not only must we consider the *time spent*, but the degree of *retention* as well. It was shown that individuals differ greatly, and that

where one could learn a set of ten stanzas in less time by the continuous method (*i. e.*, doing the work in "one sitting"), another individual could lower his total time by dividing the time spent into several periods, *e. g.*, by spending 5 minutes per day. With but 3 exceptions retentiveness was decidedly better by the divided-time-method. This was notably the case with nonsense-syllables and poetry. The most general statement that can be made, taking all materials and methods of presentation into consideration, is that the most economical method is to distribute the readings over a rather lengthy period,—the intervals between the readings being in arithmetical proportion. For example, with one individual in memorizing a poem of 20 stanzas the highest retentiveness was obtained by distributing the readings as follows: 2 hours, 8 hours, 1 day, 2 days, 4 days, 8 days, 16 days, 32 days, etc. The practical bearing of the results obtained on education in general was then considered. The above individual found that the most economical method for keeping material once memorized from disappearing was to review the material whenever it started to "fade." Here also the intervals were found to be, roughly speaking, in arithmetical proportion. For similar reasons the student is advised to review his "lecture-notes" shortly after taking them, and if possible, to review them again the evening of the same day. Then the lapse of a week or two does not make nearly so much difference. When once he has forgotten so much that the various associations originally made have vanished, a considerable portion of the material is irretrievably lost.

2. *The Relation of the Length of Material to Time Taken for Learning.*—Tables were presented to show that the relation depended almost wholly upon the division of the time spent in learning, *i. e.*, the distribution of the time-intervals. In other words, the relation, or *ratio*, depends upon the method used in memorizing. Only three methods were considered: The "continuous" or "mass" method; the once-per-day method; and the once-per-week method. Up to a certain point, with some individuals, when digits were used as material, the time varied directly as the square of the number of digits, *when the continuous method was used*. By the once-per-day method, however, the time varied, roughly speaking, directly as the length of the material. It was shown that in order to get the best results the same subject should take all the various lengths of material used, and that it would be unfair to distribute the varying lengths among different subjects. As only one method can be tried at a time, an experiment of this nature must needs extend over a period of several years. In the case of *prose*, by the once-per-day method, 500 words were memorized in as few days as the 95-word passage. The time may therefore be said to vary directly as the



length of the passage. The same holds true for digits and nonsense syllables, but not to so great a degree; for the number of days needed for 200 nonsense-syllables was considerably greater than that needed for 20. By the "continuous" method, however, we observe that where the 100-word passage was memorized in 9 minutes, the 500-word passage took 52 minutes—nearly 6 times as much time being required, although the passage is only 5 times as long. This is much more strikingly shown when we examine the curve obtained for the digits. Here we see that although it took only 5 minutes to learn 24 digits, it took 2 hours and 34 minutes to learn 200—more than 31 times as long instead of 8. In short it is obvious that the once-per-day method is—to say nothing of giving a far superior retention—far more economical than the "continuous" method. This is especially so for material memorized by motor associations such as nonsense-syllables or digits.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Essentials of Mental Measurement.* WILLIAM BROWN. Cambridge: University Press. 1911. Pp. vi + 154.

The structure of Mr. Brown's book, as he himself points out, bears marks of its composite origin. The first three chapters of Part II., originally published in 1910 as a doctorate thesis, deal essentially with some experimental work with mental tests similar to the work of Winch and Burt, prefaced by a disquisition on the theory of correlation and a brief historical survey of the use made of the theory. To these chapters he has added a fourth sketching the possibilities of the use of the method of correlation by psychologists, and a Part I. treating of mental measurements in general. There are also four appendices, giving tables quoted from Fechner, Müller, and Urban, examples of the working out of single and multiple correlations, some regression curves in illustration of one of his earlier chapters, and a copious bibliography.

The result is an abstruse, slightly critical, mathematical treatise on the measurement of variables, rather than the expression of interest in things mental which might be investigated. With the exception of a concise statement of conclusions (pp. 126-27) the author leads one to forget any connection with psychologic functions, since the data supplying the basis for his mathematical elaboration might apparently have been drawn from any convenient source.

As it stands, Chapter I. of Part I. takes up Weber's law, Fechner's work with it, and three general interpretations of the law. Chapter II. sets out

to explain the three psychophysical methods. Clear in the beginning, the treatment becomes involved by the "slightly controversial tone" employed in the discussion of some other mathematicians' formulæ, and by the digressions necessary to set forth his own objections. For purposes of exposition these digressions might have been placed in footnotes rather than embodied in the text. Yet, condensed as they are, they assume considerable facility in statistical methods on the part of the reader, who, if insufficiently prepared, may refer to the more elementary treatments of Titchener, Pearson, Sheppard, Spearman, Urban, and others.

The Introduction to Part II. gives a concise "preliminary view of the method" of correlation, illustrated by examples and two figures. Chapter I. takes up the correlation coefficient, correlation ratio, probable errors, multiple correlation, six short-cut ways of determining correlation, spurious correlation, and the significance of the correlation coefficient. Much of this is beyond any but the "professed psychologist" prepared to undertake quantitative research, especially as the already sufficiently difficult accounts of Yule and others are here very much condensed. Emphasis is laid on the importance of not disregarding skew curves, and a relatively large space is devoted to a discussion of Pearson's criticisms of Spearman's ranking method. Chapter II. is a sketch of the use made of correlation by Wissler, Thorndike, Burt, Pearson, Elderton, and others, but is mainly taken up with Spearman's researches and the author's own refutation of some of Spearman's conclusions and formulæ. Particular notice is taken of the theory of both Spearman and Burt that there may exist a common, fundamental, mental function or group of functions as demonstrated by the hierarchical order of correlation coefficients. Chapter III. embodies the results of Mr. Brown's experiments with three groups of school-children and three of adults, about 260 subjects in all, in ten or eleven mental tests. These were undertaken in order to determine the extent of correlation between simple mental abilities and the relationship between them and general intellectual ability as measured by teachers' judgments, school marks, etc. It is interesting and unusual to find included the Müller-Lyer illusion, and a little disappointing not to find further work with some of Burt's original tests. Full tables are inserted giving results in each test, and correlation coefficients for the various groups separately. Some of the more general of the fifteen conclusions which close the chapter are:—that the Ebbinghaus *Combination* test is a good measure of intellectual ability, that "mechanical memory correlates fairly closely with intelligence," that "correlation between speed and accuracy of mental performance is slightly non-linear," and that "in homogeneous groups of subjects there is no positive evidence of the existence of one central factor." A brief final chapter works out a proof to emphasize the possibility of measuring correlation between complex variables, and for more than two variables.

The author expresses a hope that this book will prove of use to the educationist who has had "a real training in psychology." Such real training would have to be largely along the lines of quantitative research before this little volume could be appreciated. It will be valued by Eng-



lishmen, under the influence of Karl Pearson, and contributors to *Biometrika* rather more, perhaps, than by students and investigators in this country.

M. T. WHITLEY.

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*Outline of a Course in the Philosophy of Education.* JOHN ANGUS MACVANNEL. New York: The Macmillan Company. 1912. Pp. 207.

This book is a revision and extension of a syllabus used in Teachers College, Columbia University. The leading topics are philosophy, persistent problems and presuppositions of education; the place of education, the individual and society, institutional factors, course of individual development, democracy and education, the school as a social institution, and the intellectual organization of the school. Many subdivisions of these main topics are given and at the close of each chapter is placed a considerable list of references to both ancient and modern books.

The author believes the most "fruitful study of education consists in treating it as an integral part of a wider philosophy of society," and he attempts to show the relation of the educational process to the facts of organic and social evolution. Education as a social institution is defined as "the method by which a particular generation endeavors to incorporate the vital elements of its civilization or culture into the life of the generation that succeeds it." Development is not merely "an unfolding from within, but also an enfolding from without the individual," and environment can not be considered separately. Heredity and environment "are in reality phases of the actual concrete working self." "The fundamental ethical need of men is self-realization." "Self-realization is a process in which the self (a) comes to be more completely defined, *i. e.*, individualized; (b) but defined through the membership in the larger unity." The functions of education "are (1) the liberation of the individual from himself and (2) the discovery of the individual to himself."

The book has many such aptly worded definitions and statements of truths in accordance with the best educational thought of the times, and those who are interested in correlating their ideas of philosophy and education after the manner of philosophers will appreciate the work highly. There is nothing, however, in the book to give direct aid to those who are studying educational problems in a scientific or practical way.

The ideals of every one who attempts to deal with educational problems are determined by his philosophy of life, whether he has ever formulated it or not. A conscious study of philosophy may be very valuable to an educator by leading him to form broader and truer ideals of life, but after such ideals have been formed the important thing is to interpret and apply them in a concrete form. Men may agree on a theoretical statement and differ radically as to subjects and methods to be used in applying the theory or even as to the results desired. For example, the religious ascetic of older times might, in learning to ignore the body and its desires, have claimed that he was performing the educational function of "the liberation of the individual from himself" and the New England puritan might

be justified in his frequent self-examination by the principle that the function of education is "the discovery of the individual to himself." Dr. MacVannel would undoubtedly protest emphatically against such interpretation of his statements and perhaps against a dozen other interpretations that might honestly be made by others.

It is not his purpose to make applications in this brief outline he has written and hence he is not to be criticized for not doing what he did not attempt. The question in the mind of the writer, however, remains, "Is there any real value in *any book* on the philosophy of education that concerns itself with the philosophy of the theories without indicating how it is purposed to interpret and apply these theories to concrete problems?" The statement that development is not merely "an unfolding from within but also an enfolding from without the individual" is very good, but it might be offered to the agriculturist with just as much propriety and significance as to the educator. Farmers and scientific students of agriculture consciously or unconsciously assume this truth and are trying to interpret and apply it in choosing seed, soil, fertilizers, etc. They would be disgusted with any one who asked them to study such fundamental assumptions under the name of "philosophy of agriculture" if there were no attempt made to point out the kind of problems to which such general definitions and general truths can be applied. Why should not the educator be equally pragmatic?

Dr. MacVannel has done the work he undertook to do well, but the writer wishes to raise the question among educators and philosophers as to whether it is possible for any philosopher as such to construct a philosophy of education that will be of any more real value to educators than would be a philosophy of farming to the farmer or a philosophy of manufacturing to the mill man or the philosophy of mining to the miner. Psychology is largely freed from philosophy. Why should not education as a science and art also be independent of it?

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FITCHBURG, MASS.

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## JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. March, 1912. *Evolution* (pp. 137-151): FREDERICK J. E. WOODBRIDGE. - "Evolution is history; that antecedents and causes should consequently be historically construed; that evolution is pluralistic, . . . that man writes the history only of his own world; that, however, since he discovers his world to be a history, he may have a science of history or evolution which is universal; and this science indicates that evolution is progressive." *The Relation of Consciousness and Object in Sense-Perception* (pp. 152-173): EVANDER BRADLEY MCGILVARY. - A defense of an epistemological monism and realism with the view that consciousness is a unique and not further analyzable relation of "togetherness." The difficulties such as qualitative differences, how one



object may be in different consciousnesses, hallucinations, the time problem, color-blindness, and the "consciousness of consciousness," are examined. *Moral Experience* (pp. 174-188): LOUIS W. FLACCUS.—The term "moral experience" as used in current interpretations of ethics is, it is claimed, too vague. Its meaning as employed by biological, psychological, and autoteleological (including the Kantian type and current personal idealism and pragmatism) methods is unsatisfactory. The advantages are on the side of personal idealism and pragmatism. *Proceedings of the American Philosophical Association; the Eleventh Annual Meeting, Harvard University, December 27-29, 1911* (pp. 189-217).—Includes reports of committees with summaries of papers and discussions. *Reviews of Books* (pp. 218-238). B. Croce, *Lebendiges und Totes in Hegel's Philosophie*: FRANK TILLY. Th. Ruyssen, *Schopenhauer*: RADOSLAV A. TSANOFF. G. F. Barbour, *A Philosophical Study of Christian Ethics*: T. B. KILPATRICK. A. W. Moore, *Pragmatism and its Critics*: THEODORE DE LAGUNA. *Notices of New Books. Summaries of Articles. Notes.*

REVUE DE MÉTAPHYSIQUE ET DE MORALE. March, 1912. *La philosophie des sciences historiques dans l'Allemagne contemporaine* (pp. 129-168): CH. ANDLER.—The work of the historian leads naturally to philosophical results. In particular, the conflict between descriptive and sociological history has placed the problem of the *a priori* which presides over the formation of historical concepts. *Translation solaire ou déformation du système sidéral?* (pp. 169-192): F. MARGUET.—The author suggests an astronomy based on the deformation of a tetrahedron formed by joining, say, the earth and three other planets, or the sun and two planets. *Devoir et durée* (pp. 193-206): J. WILBOIS.—The sketch of an ethics which shall mark out a science of morals, establish the moral imperative, and make the imperatives precise, or, at need, revise them. *La logique déductive* (Suite et fin) (pp. 207-231): A. PADOA.—The conclusion of the author's exposition of the symbolic language of Peano and the mathematical logicians. *Études critiques. Victor Brochard, philosophe et historien de la philosophie*: A. RIVAUD. *Questions pratiques. Le Syndicalisme jaune*: F. CHALLAYE. *Supplément.*

Bowne, Borden Parker. Kant and Spencer. Boston: The Houghton Mifflin Company. 1912. Pp. xii + 440. \$3.00.

Grünbaum, A. S. The Essentials of Morbid Pathology. London: Longmans and Company. Pp. xvi + 219. 7s. 6d.

Lones, T. E. Aristotle's Researches in Natural Science. London: West, Newman, and Company. Pp. viii + 274. 6s.

Rand, Benjamin. The Classical Psychologists. Selections illustrating psychology from Anaxagoras to Wundt. Boston: The Houghton Mifflin Company. 1912. Pp. xxi + 734. \$3.50.

## NOTES AND NEWS

HERR RUGE, privat docent at Heidelberg, is publishing, with the collaboration of Herr Windelband, a collection of systematic studies devoted to various branches of philosophy. The enterprise is unique in that the studies will consist of articles written by representatives of the principal contemporary schools of philosophy. The first volume, now in press, will contain: Wilhelm Windelband, "Die Prinzipien der Logik"; Josiah Royce, "Principles of Logic"; Louis Couturat, "Les Principes de la Logique"; Benedetto Croce, "Il Compito della Logica"; N. Losskij, "Die Umgestaltung des Bewusstseinsbegriffes in der modernen Erkenntnistheorie und ihre Bedeutung für die Logik." The general title of the work is "Encyclopädie der philosophischen Wissenschaft."

THE Aristotelian Society held meetings on June 3 and 5. At the former a symposium on "Purpose and Mechanism" was carried on by Professor W. R. Sorley, Mr. A. D. Lindsay, and Dr. Bernard Bosanquet. At the second meeting, Mr. W. E. Tanner read a paper on "Significance and Validity in Logic."

THE death is announced of Dr. H. de Struve, who from 1871 to 1903 was professor of philosophy at the University of Warsaw. A correspondent of *The Times* states that Dr. de Struve may be claimed as the founder of the present-day school of philosophy in Poland.—*Nature*.

AT a meeting of the British Academy, on June 5, the Rev. Hastings Rashdall read a paper on "The Metaphysics of Mr. Bradley." The paper dealt with Mr. Bradley as an idealist and with various problems as to the essence of reality.

A NEW critical edition of the works of Schopenhauer in fourteen volumes is to be undertaken by Paul Deussen. Two volumes, devoted to "Die Welt als Wille und Vorstellung," have already appeared.

THE inauguration of Dr. Anna McKeag, formerly head of the department of education in Wellesley College, as president of Wilson College, occurred on May 1.

PROFESSOR D'ARCY W. THOMPSON, professor of natural history at Dundee, has been appointed Herbert Spencer lecturer at Oxford for 1912.—*Science*.

AT the anniversary meeting of the Linnean Society, on May 24, Professor E. B. Poulton was elected president for the ensuing year.

DR. JOHN E. CLARK, instructor in history and philosophy in Boston University, has been appointed professor of education in that institution.

A NEW magazine, *Comment enseigner*, has just been launched in France. It is to be issued every three months.

DR. DANIEL STARCH has been promoted to the rank of assistant professor at the University of Wisconsin.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

### OPPOSITION AND THE SYLLOGISM

IN our text-books of logic the topics of opposition and the syllogism are treated as if they were only externally connected with each other. Opposition is regarded as a relation between two propositions, and the syllogistic implication is regarded as a relation between three propositions, so that the two relations are made radically distinct. I wish to show that the syllogistic relation is very closely allied to that of opposition. In what I shall have to say on the subject there is nothing new. But it is my hope that a new mode of presentation may set in clearer light some truths which have often been misunderstood.

As a preliminary, let us consider the following table of the propositions having as subjects S or non-S and as predicates P or non-P. In the table equivalent propositions are grouped together; and they may be derived from each other in the given order, by obversion or simple conversion.

I	II	III	IV
<i>All S is P</i>	<i>All S is non-P</i>	<i>All non-S is non-P</i>	<i>All non-S is P</i>
<i>No S is non-P</i>	<i>No S is P</i>	<i>No non-S is P</i>	<i>No non-S is non-P</i>
<i>No non-P is S</i>	<i>No P is S</i>	<i>No P is non-S</i>	<i>No non-P is non-S</i>
<i>All non-P is non-S</i>	<i>All P is non-S</i>	<i>All P is S</i>	<i>All non-P is S</i>
V	VI	VII	VIII
<i>Some S is-not P</i>	<i>Some S is-not non-P</i>	<i>Some non-S is-not non-P</i>	<i>Some non-S is-not P</i>
<i>Some S is non-P</i>	<i>Some S is P</i>	<i>Some non-S is P</i>	<i>Some non-S is non-P</i>
<i>Some non-P is S</i>	<i>Some P is S</i>	<i>Some P is non-S</i>	<i>Some non-P is non-S</i>
<i>Some non-P is-not non-S</i>	<i>Some P is-not non-S</i>	<i>Some P is-not S</i>	<i>Some non-P is-not S</i>

On account of the equivalence of the propositions in each group, it is possible and convenient to consider the relation of opposition as subsisting between the several groups, instead of merely between the separate propositions. In stating the relations between the groups, I shall use the expression "the terms of the group," meaning thereby the terms which appear in its *symmetrical* propositions, *i. e.*, the universal negative and particular affirmative forms. We may then say:

1. *A universal and a particular group having the same terms are contradictory.* Both can not be true and both can not be false. Thus I. and V., II. and VI., III. and VII., and IV. and VIII. are contradictory.

2. *Two universal groups having one term in common are contrary;* that is to say, *if their common term is not null, both can not be true.* Thus I. and III. are contrary to II. and IV. More precisely,

If any S exists, I. and II. can not both be true.

If any non-P exists, I. and IV. can not both be true

If any P exists, II. and III. can not both be true.

If any non-S exists, III. and IV. can not both be true.

3. *A particular group having one term in common with a universal group is subaltern to it;* that is to say, *if the common term is not null the universal implies the particular.* Thus VI. and VIII. are subaltern to I. and III., and V. and VII. are subaltern to II. and IV. More precisely,

If any S exists, I. implies VI., and II. implies V.

If any non-P exists, I. implies VIII., and IV. implies V.

If any P exists, II. implies VII., and III. implies VI.

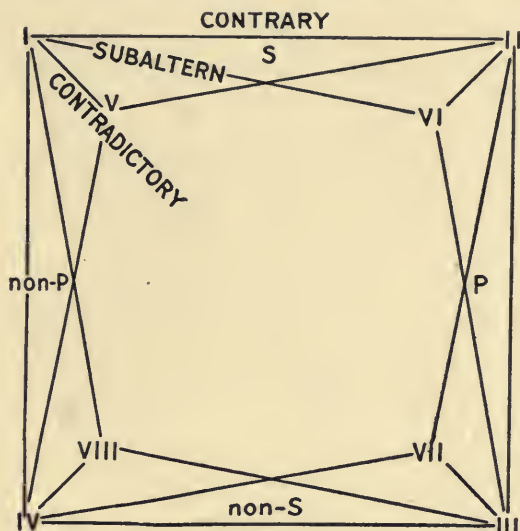
If any non-S exists, III. implies VIII., and IV. implies VII.

All these relations are indicated in the accompanying "square of opposition." Contradictories are placed together at the corners. Universals at adjacent corners are contrary. A particular is subaltern to a universal at an adjacent corner. The term upon which contrariety and subalternation depend is written between. If one wishes to recall from the diagram the meaning of the numbers, I., II., etc., one needs only in each case to put together the two nearest terms into a universal negative or particular affirmative proposition. Thus for I. we may write, No non-P is S; for VII., Some non-S is P. The equivalent forms may then be gotten by obversion and simple conversion.

Several comments suggest themselves. If we analyze any particular proposition of the form, Some S is P, we find that it implies that there exists an individual that belongs both to the class S and to the class P. There may be more than one such individual, but there must be at least one. But the universal proposition, All S is P, may be true, even though the subject-class (or indeed both classes) be null. In fact, as Professor Royce has recently had occasion to remind us, in that case the proposition must be true. "All trespassers will be prosecuted," is not refuted, but verified, if no trespass is committed. To be sure, the context often shows that the existence of the subject is to be taken for granted. But in numberless instances we assert universal propositions when we are *ignorant*



whether the subject-class is null or not—less often, of course, when we know it to be null. Hence, for the sake of clearness, when the existence of the subject is to be assumed this must be set down in the formulæ; for example: Some S exists, and all S is P.<sup>1</sup>



Sometimes this distinction between universal and particular propositions has been beclouded by the contention that universal propositions too have a certain existential import—that all propositions are characterizations of reality, or of some universe of discourse. This contention is just. But one truth does not rub out another; and it still remains true that universal propositions need not imply that their subject-classes are not null.

For this reason, in all the forms of inference where a particular proposition is derived from one or more universal propositions (aside from one exception, to be noted), an additional existential proposition is covertly taken for granted. That this is the case with the derivation of the subaltern, we have just noted; and we shall hereafter have occasion to note that the like is true of those modes of the syllogism (*Darapti*, *Felapton*, *Fesapo*, and *Bramantip*, as well as the so-called “subalternan modes”), in which two universal premises give a particular conclusion.<sup>3</sup> The same principle applies to conver-

<sup>1</sup> On the other hand, in the rare instances when we assert propositions of the form, Some S is P, conditionally, without meaning to imply the existence of any S, this too must be made explicit in the formula: If any S exists, some S is P.

<sup>2</sup> I believe that this observation was first made by the American logician, Miss Ladd, whom we know now by a different name.

<sup>3</sup> In the first three the middle term, in *Bramantip* the major term, and in the subaltern modes the minor term, must not be null. It has sometimes been

sion *per accidens* and (consequently) to inversion. The former is valid only when the original subject is not null, the latter only when the negative of the original predicate is not null. Thus the proposition, All S is P (in group I.), implies that some P is S (group VI.) only on condition that some S exists; and the same premise implies that some non-S is non-P (group VIII.) only on condition that some non-P exists. In the case of inversion the fallacy that results from the neglect of this condition is sometimes startling. All wise men are mortal, may be held to imply that some unwise men are immortal; but this is correct only on the condition that some immortal men exist.<sup>4</sup> I should think that it would be possible for the authors of our elementary text-books to give in simple English a correct account of this whole matter.

All the exceptions (so far as I am aware) to the rule that universal premises can not give particular conclusions rest upon the fact that from the proposition, No S exists, we can infer: Some non-S exists. Here, indeed, we assume that U (the universe of discourse) is not null; and the inference can be put in the form: No U is S, and some U exists, therefore some U is non-S. But as a matter of fact the assumption that the universe of discourse is not null is everywhere made; and every attempt to deny it or even question it involves the bringing in of a new and larger universe, as if we should say: No V is U; and in that case we have a new non-S as well. Hence this assumption can not be laid particularly to the charge of the inference in question. What we can say is that in this case the omnipresent assumption becomes explicit.<sup>5</sup>

Let the class which consists of the individuals common to the classes S, P, M, N, etc. (the so-called "logical product"), be denoted by the expression S.P.M.N., etc. In what follows I shall assume that in such an expression the order of the factors is immaterial, and also that the factors may be grouped together *ad libitum*. Thus it

held that in all syllogisms the existence of the middle term is assumed. That this, however, is an error appears very clearly in the case of *Camestres*: All angels have hands and wings, no vertebrates have hands and wings, therefore no vertebrates are angels. This is valid, even though we be quite ignorant whether any angels or other creatures with hands and wings exist, or not.

<sup>4</sup> Keynes, whom a recent writer in this JOURNAL severely criticizes for his treatment of inversion, gives explicit mention to this condition ("Formal Logic," p. 159). On the other hand, Aikins ("The Principles of Logic," p. 138) goes too far in saying: "The process of alternate obversion and conversion . . . is valid only if the existence of all the objects named is presupposed." For obversion and simple conversion are unconditionally valid.

<sup>5</sup> It is thus that from the premises, All S is P, No S is P, and All P is S we can infer: Some non-S is non-P. The first two, being contraries, imply that no S exists; wherefore some non-S exists. But this is the condition that the third premise implies the conclusion as its subaltern.



will be assumed that S.P.M.N is the same class as P.N.M.S, or (P.M).(N.S), or (N.S.M.).P.

It is then to be observed that any universal proposition can be put into the form: No S exists; and that any particular proposition can be put into the form: Some S exists. For example the propositions of group I. above may be expressed: No S. non-P exists: and those of group VII. may be expressed: Some non-S.P. exists. And the relations of contrariety and subalternation may be expressed:

If no S.P exists, and no S.non-P exists, then no S exists.

If no S.P exists, and some S exists, then some S.non-P exists.

On the other hand, any proposition in the positive or negative existence-form can be translated into the subject-predicate form. Thus, No S.P.Q exists, may be rendered as No S is P.Q, or as No S.P is Q, or as No S.Q is P. Similarly: Some S.P.Q exists, may be rendered as: Some S is P.Q, etc. The single-factored propositions: No S exists, and Some S exists, may be put in the form: No U is S, and Some U is S (where U signifies the universe of discourse).

There are two principles of immediate inference, which are in constant use, but which our text-books seldom recognize. These are: (1) Any factor may be added to a distributed term of a proposition; and (2) any factor may be dropped from an undistributed term. Thus, if all S is P, it follows that all S.M is P; and if some S is P.Q, it follows that some S is P. As applied to propositions in the negative and positive existential form, the principles read: (1) Any factor may be added to a universal proposition; and (2) any factor may be dropped from a particular proposition. If no S.P exists, then no S.P.Q exists; and if some S.P.Q exists, some S.P exists.

It is by means of these principles that we shall be able to show the connection between the syllogism and opposition.

1. Consider the premises:

No P.M exists.

No S.non-M exists.

Let us add the factor S to the first and the factor P to the second. (Permit me to emphasize, in passing, the fact that these operations upon the two premises are mutually independent; that is to say, each can be performed without assuming the truth of the other premise.)

No (S.P).M exists.

No (S.P).non-M exists.

But these two propositions are contraries; and hence since both are true, their common term must be null. That is to say:

No S.P exists.

We have thus "reduced" the syllogism in *Cesare* to the principle of contrary opposition. Of course, the same process might be carried through with propositions in the subject-predicate form, and it can be applied to any of the moods in which a universal conclusion is obtained. Take, for example, the premises of *Barbara*:

All M is P.

All S is M.

Obvert and convert simply the major premise:

No non-P is M.

Introduce non-P into the subject of the minor premise, and S into the subject of the transformed major premise:

All S.non-P is M.

No S.non-P is M.

Since these are contraries we have:

No S.non-P exists.

Or, in subject-predicate form:

All S is P.

Nevertheless it is convenient to use the existence-forms, because their symmetry enables us to dispense with the consideration of figure.<sup>6</sup>

2. Consider the premises:

No P.M exists.

Some S.M exists.

Adding the factor S to the first, we obtain:

No (S.M).P exists.

From this and the second premise we obtain the subaltern:

Some (S.M).non-P exists.

And now, dropping the factor M, we have:

<sup>6</sup> It is in this way that Mrs. C. L. Franklin proves her half-humorous thesis, that the conclusion of the syllogism in *Barbara* omits precisely *one half* of what is contained in the premises. We are asked to note that from the proposition: No P.M exists, we can derive the *two* propositions: No S.P.M exists and No non-S.P.M exists; and furthermore, that since these propositions are contraries, the two together imply the proposition: No P.M exists. Thus: No P.M exists, is exactly *equivalent* to those two propositions taken together. Similarly, the proposition: No S.non-M exists, is equivalent to the two propositions: No S.P.non-M exists and No S.non-P.non-M exists. Thus the two syllogistic premises: No P.M exists and No S.non-M exists, are equivalent to the *four* propositions: (1) No S.P.M exists; (2) no non-S.P.M exists; (3) no S.P.non-M exists; and (4) no S.non-P.non-M exists. But (1) and (3) are together equivalent to the conclusion: No S.P exists; while no account is taken, in the conclusion, of the two other propositions, (2) and (4).



Some S.non-P exists.

3. Consider the premises:

No P.M exists.

No S.M exists.

Let us suppose that in addition to these premises we may assume:

Some M exists.

From this last and the second premise, we obtain the subaltern:

Some non-S.M exists.

This, with the first premise, gives us (by the method shown above):

Some non-S.non-P exists.

4. Consider once more the premises:

No P.M exists.

No S.non-M exists.

Suppose that we are entitled to assume:

Some P exists.

This last, with the first premise, gives us the subaltern:

Some P.non-M exists.

This, with the second premise, gives us (by the preceding method):

Some P.non-S exists.

We have now derived the following four syllogistic formulæ:

1. If no P.M exists, and no S.non-M exists, then no S.P exists.
2. If no P.M exists, and some S.M exists, then some S.non-P exists.
3. If no P.M exists, and no S.M exists, then some non-S.non-P exists, on the condition that some M exists.
4. If no P.M exists, and no S.non-M exists, then some P.non-S exists, on the condition that some P exists.

Of these formulæ, (1) is equivalent to *Barbara*, *Celarent*, *Cesare*, *Camestres*, and *Camenes*; (2) is equivalent to *Darii*, *Ferio*, *Festino*, *Baroko*, *Disamis*, *Datisi*, *Bokardo*, *Ferison*, *Dimaris* and *Fresison*;<sup>7</sup> (3) is equivalent to *Darapti*, *Felapton*, and *Fesapo*; and (4) is equivalent to *Bramantip* and the so-called "subaltern" modes.

This completes the "reduction" of the moods of the syllogism. It is apparent, however, that formulæ (3) and (4) are not independent and do not describe simple syllogisms. All syllogisms may be obtained from (1) and (2). We may now, furthermore, observe that if we replace the conclusions of these two formulæ by their contradictories and interchange the symbols M and P in (2), they reduce to the common form:

Some S.P exists, no S.non-M exists, and no P.M exists, are not all true.

<sup>7</sup> For example, the old enemy *Bokardo* becomes: Some M.non-P exists, no M.non-S exists, therefore some non-P.S exists.

This, then (if we leave out of account the possible occurrence of singular terms), is *the general principle of the categorical syllogism*.

Now, if we refer to the formulæ for the contrary and the subaltern (on p. 397), we at once perceive that these too can be reduced to a common form by replacing the conclusions by their contradictories:

Some S exists, no S.non-P exists, and no S.P exists, are not all true.

But *this is simply the principle of the syllogism* in the special case where S and P are identical (the symbol P being put here instead of M). From this point of view, therefore, we see that the inference of the falsity of the contrary and the truth of the subaltern constitute a simple variety of syllogism, although we deduced the principle of the syllogism by a particular application of the principle of opposition. This sort of "generalization" is, of course, not uncommon in the deductive sciences.<sup>8</sup>

The principle of the categorical syllogism may be compared with a similar principle of the hypothetical syllogism: It is false that the joint assertion of p and q is true, the joint assertion of p and not-r false, and the joint assertion of q and r false. If we observe, that to say that the joint assertion of two propositions is false, is equivalent to saying that each implies the falsity of the other, we may interpret this principle as declaring: If p implies r and r implies not-q, then p implies not-q. It may also be read as affirming that if q implies r, and p and q are both true, then p and r are both true.

In the case where p and q are the same proposition—a case which is thus analogous to the principle of the contrary and the subaltern—we have: It is false that p is true, the joint assertion of p and not-r, false, and the joint assertion of p and r, false. This yields the principle of the *reductio ad absurdum*: If p implies both r and not-r it is false. And it also yields the principle of the *modus ponens* (from which the *modus tollens* is easily derived): If p implies r, and p is true, then r is also true.

If we use letters to denote ambiguously either classes or propositions, the two general principles (of the categorical and the hypothetical syllogism) may be expressed in a single symbolic formula:

$$- [(S.P). - (S. - M). - (P.M)].$$

And in the same way the principle of the contrary and the subaltern, and the principle of the *reductio ad absurdum*, and the *modus ponens*, may be expressed in the one formula:

$$- [S. - (S. - P). - (S.P)].$$

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<sup>8</sup> For example, in elementary geometry we first find the sum of the interior angles of a triangle; and then by the application of this result we find the formula for the sum of the interior angles of any polygon.



THE MECHANISM OF SOCIAL CONSCIOUSNESS<sup>1</sup>

THE organization of consciousness may be regarded from the standpoint of its objects and the relation of these objects to conduct. I have in mind to present somewhat schematically the relation of social objects or selves to the form of social conduct, and to introduce this by a statement of the relation of the physical object to the conduct within which it appears.

A physical object or percept is a construct in which the sensuous stimulation is merged with imagery which comes from past experience. This imagery on the cognitive side is that which the immediate sensuous quality stands for, and in so far satisfies the mind. The reason for this satisfaction is found in the fact that this imagery arises from past experience of the result of an act which this stimulus has set going. Thus the wall as a visual stimulus tends to set free the impulse to move toward it and push against it. The perception of the wall as distant and hard and rough is related to the visual experience as response to stimulation. A peculiar stimulus value stands for a certain response value. A percept is a collapsed act in which the result of the act to which the stimulus incites is represented by imagery of the experience of past acts of a like nature.

In so far as our physical conduct involves movements toward or away from distant objects and their being handled when we come into contact with them, we perceive all things in terms of distance sensation—color, sound, odor—which stand for hard or soft, big or little, objects of varying forms, which actual contact will reveal.

Our conduct in movement and manipulation, with its stimulations and responses, gives the framework within which objects of perception arise—and this conduct is in so far responsible for the organization of our physical world. Percepts—physical objects—are compounds of the experience of immediate stimulation and the imagery of the response to which this stimulation will lead. The object can be properly stated in terms of conduct.

I have referred to percepts as objects which arise in physical experience because it is a certain phase of conduct which, with its appropriate stimuli and responses, gives rise to such products, *i. e.*, movement under the influence of distant stimuli leading to contact experiences of manipulation.

Given a different type of conduct with distinguishable stimulations and responses, and different objects would arise—such a different field is that of social conduct. By social conduct I refer simply to that which is mediated by the stimulations of other ani-

<sup>1</sup>Read at the meeting of the Western Philosophical Association held in Chicago, April 5 and 6.

mals belonging to the same group of living forms, which lead to responses which again affect these other forms—thus fighting, reproduction, parental care, much of animal play, hunting, etc., are the results of primitive instincts or impulses which are set going by the stimulation of one form by another, and these stimulations again lead to responses which affect other forms.

It is of course true that a man is a physical object to the perception of another man, and as really as is a tree or a stone. But a man is more than a physical object, and it is this more which constitutes him a social object or self, and it is this self which is related to that peculiar conduct which may be termed social conduct.

Most social stimulation is found in the beginnings or early stages of social acts which serve as stimuli to other forms whom these acts would affect. This is the field of gestures, which reveal the motor attitude of a form in its relation to others; an attitude which psychologists have conceived of as predominantly emotional, though it is emotional only in so far as an ongoing act is inhibited. That certain of these early indications of an incipient act have persisted, while the rest of the act has been largely suppressed or has lost its original value, *e. g.*, the baring of the teeth or the lifting of the nostrils, is true, and the explanation can most readily be found in the social value which such indications have acquired. It is an error, however, to overlook the relation which these truncated acts have assumed toward other forms of reactions which complete them as really as the original acts, or to forget that they occupy but a small part of the whole field of gesture by means of which we are apprised of the reactions of others toward ourselves. The expressions of the face and attitudes of body have the same functional value for us that the beginnings of hostility have for two dogs, who are maneuvering for an opening to attack.

This field of gesture does not simply relate the individual to other individuals as physical objects, but puts him *en rapport* with their actions, which are as yet only indicated, and arouses instinctive reactions appropriate to these social activities. The social response of one individual, furthermore, introduces a further complication. The attitude assumed in response to the attitude of another becomes a stimulus to him to change his attitude, thus leading to that conversation of attitudes which is so vividly illustrated in the early stages of a dog fight. We see the same process in courting and mating, and in the fondling of young forms by the mother, and finally in much of the play of young animals.

It has been recognized for some time that speech belongs in its beginnings, at least, to this same field of gesture, so-called vocal gesture. Originally indicating the preparation for violent action, which



arises from a sudden change of breathing and circulation rhythms, the articulate sounds have come to elaborate and immensely complicate this conversation of attitudes by which social forms so adjust themselves to each other's anticipated action that they may act appropriately with reference to each other.

Articulate sounds have still another most important result. While one feels but imperfectly the value of his own facial expression or bodily attitude for another, his ear reveals to him his own vocal gesture in the same form that it assumes to his neighbor. One shakes his fist primarily only at another, while he talks to himself as really as he talks to his *vis-à-vis*. The genetic import of this has long been recognized. The young child talks to himself, *i. e.*, uses the elements of articulate speech in response to the sounds he hears himself make, more continuously and persistently than he does in response to the sounds he hears from those about him, and displays greater interest in the sounds he himself makes than in those of others. We know also that this fascination of one's own vocal gestures continues even after the child has learned to talk with others, and that the child will converse for hours with himself, even constructing imaginary companions, who function in the child's growing self-consciousness as the processes of inner speech—of thought and imagination—function in the consciousness of the adult.

To return to the formula given above for the formation of an object in consciousness, we may define the social object in terms of social conduct as we defined the physical object in terms of our reactions to physical objects. The object was found to consist of the sensuous experience of the stimulation to an act plus the imagery from past experience of the final result of the act. The social object will then be the gestures, *i. e.*, the early indications of an ongoing social act in another plus the imagery of our own response to that stimulation. To the young child the frowns and smiles of those about him, the attitude of body, the outstretched arms, are at first simply stimulations that call out instinctive responses of his own appropriate to these gestures. He cries or laughs, he moves toward his mother, or stretches out his arms. When these gestures in others bring back the images of his own responses and their results, the child has the material out of which he builds up the social objects that form the most important part of his environment. We are familiar with this phase of a baby's development, being confident that he recognizes the different members of the group about him. He acts then with confidence toward them since their gestures have come to have meaning for him. His own response to their stimulations and its consequences are there to interpret the facial expressions and attitudes of body and tones of voice. The awakening social intelligence

of the child is evidenced not so much through his ready responses to the gestures of others, for these have been in evidence much earlier. It is the inner assurance of his own readiness to adjust himself to the attitudes of others that looks out of his eyes and appears in his own bodily attitudes.

If we assume that an object arises in consciousness through the merging of the imagery of experience of the response with that of the sensuous experience of the stimulation, it is evident that the child must merge the imagery of his past responses into the sensuous stimulation of what comes to him through distance senses. His contact and kinesthetic experiences must be lodged in the sensuous experiences that call them out if they are to achieve objective character in his consciousness.

It will be some time before he can successfully unite the different parts of his own body, such as his hands and feet, which he sees and feels, into a single object. Such a step must be later than the formation of the physical objects of his environment. The form of the object is given in the experience of things, which are not his physical self. When he has synthesized his various bodily parts with the organic sensations and affective experiences, it will be upon the model of objects about him. The mere presence of experiences of pleasure and pain, together with organic sensations, will not form an object unless this material can fall into the scheme of an object—that of sensuous stimulation plus the imagery of the response.

In the organization of the baby's physical experience the appearance of his body as a unitary thing, as an object, will be relatively late, and must follow upon the structure of the objects of his environment. This is as true of the object that appears in social conduct, the self. The form of the social object must be found first of all in the experience of other selves. The earliest achievement of social consciousness will be the merging of the imagery of the baby's first responses and their results with the stimulations of the gestures of others. The child will not succeed in forming an object of himself—of putting the so-called subjective material of consciousness within such a self—until he has recognized about him social objects who have arisen in his experience through this process of filling out stimulations with past experiences of response. And this is indeed our uniform experience with children. The child's early social percepts are of others. After these arise incomplete and partial selves—or "me's"—which are quite analogous to the child's percepts of his hands and feet, which precede his perception of himself as a whole. The mere presence of affective experience, of imagery, of organic sensations, does not carry with it consciousness of a self to which these experiences belong. Nor does the unitary character of the response



which tends to synthesize our objects of perception convey that same unitary character to the inner experience until the child is able to experience himself as he experiences other selves.

It is highly probable that lower animals never reach any such objective reference of what we term subjective experiences to selves, and the question presents itself—what is there in human social conduct that give rise to a “me,” a self which is an object? Why does the human animal transfer the form of a social object from his environment to an inner experience?

The answer to the question is already indicated in the statement of vocal gesture. Certainly the fact that the human animal can stimulate himself as he stimulates others and can respond to his stimulations as he responds to the stimulations of others, places in his conduct the form of a social object out of which may arise a “me” to which can be referred so-called subjective experiences.

Of course the mere capacity to talk to oneself is not the whole of self-consciousness, otherwise the talking birds would have souls or at least selves. What is lacking to the parrot are the social objects which can exist for the human baby. Part of the mechanism for transferring the social objects into an inner experience the parrot possesses, but he has nothing to import into such an inner world. Furthermore, the vocal gesture is not the only form which can serve for the building up of a “me,” as is abundantly evident from the building-up gestures of the deaf mutes. Any gesture by which the individual can himself be affected as others are affected, and which therefore tends to call out in him a response as it would call it out in another, will serve as a mechanism for the construction of a self. That, however, a consciousness of a self as an object would ever have arisen in man if he had not had the mechanism of talking to himself, I think there is every reason to doubt.

If this statement is correct the objective self of human consciousness is the merging of one's responses with the social stimulation by which he affects himself. The “me” is a man's reply to his own talk. Such a me is not then an early formation, which is then projected and ejected into the bodies of other people to give them the breadth of human life. It is rather an importation from the field of social objects into an amorphous, unorganized field of what we call inner experience. Through the organization of this object, the self, this material is itself organized and brought under the control of the individual in the form of so-called self-consciousness.

It is a commonplace of psychology that it is only the “me”—the empirical self—that can be brought into the focus of attention—that can be perceived. The “I” lies beyond the range of immediate experience. In terms of social conduct this is tantamount to saying

that we can perceive our responses only as they appear as images from past experience, merging with the sensuous stimulation. We can not present the response while we are responding. We can not use our responses to others as the materials for construction of the self—this imagery goes to make up other selves. We must socially stimulate ourselves to place at our own disposal the material out of which our own selves as well as those of others must be made.

The "I" therefore never can exist as an object in consciousness, but the very conversational character of our inner experience, the very process of replying to one's own talk, implies an "I" behind the scenes who answers to the gestures, the symbols, that arise in consciousness. The "I" is the transcendental self of Kant, the soul that James conceived behind the scene holding on to the skirts of an idea to give it an added increment of emphasis.

The self-conscious, actual self in social intercourse is the objective "me" or "me's" with the process of response continually going on and implying a fictitious "I" always out of sight of himself.

Inner consciousness is socially organized by the importation of the social organization of the outer world.

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## DISCUSSION

### RELIGION AND THE DISCOVERY OF TRUTH<sup>1</sup>

PROFESSOR STRATTON'S book is almost altogether concerned with the exhibition of the range of the conflict of motives, of feelings, and of ideas in religious life. In a final brief chapter, however, he argues in favor of the proposition that "religion is justified in taking part in the discovery of truth." I wish to make the following comments upon his defense of that thesis.

There are, we are told, four varieties of truth; and religion is concerned with all four of them. The worshiper, when his faith is at its best, does not only want to "believe usefully and in all consistency and with a just sense of relative values"; he wants also to believe that the ideal world exists not merely in someone's idea, but also independently of the thinker. Let the reader bear in mind that this fourth kind of truth is the one discussed by Professor Stratton and the only one with which I shall be concerned in these pages. It is often called objective truth, but he prefers the term *factual truth*.

<sup>1</sup> A *propos* of Professor Stratton's book, "The Psychology of the Religious Life." London: George Allen and Company. 1911.



I shall first summarize briefly our author's argument. We are reminded that although the scientist looks upon the universality of causal relations as rigorous and demonstrable at every point, yet "observation has found such causes only within narrow limits; and even these are discovered only by assuming in every observation the truth of the very principle which the observation seems to verify. Deep within us is the desire for causal explanation; and largely because we are ill at ease until this desire is gratified, we come at last to believe unhesitatingly in that kind of universe which alone makes explanation possible." Why should not religion enjoy the same privilege? The need of sympathy and of full companionship has as good a right to bring into existence its own great belief that the world is morally harmonious, as the need of explanation has the right to build an objective world held to be permeated throughout by causal relations. "There is something that tells us to connect and surround the fragments of experience in such wise that the whole will answer to the moral impulse. Shut within our little cell of self, we can not see that the whole *is* moral, more than we can see that it is beautiful or reasonable or that it furnishes a causal explanation of all we experience. . . . If we will not believe, there is no recourse; no one can demonstrate to us that morality runs through the universe any more than that causation runs through all. If accepted, however, the moral principles leads to a more spacious world, as does the causal principle."

So far my quotations from Professor Stratton's argument seem a straight-out defense of the right to believe whatever we feel the need of believing. But this does not represent fairly the author's position. He accepts the moral principle as only one "among several great guides to what is real." And he admits that under the leadings of that principle "there is room and demand for the utmost critical care." "The acceptance of the moral principle does not of itself reveal what, in all definiteness, that moral world is, but demands of us observation and critical cunning before we decide what is the concrete system of fact that meets this high demand for perfect comradeship."

There is nothing in these statements with which I would disagree. Nevertheless, for reasons which I shall now try to make clear, I find myself out of sympathy with Professor Stratton's attitude. The heart and the conscience have certainly a rôle to play in the search after truth. But man has not waited for the permission of the philosopher to accept the guidance of his moral needs in determining reality. Religious souls have usually done more; they have behaved as if the moral needs were not merely one of the guides to knowledge, but its only instrument. It is because of this wantonness of piety that the

dominant religious beliefs of the present, instead of harmonizing with and completing those of science, are altogether alien or antagonistic to them. The Ritsehlian school of theology, for instance, in order to save "faith," claims in behalf of theology a complete divorce of science and metaphysics. The present conflict between science and religion is due chiefly, it appears to me, to a refusal on the part of the upholders of religious tradition to acknowledge the rights of intelligence.

Under these circumstances, why should the psychologist, writing on religion, be at pains to defend the right of religion rather than endeavor to indicate adequately the nature of the function of the moral promptings in the determination of factual truth? Professor Stratton would, it seems to me, have rendered a more needed service had he developed his bare statement regarding "the observation and critical cunning" that should be exercised when the moral principle is allowed a share in the guidance of intelligence. What mental activities are involved in the manifestation of that critical cunning? I shall try to answer this question by setting down the factors taking part in a discovery of objective truth, whether of the material or of the spiritual order, and indicating their respective functions.

1. At the root of the search for truth there is always, as instigator, a prompting, a need, a desire; for instance, a desire for orderly sequence, for beauty, for justice, for love, for power. Just as our need of order in the physical universe normally and rightfully leads us to *desire* the existence of fixed causal laws and a detailed knowledge of them, so the needs of the heart and of the conscience normally and rightfully prompt us to *desire* objects that may gratify them and a detailed knowledge of how the satisfaction may be best secured. Human needs, whatsoever they are, provide thus the *motive* for the search after factual truth and determine its direction.

2. The recognition of the gratification of the need, when it comes, is of course independent of the manner in which it has been secured; the recognition does not go beyond the states of consciousness themselves.

3. There remains the determination of the cause of the gratification. Is, for instance, the alleged object a real perception or only an hallucination; or is the exalted conviction of the man who thinks he has been in communion with God due to the action of an objectively real being? The impulses, the needs, the desires, have no legitimate part in determining the answer to either of these questions, beyond keeping one interested in the search. The needs may, however, thwart the inquiry by making impossible the free operation of the mind. The only way in which any advance can be made toward the discovery of factual truth, whether in matters physical or spirit-



ual, is by untrammelled intellectual criticism: by observation, comparison, discrimination, association, inference.

We reach thus the conclusion that the relation of human needs—whether the need of causal explanation, of logical consistency, of moral harmony, or of any other kind—to the discovery of the trans-subjective reality through which they may be gratified is expressible in the following propositions. All human needs have the same function in the discovery of factual truth: *they constitute merely demands and incentives*. It is the intellect which passes upon the validity of each proposition affirming, in the interest of any need, objective existence. The determination “of the concrete system of facts” qualified to meet the demands of the heart and of conscience belongs thus also to science.

Can those who would reject these propositions say why and wherein the rights of the intellect should be different, when the question is one of the satisfaction of the body, from when it is one of the satisfaction of the heart? In the first case, there is, for instance, a craving. The object desired may take a definite form—let it be some particular food or medicine. The desired food or drug taken, the body is satisfied. In the other case, the heart yearns for friendship or love; the object of the craving may here also assume a definite form; it may be a man, a woman, or a god. Presently the heart has found its satisfaction. The need as felt, and the gratification as experienced, are incontrovertible, absolute facts. It would be as absurd for science to challenge them as to challenge bare sensation or simple feeling. But it is otherwise when it is affirmed that one particular substance is the cause of the relief to the body or that the objective existence of a particular transhuman order of Being is necessarily implied in the moral comfort. Science is here, and in both instances equally, in its rightful province.

And what can be the intention of those who, when comparing the validity of religious and scientific propositions, remind us that science proceeds upon assumptions that can not be fully verified; that “scientific labor is always a sifting and a rearranging and supplementing of what the senses offer”? What of that? Do they imply that an equal freedom is refused to religion? That would be a preposterous implication. Would that religion were as careful in establishing its factual truths as is science! As a matter of fact, whenever it has been possible to put to an experimental test the scientific belief that causal relations hold throughout the physical universe, the belief has been verified. The only proper use that may be made of the fact quoted above is as a warning to religion that although it, as well as science, possesses the right to make hypotheses, it can not claim for them equal certainty with those of science until, when examined with all possible critical cunning, these religious hypotheses have been

found to fit the facts for the explanation of which they were devised. Does, for instance, the hypothesis of a righteous and benevolent personal God in direct communication with man and in control of the physical world fit the facts as the known physical phenomena fit the hypotheses of science? The only possible answer to this query is negative. The effort of William James to show scientific cause for the acceptance of the fundamental proposition of the historical religions (action of superhuman being or beings in human affairs) has only made more evident the insufficiency of that foundation.

An attempt is made at times to reinforce the argument under criticism by drawing an analogy from the common belief in the existence of other minds than our own. A rigid scientific method, we are told, would lead the investigator to the belief that his was the only mind in the universe. "Our friends that now are would then be for us mere bodies governed by curious laws of reflex or other physiological action." "Yet every sane mind rejects such a view. And why? Because the social, the moral instincts, are outraged by it . . . ours must be a world wherein there is mutual recognition, mutual regard. An ineradicable sense of the value of others requires that they too shall be real." "The enlargement of the universe according to the ways of religion is in the main but a further yielding to this rightful impulse." What a misleading analogy! Human beings are objects of sense to me: I touch, see, hear, them. They behave exactly as I do and respond obviously to my presence. These beings meet every scientific test of my belief that they think and feel as I do. But the hypothesis of religion, of an unseen being or beings acting upon man—whatever its worth—is far from meeting equally well the same test of objective reality. On the contrary, the more carefully the sequences of events are observed, the less convincing becomes the demonstration. So that there is no parity between the validity of the belief in the existence of sentient human beings and that in superhuman persons.

It is sometimes affirmed that science is threatening the very existence of religion. As a matter of fact, that which science is destroying is not religion, but particular religious beliefs, as, for instance, that in a Father who stands to man in the direct personal relation implied in Christian worship. The truth is that it is the heart which makes a stubborn war upon science, for it contests the right of the understanding to pass judgment upon propositions affirming trans-subjective existence.

Under these circumstances it would seem that the task of the philosopher in religion is to initiate an honest search for means of gratification sufficient to the heart and acceptable to the intellect,



rather than to attempt a defense of religion in its disregard of the rightful function of the intellect.

If venerable beliefs give way, let it be recalled that one and the same need may be variously relieved. The diet a man thinks the only diet upon which he can live may not even be the best diet for him. So it is, no doubt, of those means for the gratification of the moral nature discovered by humanity in this the first part of its religious history.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*A System of Psychology.* KNIGHT DUNLAP. New York: Charles Scribner's Sons. 1912. Pp. xiv + 368.

Dunlap's "System of Psychology" is a text-book to be used by the semi-advanced student as supplementary reading. The book treats practically the same topics as most of the similar texts with the exception of the last three chapters on the subconscious, the ego, and the occult. Great care is given to the definition of the terms used and we desire to call attention to a well-worked-out terminology which seems to be capable of consistent use.

There is no doubt that the book is written in an easy style. The influence of William James is very noticeable and it seems that the author has been inspired not only with the ideas of the "Principles of Psychology," which he calls the most important of all books in point of theory, but also with its style, for we noticed several mannerisms peculiar to the diction of William James. Dunlap believes that the data of psychology must be described in terms of theories which are more or less philosophical, and that an attempt to divorce the data from the theories would result in an uncritical acceptance of fragments of theories.

The philosophical view-point is emphasized to such an extent that the discussion of experimental results is almost entirely neglected. This feature of the book is, perhaps, less noticeable in the chapters dealing with sensation, but it is very pronounced in the discussion of the more complex mental processes. The text contains frequent references to every-day experiences, among which the well-known "inkwell which stands on the desk before me" plays an important part, but experimental evidence is rarely spoken of, and recent investigation is generally disregarded. The reader will be surprised to find in a text-book on modern psychology something on the transcendental unity of apperception and a short chapter on "Platonic Ideas and Matter." It is characteristic of the book that it gives three references on Platonic Ideas, while only two are given on association and one on concept and judgment.

The author does not undertake, of course, to offer first-hand information in an elementary text-book, and very likely it would be unjust to expect the possession of such information in all the fields of psychology

from a comparatively young man. The unfortunate part is that his sources of information are not always the most recent nor his selection of authorities fortunate. The following case is fairly characteristic. Chapter V. defines the threshold in terms of the method of just perceptible differences and leads to a discussion of Weber's law in Chapter VI. Dunlap defines the discussions, controversies, and investigations consequent on Fechner's formulation of this law as the subject of psychophysics, and says that "fortunately for the student, the whole matter is chiefly of historical importance." W. James, "Principles of Psychology," Vol. I., Chap. XIII., pp. 533-549, is given as reference.

We insist, first, that the logical reference would have been to E. B. Titchener's "Experimental Psychology," as the standard book on this topic. William James is not an authority to be quoted on anything related to psychophysics, as is seen best from the very pages referred to by Dunlap. The only way in which this versatile writer could express his appreciation of the work of Fechner was by quoting a few lines from a satirical poem. The mischief done by this attitude of William James has been pointed out repeatedly, and the admirers of the late literary genius should make it a point not to refer to this passage at all, for it shows that William James never understood the significance of psychophysics.

So much for the authority by which Dunlap supports his statement. Now let us consider the truth of the assertion that psychophysics is chiefly of historical importance and that its subject is the discussion of Weber's law. The most superficial acquaintance with any of the more recent publications on this topic could have shown that the field of psychophysics is much wider and almost coincides with the realm of experimental psychology. This, in fact, is the meaning in which W. Wirth uses this term in his latest publication. That psychophysics has not historical importance only is seen best by the number of publications on this topic issued in the course of a year. The general review in the *Psychological Bulletin*, for which the present writer happens to be responsible, contains fifteen articles and books on psychophysics published in America, England, France, and Germany during the last year, with a total of about a thousand printed pages. It is obviously unfair to assign to a group of problems historical importance chiefly, when this group can muster such wide-spread interest all over the world.

The shortcomings of Dunlap's "System of Psychology" had not been pointed out to such length, were they not characteristic of a certain class of books. Every year brings its crop of elementary text-books of psychology, and there are few which do not contain misstatements as glaring and as unjust as those of the present book. They seem to be unavoidable, since there is no question as to the ability and the good-will of the authors. Their aim is to produce a well-written text-book which can be read and enjoyed even by the ordinary reader. Since the imparting of information is less emphasized, such a book could be written by almost any one who writes an easy style; and we observe that most of these books are written by young men. A moment's consideration will show that writing an elementary text-book is so far from being an easy task at which a new hand



might try itself, that it takes a master of his profession really to succeed at it. Direct personal experience with a problem alone enables one to form an independent view or to decide on the authority to follow. This lack of personal experience renders the text-books written by young men so unsatisfactory, because they follow authorities which they do not choose intelligently.

The existence of so many text-books must be blamed in part on the scientific public, for the popular demand seems to be for the well-written, readable book. Reviews frequently insist on the fluent style in which a book is written and the perfect ease with which it can be read even by the uninformed. It may be well to arouse the interest of the general public, but let us not forget to cater to the needs of the advanced student. We have too many primers and not enough handbooks. It would seem the logical course for an ambitious writer to begin with a general treatise and to let it be followed by an elementary text-book. The handbook or general treatise is the place in which to expound personal opinions and to advance new theories based on a large number of facts, but the elementary text-book should be given to the presentation of facts exclusively. It should contain nothing but facts on which the followers of all schools can agree. It is an absurd enterprise to print original views in an elementary text-book, which is intended for pupils not in the possession of the information necessary to appreciate them. Printing an ordinary elementary text-book must not be considered an act of scientific merit, because rearranging the material and rephrasing the sentences hardly requires much more thought than copying. Let us make up our minds that printing text-books does not improve a man's scientific standing and let us insist on correct and definite information as the first requirement. A fluent pen and the belief in the truth of some doctrines—no matter what they may be—do not qualify a man as a writer of a text-book on psychology.

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*The Conflict of Naturalism and Humanism.* WILLYSTINE GOODSSELL.  
Teachers College, Columbia University Contributions to Education,  
No. 33. New York City. 1910.

In the "Introduction" to this study Miss Goodsell presents three controlling "world-views"—naturalism, humanism, and supernaturalism, which may, she thinks, be traced through "changes and variations in the life of thought," and treats the emergence in Greek philosophy of the first two. The four succeeding chapters consider the reemergence in the renaissance of naturalism and humanism, "their more clear definition in the seventeenth and eighteenth centuries," "the humanism of the German enlightenment," and "the conflict of naturalism and humanism in the nineteenth century." The chapter following concerns itself with "humanism and naturalism in education," and attempts to trace the influence of this conflict on "educational theory and practise in different periods." The last chapter of the monograph proposes to point out "a reconciliation of the views of naturalist and humanist upon the basis of

the theory of pragmatism; and to suggest the implications of such a synthesis for the philosophy and art of education" (p. 17).

The point of departure for the discussion is the two "dominating attitudes" of humanism and naturalism as they are described in definition. Naturalism is defined (p. 2) as "the attempt to explain human life, as well as all phenomena that penetrate man's experience, by reference to natural forces, operating throughout the universe to produce unvarying sequences of events." The term "humanism" is used throughout the greater part of the discussion "to signify that world-attitude which tends to interpret the universe in terms borrowed from the consciousness of man, and to identify the goal toward which all things are supposed to move, with the spiritual advance of humanity." In the educational discussion "humanism" is used to indicate "that type of classical education which flourished . . . from the age of the Italian Renaissance until well-nigh the middle of the nineteenth century" (p. 129). The relationship between the two usages of the term is dismissed with general statements regarding the inclusive content of the renaissance movement and a quotation from Guarino which connects the "humanities" with the concerns of man.

The presupposition, as stated (p. 4), is that the three "world-attitudes" denominate a three-fold division everywhere exhibiting itself in the life of thought, and to-day still unhealed. The assumption is that naturalism and humanism are to be seen in conflict in each period. It is held that there is unfailing opposition between them up to the present time, but within what whole the opposition exists we do not learn.

The attempt made is not to find and describe the particular, specific "conflict" of ideas or interests peculiar to a period, and to discover the humanistic and naturalistic characters respectively of these ideas in conflict, but rather to exhibit humanism and naturalism existing at the different periods. The concern of the discussion is treatment of these world-attitudes, not discovery of them. Further: the discussion does not follow these attitudes through the ages to learn the variant factors entering into each of these in the successive eras and controversies. It is not a history of ideas and interests as these change and develop through the centuries, but rather an arrangement in chronologic sequence of conceptions derived from a post-analysis of learning in these centuries. The world and its multiple interests in every period are seemingly comprised in "the conflict of naturalism and humanism." The resulting account suffers from meagerness, therefore.

The plan and method impose a limitation on the initial instrumental conceptions themselves. Naturalism and humanism as defined suffer no important change or development when treated in the different periods. Sheer naturalism and sheer humanism do not receive unqualified favor, but the features and restrictions of each are set forth in terms of contrast with the features and restrictions of the other (p. 34). It is not until the chapter dealing with "Humanism and Naturalism in Education" that there appears, in connection with the "opposition" between the sciences and the humanities, the recognition that "this unfortunate



antithesis has its roots in a philosophy of nature and of man which is strongly dualistic in character" (p. 161). And, later (p. 173), in connection with this same discussion occurs the earliest mention of man's desire "to select and appreciate the worthier and more enduring values of human life," and his desire "to subjugate his environment, to penetrate its hidden secrets that he may make it minister to the wants of human life," as the origin of these "branches of recorded experience"; and the earliest recognition in this discussion that "these are not antagonistic, for each sends its roots deep into the common soil of social experience." This mention and this recognition appear in the chapter dealing with the "Pragmatic Solution of the Problems"—a solution that has not seemingly before this point affected the historic account of the conflict of naturalism and humanism.

The plan and method impose a limitation also upon the nature of the discussion of these attitudes. With the interest in treating, at each period, the conflict of humanism and naturalism goes the programme of treating individually and specifically the men and events of each period. So that the material of the discussion is of two kinds: generalized descriptions of naturalism and humanism at the conclusion of each period under consideration and particular accounts of thinkers and of the specific movements within that period. The latter, although evidencing information and interest, do not always demonstrate their force and availability for the discussion of the conflict of naturalism and humanism. So that the former in their rôle of summaries of these accounts are often a surprise mentally to the reader, not always prepared for this conclusion of what he has been reading. Moreover, from the showing of the particular accounts one gets the idea at one time that the difficulty in that era was rather *confusion* than "conflict" between a humanistic and a naturalistic view-point (p. 94); at another time that the contention existing was, in fact, opposition between the methods of sense-observation and reasoned analysis for acquisition of essential knowledge; or, again (p. 150), opposition and interest, do not always demonstrate their force and availability between the claims of the *re-al* and the classic as these conceptions figured in educational thought. The ideas and characteristics of men and movements are set forth, and critical comments appended, but the accounts and criticism are in general, and do not proceed from a single, definite point of view. The discussion, consisting of accepted or acceptable comment and exhibition of the topics treated, fails to take hold of one's mind as one reads. The study wants single and clear purpose, and the conviction which springs from an integral conception of experience, assuring unity of interest and independence of approach and of activity.

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*The Philosophy of Schiller.* EMIL CARL WILM, Ph. D. Boston: John W. Luce and Company. 1912. Pp. xi + 183.

This clear and stimulating book is indeed an important contribution to the history of philosophy. Any one acquainted with the development

of German thought since Kant can scarcely deny the poet Schiller a significant place in it. It is true Schiller was lacking in a strictly philosophic method and system, but his influence upon the men of his generation was great. The author of this little volume has rendered a real service to English and American students, who have neither the time nor the inclination for original *Quellenuntersuchungen*, in bringing together in a unified and comprehensive fashion Schiller's philosophic views scattered throughout his letters, essays, and poems.

The author had no easy task. Those acquainted with Schiller's philosophic prose will heartily agree with this characterization: "Rhetorical and poetic, even in his scientific writings, we miss the clear-cut definitions and sharp distinctions so indispensable to clear thought and presentation; and the vacillation of his terminology, the indefiniteness of his concepts, and the boldness of his antitheses are the source of endless trouble to the student of his philosophical writings" (p. 13). The greatest difficulty is encountered in the content rather than in the form of Schiller's writings. It can be shown that several incompatible doctrines were advocated by him. It is of course impossible to remove this difficulty if each writing is treated as an isolated unit. What the author undertakes, therefore, is to give the evolution of Schiller's philosophic ideas: the development of his views and the growth of his conceptions are treated stage by stage. The mature philosophic doctrine of the poet is shown to be the product of many and conflicting views.

A very valuable chapter in the book is the one dealing with Schiller's early views as contained in his essays "Philosophie der Physiologie" and "Über den Zusammenhang der thierischen Natur des Menschen mit seiner geistigen." So far as the reviewer is aware, there is no book on Schiller in English, and very few in German, which gives such a detailed and critical exposition of the two essays so significant for the understanding of Schiller's development. The germs of much of his mature philosophy are contained in these early writings of the pre-Kantian period. They show the influences from various sources,—from the Leibniz-Wolfian philosophy and from that of the Scottish school, from Shaftesbury, Hutcheson, Ferguson, Garve, and Haller. Already in these essays the dualism between the natural and the spiritual, or between the physical and the moral, is the center of Schiller's interest; and "his attempt at a mediation between the so-called lower and higher natures, first by means of a metaphysical intermediate agent, later by means of art, foreshadows the whole course of his future thinking" (p. 66).

Accordingly when Schiller takes up his study of Kant, the critical philosophy fell in with the line of his own development. "The stream of his thought, rising from many sources, was only clarified and deepened, rather than directed into other channels, by contact with the Critical Philosophy" (pp. 37, 115). Those writers who see in Schiller's philosophy nothing more than a reproduction of the Kantian ethical conceptions in a rhetorical garb, overlook the early writings in which the poet, prior to his studies in Kant, strove to reconcile extreme sensualism and extreme rationalism in morality. His attitude towards Kant is that of an



independent critic, and the opposition to Kant's extreme rigorism is wholly in keeping with Schiller's own development. That Schiller's attitude "makes an advance upon the Kantian position, that this advance . . . consists in a fuller recognition of the desiderative side of man's nature, all this must be the broad result of an unbiased reading of the writings of Schiller" (p. 118).

While the difficulty of establishing a single unambiguous ethical doctrine out of the different writings of Schiller's post-Kantian period must be admitted, a critical reading of these writings leads the author to assume an independent development of Schiller's esthetic morality in which Kant's dualism between inclination and duty is reconciled. Schiller recognized two distinct kinds of valuation of human conduct—the moral and the esthetic—and only in the complete fusion of the ethical and the artistic standards does Schiller's view of beautiful morality consist. "*Inclination to duty*,—that is the heart of Schiller's ethics, and the gist of his criticism of Kantian rigorism" (p. 127). "The conduct flowing from the harmonious activity of all man's powers Schiller calls beautiful conduct (*die schöne Sittlichkeit*), and the soul thus at one with itself, the beautiful soul (*die schöne Seele*)" (p. 131).

Schiller's independent philosophical views centered mainly around ethical and esthetic problems. It is in his view of beautiful morality as a synthesis of the natural and spiritual demands that his originality consists. Metaphysical ideas, in so far as such can at all be seriously ascribed to him, "did not constitute a clear development upon those of Kant, as did his ethical and esthetic theories" (p. 159). The question whether Schiller should—in his metaphysical views—be classed with Kant or rather with the post-Kantians is an interesting one. The author holds that metaphysically Schiller is to be identified with Kant.

It may well be that the philosophy of Schiller was far from being so well founded in his own mind. But a student of the genesis of any philosophy must always endeavor to understand its author—to use a Kantian phrase—*besser als er sich selbst verstand*.

The student of Schiller will find the extensive bibliography at the end of the book very helpful. It is regrettable, however, that an index has been omitted.

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## JOURNALS AND NEW BOOKS

RIVISTA DI FILOSOFIA NEO-SCOLASTICA. February, 1912. *L'antesignano del neotomismo in Italia* (Gaetano Sanseverino) (pp. 1-19): DOMENICO LANNA.—A study of the life and work of the father of Italian Neo-Scholasticism, Gaetano Sanseverino. *La verità ontologica e la verità logica secondo il Card. Mercier* (pp. 20-30): A. MASNOVO.—The foundation of ontological truth is not in the human intellect, as Cardinal Mercier teaches, but in the Divine Mind. *Univocità od analogia?* (pp. 31-61): G. M. PETAZZI, S.J.—The concept of being, when applied to God

and creatures, is analogical. The univocal character of the concept, credited to Duns Scotus by Belmont, although absurd as understood by the latter, is perfectly logical in Scotus himself, and in agreement with the Thomistic teaching. *Lo studio sperimentale del pensiero e della volontà* (pp. 62-72): A. GEMELLI. — The recent studies made in psychological laboratories show that purely experimental psychology is insufficient and must be completed by metaphysics. *Sigieri di Brabante e le fonti della filosofia di Dante* (pp. 73-90): BRUNO NARDI. — The theological and psychological doctrines of Dante are not purely Thomistic, as has been so often maintained, but reveal the influence of Neo-Platonism and Averroism. *Note e discussioni. Tribuna libera. Analisi d'opere.* H. Höffding, *La pensée humaine, ses formes et ses problèmes*: L. NECCHI. — A Fouillée, *La pensée et les nouvelles écoles anti-intellectualistes*: L. BIANCHI. P. Natorp, *Philosophie. Ihr Problem und ihre Probleme*: B. C. Giachetti, *La fantasia*: A. GALLI. A Michotte et C. Ransy, *Contribution à l'étude de la mémoire logique*: A. GALLI. T. V. Moore, *The Process of Abstraction. An Experimental Study*: A. GEMELLI. Ed. Claparède, *Psicologia del fanciullo e pedagogia sperimentale*: M. BRUSADELLI. O. Renz, *Die Synderesis nach dem hl. Thomas von Aquin*: B. NARDI. S. Deploige, *Le conflit de la morale et de la sociologie*: G. TREDICI. M. d'Herbigny, *Un Newman Russe. Vladimir Soloviev*: V. ZABUGHIN. Th. Cremer, *Le problème religieux dans la Philosophie de l'Action*. G. M. PETAZZ. *Note bibliografiche. Notiziario. Sommario ideologico.*

REVUE NÉO-SCOLASTIQUE DE PHILOSOPHIE. February, 1912. *L'énergétique et la théorie scolastique* (pp. 5-41): D. NYS. — The new science of energetics presents great advantages over the mechanical conception of the universe. The monism which is professed by some of its defenders is, however, incompatible with the principles of the new science and ought to be rejected. *Les théories politiques dans les écrits de L. Lessius* (pp. 42-85): V. BRANTS. — An exposition of the political theories of the famous Jesuit Leonard Lessius (1554-1623). *Le néo-dogmatisme* (pp. 86-115): L. DU ROUSSAUX. — The type of neo-dogmatism born among certain Scholastics from the influence of Kantian criticism is decidedly inferior to the old traditional dogmatism. *L'éthique et la pédagogie morale de Fr. W. Foerster* (pp. 116-132): F. DE HOVRE. — Förster's system of ethics borrows some elements from the philosophy of Nietzsche, as well as from the naturalistic and socialistic conceptions. It is, however, much more logical than these systems, of which Förster skilfully points out the weak points. *Comptes rendus.* Th. Ruyssen, *Schopenhauer*: F. PALHORIÈS. G. Rensi, *Il genio etico ed altri Saggi*: F. PALHORIÈS. L. Perego, *L'idealismo etico di Fichte e il socialismo contemporaneo*: F. PALHORIÈS. G. Calò, *Fatti e Problemi del mondo educativo*: F. PALHORIÈS. J. Rogues de Fursac, *L'avarice. Essai de psychologie morbide*: G. LEGRAND. J. Lottin, *Quefelet, statisticien et sociologue*: M. DE WULF. O. Willmann, *Didactiek als vormingsleer*: A. MANSION. E. Rolfes, *Aristoteles' Nikomachische Ethik*: A. MANSION. R. Eisler, *Philosophen-Lexicon, Leben, Werke und Lehren der Denker*: M. DE WULF.



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## NOTES AND NEWS

A GROUP of European professors distinguished in philosophy and science has issued an appeal to all who are interested in promoting the scientific spirit in philosophy. They explain their undertaking as follows:

"There has long been felt the need of a philosophy which should grow in a natural manner out of the facts and problems of natural science. The mechanical view of nature no longer satisfies this need. Let any one recall the "Ignorabimus" of Du Bois Reymond and the various attempts to relate mechanical and psychological processes by means of neovitalistic concepts, attempts of physicists as well as of biologists. The current philosophy, of Kantian origin for the most part, or with strongly Kantian emphasis, is impotent here, because it directs its inquiries without any deep appreciation of the need in question, because it treats of problems scarcely intelligible to any one who comes to them from the natural science of to-day, and because it is usually not able to go far enough into the questions of natural science.

To be sure, there has grown up from the soil of natural science itself a strictly empirical and positivistic point of view quite indifferent to metaphysical speculation and to so-called critical, transcendental doctrines. Its principles are however not yet accepted in their essential meanings and systematic relations throughout considerable scientific circles. They are even completely misunderstood by distinguished scientists as they are by most of the influential philosophers.

On the other hand the particular sciences find themselves forced to consider problems of even greater generality so that they take on of themselves a philosophical character. Mathematics advances to higher and higher abstractions. Geometry, in its deductive development, is freeing itself from all intuition after overcoming the limits of the Euclidean conception of space. In the theory of groups it has reached a positive treatment of the concept of infinity, once a purely negative idea, and it faces now the question of its differentiation from logic. Physics has been made to include more and more remote fields of research. Optics and all the phenomena of radiation have been brought under the concepts of electromagnetic theory, and physics has now before it the question, how far can mechanics be interpreted in terms of electromagnetism? In the theory

of relativity it touches the most searching question thus far of epistemology: Is absolute or is only relative knowledge attainable? Indeed: Is absolute knowledge conceivable? It comes here directly upon the question of man's place in the world, the question of the connection of thought with the brain. What is thought? What are concepts? What are laws? In psychological problems, physics and biology come together. And finally, the anthropological sciences, especially history and sociology, find themselves brought into closer and closer connection with biological concepts.

Those who take an interest in these progressive inquiries will find it to their advantage to have a scientific association which shall declare itself opposed to all metaphysical undertakings, and have for its first principle the strictest and most comprehensive ascertainment of facts in all fields of research and in the development of organization and technique. All theories and requirements are to rest exclusively on this ground of facts and find here their ultimate criterion.

Annual reports will bring together all branches of the association, the bibliographies will be collected of the material that can be made to contribute to strictly positivistic theory, and as soon as possible a periodical, for which the resources are already assured, will serve the undertaking.

We ask for members and active cooperation. If all those who are competent and earnest in genuinely scientific philosophical work, or who take an interest in the progress and results of such research, will write in this way we can not fail to meet with success, which will lead us in no distant future out of the unsatisfactory conditions of the present. The present day is surfeited with the fruitless and nearly uniform repetition of philosophical ideas, often expressed before, but not sufficiently clear and concrete, and, on the other hand, with the increasing separation of science into ever smaller divisions and with the merely external accumulation of results. The present day desires the solution of general problems, which research itself throws up, and is not to be put off with an *Ignorabimus* for which there is no evidence."

The appeal is signed by E. Dietzgen, Professor Dr. Einstein, Professor Dr. Forel, Professor Dr. Föppl, Professor Dr. S. Freud, Professor Dr. Helm, Professor Dr. Hilbert, Professor Dr. Jensen, Professor Dr. Jerusalem, Professor Dr. Kammerer, Professor Dr. B. Kern, Professor Dr. F. Klein, Professor Dr. Lamprecht, Professor Dr. v. Liszt, Professor Dr. Loeb, Professor Dr. E. Mach, Professor Dr. G. E. Müller, Dr. Müller-Lyer, Josef Popper, Professor Dr. Potonié, Professor Dr. Rhumbler, Professor Dr. Ribbert, Professor Dr. Roux, Professor Dr. F. C. S. Schiller, Professor Dr. Schuppe, Professor Dr. Ritter v. Seeliger, Professor Dr. Cönnies, Professor Dr. Verworn, Professor Dr. Wernicke, Professor Dr. Wiener, Professor Dr. Th. Ziehen, M. H. Baegge, Professor Dr. Petzoldt. For further information address Mr. M. H. Baegge, Waldowstrasse 23, Friedrichshagen b. Berlin, Germany.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE CONCEPTION OF "SOUL"

THE evolution of the idea of a "soul" is one of the most interesting and curious chapters in the history of human thought, having an enormous influence not only upon our religious, but also upon our philosophical and scientific, conceptions. As this development is especially pertinent to some matters under current discussion, I present some reader's notes on the topic—with no thought, of course, that my sketch is more than provisional.

#### I

(a) *As the "Life."*—Australian Blacks and Zandeh Negroes alike believe that nobody dies a natural death (and see to it that this is usually the case, being energetic cannibals!). The *life* is purely physical; by eating the body one absorbs the life. But corpses are realities; the life is separable from the body: hence this separable life is an entity by itself; it is a *soul*. Of course, plants and animals, as well as men, have souls of this sort. This, in general, is the fundamental animistic notion.

(b) *As the "Life-Blood."*—The separable soul is naturally—and, where the mind is incapable of abstract ideas, necessarily—thought of as a physical or material substance. For obvious reasons, one of the earliest and most inalienable identifications is of *soul* and *life-blood*. Our very phrase "life-blood"; the notion of its physical perpetuation in "consanguinity," "of the blood"; the notion of its transmission in "blood brotherhood"—all point to this primitive identification.

The blood is "the fountain of life." Plutarch states that previous to the reign of Psammetichus the Egyptian priests were unused to drink wine, or even to offer it in libation to the gods, for they regarded it as the blood of those who had warred against the gods; which, falling to earth and mixing therewith, became the seed of vines. It is on account of this, said the Egyptians, that drunkenness drives men mad, they being, so to speak, filled with the life-blood of

their ancestors. This is an obvious explanation of the hurtfulness of "wine when it is red," of its sacramental vicariousness, of the divine possession of the Dionysiac.

A more primitive and explicit idea is that which Berosus states as held in Chaldæa, that all life, human and animal, is derived from the blood of a decapitated deity mixed with clay—which recalls the whole group of myths in which procreation of life follows bloody mutilation. It accounts also for such tabus as are apparent in "kosher" slaughter: "But flesh with the life thereof which is the blood thereof, ye shall not eat." The Arabs speak of "the life" that flows forth upon the spear-point; and we still have the saying that "blood calls for vengeance." Says King James ("Dæmonology"): "In a secret murder, if the dead carcass be at any time thereafter handled by the murderer, it will gush out of blood, as if the Blood were crying to Heaven for revenge of the murderer."

(c) *As the "Breath of Life."*—Gen. ii. 7: "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul." Many of the words meaning "soul" are derivatives from roots signifying "breath," "wind." Such are Hebrew *nephesh*, Greek *ψυχή*, *πνεῦμα*, Latin *spiritus*, *anima*. The derivation offered for *am*, *are*, present of *be*, from a root meaning "breathe," is interesting in this connection. The invisibility, intangibility, fleetness, and ubiquity of the soul are naturally associated with this conception—perhaps as primitive as any.

(d) *As Wind, Smoke, Fire.*—Closely associated with the preceding is the body of analogies drawn from air and fire. "He opened the earth, and the spirit of Eabani he caused to rise up like a wind" (Jastrow's translation). This simile from the Babylonian epic literature recalls the Jinni of the "Arabian Nights" issuing from the flask in the form of a smoky cloud. In *Beowulf* the cremation of a hero is described *gûth-rinc âstâh*, "the hero ascended"; and it is quite possible that the conception underlying cremation is that the smoke of the consumed body bears the spirit aloft, as the smoke of the burnt-offering bears the savor of life to the divinity. At all events, the flammulæ, nimbi, haloes, and the like, which in Occident and Orient denote spiritual endowment, are an obvious indication of a primarily material conception of the soul.

(e) *As Shade, or Shadow.*—Egyptian *chaibit*, Greek *σκαί*, Latin *umbra*, like the Zulu *zitunzela* (from *izitunzi*, shadows), are all terms illustrative of the idea that the man's shadow is his soul, current in European poetry since Homer, though with Homer less a figure of speech than a description of spiritual reality.

(f) *As Phantasm.*—The notion of the soul as a shadow is the



natural precursor—aided, no doubt, by dream images and hallucinations—of the conception of a phantasmal duplicate of the body, visible, but normally intangible, and evanescent. The phantasmic soul is often a manikin, though it may be an exaggeration of the physical form. The Greek *εἰδωλον*, Latin *simulacrum*, the English *fetch*, *wraith*, *doubleganger* (respectively of Celtic, Norse, and Scottish origins, I believe) are instances. So also is the “astral body” of the theosophists. The *ghost*, though originally like the Greek *κῆρ*, probably “the one who tears, wounds,” is currently conceived as spectral and phantasmic in his visitations.

## II

(a) *Soul and Body*.—Thus is developed the conception of a being closely associated with the body, intervolved with bodily life, yet detachable from the body—“*hospes comesque corporis*.”

The Papuans “all believe that within them resides an invisible other self, or spirit, which, if it occasionally wanders for a hurried tour from its home in the hours of sleep, goes forth for good at death, to hover for some period at least round the scenes of its embodied life before departing for some lone island or inaccessible summit.” Zulu souls “may occupy the roof of a man’s hut, and if he changes his abode his soul flits also.” It is the Fijian (if my memory serves) who secretes his soul at home as a precaution for his own safe return from battle. And so on *ad infinitum*.

The *whole man* is the union of body and soul—the *life*, or the *spirit, incarnate*; and each of the two elements suffers in power from the separation. This is the normal view, and certainly the primitive one. But as ideas magnify, each of these elements assumes its own special importance.

The relative importance of the bodily element and the unimportance, or at least inefficiency, of the spiritual, is the elder notion. The discarnate soul is naked and shivering, lacking the warmth of life—

“*Errant exangues sine corpore et ossibus umbrae*.”

At death “the spirit flies forth like a dream,” says the mother of Odysseus; it is sinewless and fleeting, and even its voice is reduced to mumblings and mouthings; the shades are “gibbering shades” and the “ghostly voice” is only a fainting replica of human utterance—

“And ghosts did shriek and squeal about the streets,”

is Shakespeare’s phrase. The Scandinavian “little people” are souls awaiting their turn to be clothed in human flesh; and the whole notion of metempsychosis is founded upon the incredibility—ethic-

ally, at least—of a lastingly disembodied life: it could *do nothing* for the world, and so is unthinkable.

The ineffectiveness of disembodiment seems to extend even to superhuman beings. At all events, the *blood offering* is best to be explained as an effort to nourish the immaterial "spirit" with the more substantial "life." "I took the sheep," says Odysseus, "and cut their throats over the trench, and the dark blood flowed forth, and lo, the spirits of the dead that be departed gathered them from out of Erebus." Neoptolemus, in offering Polyxena to the shade of Achilles (Euripides, "Hecuba"), cries: "Drink the maiden's blood, black and unmixed!" The pursuing Furies, in the "Eumenides," "delight in the odor of man's blood"—their vital nourishment.

A higher grade of respect for spiritual power, at least in its conjunctive augmentation of the bodily, appears in the group of beliefs which concede the possession of a proper soul only to the more efficient persons. The Negresses of Darfur are forbidden to eat liver, because they have no souls. A Basoga chief, pointing at a peasant, exclaims: "He have an immortal soul! I can not believe it; but I will admit that perhaps Wakoli or Luba had a soul. Wakoli had four hundred wives!" Among some Polynesians only the nobles are believed to possess souls. We recall the reassurance of the pirates in "Treasure Island": "Nobody minds Ben Gunn, dead or alive, nobody minds him."

The power of the spirit is more distinctly recognized in the conception of it as a guardian spirit which hovers about the body, or appears at necessity to render aid. The *genius* of the Roman is the type of such a being, exemplified again in the *fravashi*, who looks after the interests of the Persian "in the presence of Ormazd"—very much, we may suppose, as the Fijian's soul preserves him from battle danger.

It is but a step from this idea to that of the soul's superior power and worth, which is the root of the ascetic despisal of the body. The body becomes "the spirit's house" or "the garment of flesh" and is misused accordingly. The Egyptian priests, according to Plutarch, avoided fatness for the reason that they wished their bodies to sit lightly and easily about the soul, not pressing upon and weighing down the immortal and divine with a merely mortal part. This is but the material root of the later idea of the soul as a prisoner of the flesh to be set free at death.

(b) *Survival of Bodily Death*.—A soul which is first conceived as separable from the body, later as hardly more than accidentally connected with the body, and finally as the essential, but independent cause of bodily life, can not but be conceived as surviving bodily decay. Some, to be sure, have conceived the soul to survive the



death, but not the destruction of the body. This appears to have been a Stoic notion—the soul being held to survive, on an irrational plane, until the body was entirely resolved into its elements. Theosophists of our own day hold some such notion in regard to the phantasmal soul which they recognize. And it must be confessed that there is a kind of ghastly plausibility of this view in the apparently decaying personalities of some of the mediūmistic communications of the research societies. Nevertheless, advance in civilization has, on the whole, been attended by the development of more refined and convincing conceptions, founded upon ethical rather than material reasons. And it has been the affair of the science of psychology to give content to the more advanced ideas of spiritual being.

(c) "*Anthropology*."—Both the spectacle of a lifeless body and the belief in a living, though soulless body, or in a bodiless, though inefficient soul, lead to the conception of a *complete man* combining body and soul. The science of man's nature, in this full sense, the Schoolmen named "*anthropology*," leaving "*psychology*" as the branch concerned with the analysis of the soul's life alone.

The most primitive type of such an anthropology is that formed by combining the various conceptions of soul, almost universally developed, with the idea of the body, the name, and such other notions as center in a personality. Thus the Indian prophet Keokuk instructed his followers to pray for the heart, the flesh, the life, the name, the family. The Persians distinguished in man the body, the life, the soul, the form, the genius; and the Egyptians—who seem never to have relinquished an idea, no matter how primitive, once it had gained a mental hold—analyzed the personality of the deceased into mummy, genius, bird-soul, heart, form, shadow, soul, strength, name, assigning separate destinies and longevities to these numerous divisions.

The ethical conception of a good and a bad inner nature in each individual is often hypostatized, giving two souls in place of two dispositions—a sort of Jekyll and Hyde double personality. Even Plato can say, "there are two souls, a good and an evil"; while the Bagobos are said to carry this idea to the picturesque extreme of consigning the good soul to Heaven, the bad to Hell, in the dissociation which the future world is to bring about.

(d) *The Partitive Soul*.—From this plurality of souls it is only a natural step to regard the soul as divided into a number of fairly distinct parts. In our own popular thought there is frequently an entitative distinction between Soul, Spirit, Mind, and Consciousness; and it is to be doubted if the mass of men have outpassed Purchas's conception of the soul as "conflate of the Mind, Spirit, and Animal Soul, or Idolum."

Certainly the strong hold which the old-time "faculty" psychology still retains even upon scientific text-books and treatises, compartmentalizing perception, emotion, volition, reason, etc., is palpable evidence of the vitality of this primitive way of thinking. Nor can it be denied that the physiological analysis of experience given by the "Five Wits," which the miracle plays loved to personify, is in itself a somewhat powerful and striking support to the compartmental mode of conceiving mental life; while in our own day the curious and complicated phenomena of multiple personality have given a semi-scientific ratification of old-fashioned beliefs in multiple entities connected with the same body.

### III

*Philosophic Conceptions.*—The earliest efforts to analyze philosophically the nature of the soul, the earliest psychologies, are as inefficient as the early attempts to analyze nature, committing the same error of carrying simplification to absurdity. Thus for Anaximenes the soul is air; for Heraclitus, fire; for the Atomists, a wraith of fine and impalpable atoms; for Empedocles, the blood about the heart—all conceptions at once related to the ontologies of these thinkers and to the primitive conceptions from which their thought had developed. There is a slight advance in the Pythagorean notion of the soul as a harmony; but it is only with Plato that we attain anything like a scientific psychology.

Plato regarded the soul as immaterial and as partaking of the nature and divinity of ideas. It is related to the body as is harmony to the lyre—apparently the Pythagorean notion. Its faculties are reason, understanding, faith, perception. Here we have the general conception of *an entity endowed with faculties*, which is the model of most later thinking.

Aristotle merely elaborates the Platonic view. A living being is a composite of soul and body, the soul being its formal, the body its material, cause. Soul is the "actuality" of life, it is "the entelechy of a natural body endowed with the capacity of life." Its powers are (1) nutritive or vegetative, (2) perceptive, (3) creative or kinetic, (4) rational or dianoetic. In every organism it is a unit, but it is found in every part of the body.

Aristotle here, as elsewhere, sets the detailed model for the work of centuries; what follows is but minute elaboration of his plans. Says Burton: "According to Aristotle, the soul is defined to be *ἐντελέχεια*, *perfectio et actus primus corporis organici*, *vitam habentis in potentia*; the perfection or first act of an organical body, having power of life, which most philosophers approve. But many



doubts arise about the essence, subject, seat, distinction, and subordinate faculties of it."

"The common division," Burton continues, "is into three principal faculties—vegetal, sensitive, and rational, which make three distinct kinds of living creatures—vegetal plants, sensible beasts, rational men. How these three principal faculties are distinguished and connected, *Humano ingenio inaccessum videtur*, is beyond human capacity." Nevertheless, it has not been beyond human speculation.

Augustine described the soul as simple, immaterial, spiritual, devoid of quantity or space. He distinguished in it the *lower* sensuous and appetitive faculties from the *higher* volitional and cognitive; and he made it immortal because it is the repository of imperishable truth. To this the Schoolmen added little except pedantry. Body and soul, according to Aquinas, are coprinciples of the substantial unit which is man, being related as matter and form (Aristotle). Man is defined: *substantia singularis rationalis integra tota in se et sui juris*. The soul is locomotive, nutritive, sensitive, rational (Aristotle once more); with the rational soul as the dominant and immortal part: *anima intellectiva est forma corporis, sed non qua intellectiva*.

Sir John Davies's poem, "Of the Soul," in which he reduces psychology to rhyme, serves up the general hotch-potch in a series of powers which almost rivals Burton, but is better than Burton's analysis in that it reflects more persistent notions. The soul's powers he finds to be the vegetative, those of the "five senses" and that of the "common sense," fantasy, sense memory, passions, powers of movement, intellect, abstraction, reason—almost a modern phrenology. But the real problem is not the analysis, but the spacelessness and at the same time the ubiquity of the soul, and this Sir John resolves with a verbal dexterity that would do credit to the modern absolutistic application of the similar notion to the soul of the universe—

"So doth the piercing soul the body fill,  
Being all in all, and all in part diffused."

"Others make a doubt," says Burton, "whether it be all in all, and all in every part." But Davies has the tradition back of him, and that is better than intelligibility. He is a fair prophet of Fechner, defining the soul as "the whole unitary spiritual process in conjunction with the whole unitary bodily process."

Fechner is largely the founder of our most modern psychology—but not on the basis of this definition. The truth is that modern philosophy and psychology alike have largely ceased to be concerned with the "soul." Psychology has chosen the more phenomenal

region of mind, or latterly, of consciousness for its province; and while it has sceptically hinted that there may be no *ens spirituale* behind or beneath or beside mind and consciousness, it has mainly left the matter to the safer handling of theologians. Where it is at all frank, it treats the brain as the sole substratum and support of conscious life. This is to be understood of physiological psychology, for which consciousness is merely a bodily habit, or of psychophysics, which sees in mental phenomena merely a convenient index to experimentation.

I think a fair—as well as a shrewd—statement of the modern view is that given by Professor Singer:<sup>1</sup>

“We are barely through those long chapters in the history of science in which the theory of a hot body composed that object of a body plus heat. This heat was first conceived as itself a kind of body—a congeries of small, round atoms; then, since heat did not increase the mass to which it was added, it became the vaguer stuff called caloric. Nevertheless, however ghostly this caloric had become, it still went in and out of bodies like a stuff, fell under the same principles of individuation that bodies fall under, was in short a sort of body, though a mysterious sort of body. We know with what travail this strong, primitive instinct to add was overcome, and men had the courage to say, ‘Heat is not something inferred from the heated behavior of a body, it is that behavior.’ . . .

“As a hot body is a body plus heat, so a living body is a carcass plus life. The history of this conception is strikingly like that of the previous one. At first the thing added to body to make it alive was another body—the psyche—differing, may be, in certain of its qualities, but still falling under the same principles of individuation, having a history of its own when disembodied. Now, this psyche is reduced where it survives at all to that vague principle called ‘the vital,’ of which all that can be said is that it is a mystery. Few thinkers cling to this survival; for most of us a living body is a mechanism that behaves in a certain way, one that is well calculated to attain certain ends. Life is no longer a thing to be inferred from behavior; it is behavior, and while it is an aspect of a body’s behavior from which other aspects may be distinguished, we no longer think of these aspects as separate. Disembodied life has been placed among the myths.”

#### IV

*Bodily and Spiritual Life.*—The net result of the conceptual development traced is thus negative. It reminds one of Burton’s anecdote in regard to the discussion of the soul’s immortality before

<sup>1</sup> This JOURNAL, Vol. VIII., pages 185–6.



Leo X.: "That Epicurean pope, as some record of him, caused this question to be discussed pro and con before him, and concluded at last, as a profane and atheistical moderator, with that verse of Cornelius Gallus, *Et redit in nihilum, quod fuit ante nihil.*" So our analysis shows the conception of soul to begin and end in mythic hypostatization.

Nevertheless this result is mainly an appearance due to the essential cloudiness of abstract thinking. The process has been one of abstraction and reification from the first; coupled, in the more elementary stage, with an identification of the abstracted and reified "life" with some such concrete symbol as the breath or the blood. The "soul," the "psyche," is an ideal emblem, useful in the analysis of experience, but certainly not designating any legitimate non-experiential entity. What it properly means is a kind of fact as simple and direct as any that we know—the fact of personality.

This personality consists in something more than "bodily behavior," even while it is "incarnate" in the body with which it is objectively associated. For "behavior" and "body" represent abstractions of experience quite as emblematic as is "soul." Indeed, if we assume the personal, or shall I say *possessional* attitude toward experience, which is characteristic of philosophy as the impersonal attitude is characteristic of science, then we make rather better sense in speaking of the body as the mind's "behavior" than *vice versa*;<sup>2</sup> for the body is only one among the multitude of "things" which the mind's activity generates—or, if you are a realist, identifies. Of course "the mind," too, is one of these "things"; and so we are brought through the whole circuit of abstractions without any rest in the elusive reality. But this is the general fate of thinking.

The truth is that all our descriptions of life have to be from some point of view—and that an artificial, or at least an arbitrary one. If we happen to be ontologically minded we will think with the Greeks and the Schoolmen in terms of substance and attribute, and soul and body will each be an *ens*, whose function is to *have* and whose nature is to *be*. If we are of a more recent turn we will psychologize experience. The German mode of doing this is primitive and anthropomorphic, but with a peculiar bent, the parent of which is the "faculty psychology." Thus it is that Fichte makes the will—the moral and enlightened will—into the moving cause and the essence of the universe. For Schelling, sensation and imagination set the model. Hegel makes the reason the proper being of all. Schopenhauer, like Fichte, utilizes volition, only Schopenhauer uses a blind and unintelligent will. In each case we have a "faculty" artificially created by psychological analysis erected into the founda-

<sup>2</sup> As witness Strong's "Why the Mind Has a Body."

tion for all the other facts of experience. The characteristic exaggeration of the procedure is nowhere better shown than in a comparison of Fichte and Schopenhauer, each of whom succeeds in creating a universe to his taste by the simple expedient of broadening or contracting the scope of the faculty (the abstraction) which he has chosen to regard as basic. The whole operation is in kind exactly like that of the savage who places the life in the blood.

Nor is the phenomenalist, or naturalistic, mode of analysis any nearer the facts. When physiological science gives us a "body" as the core of certain "behaviors" we have simply taken old facts from a new point of view. The character of what we have been accustomed to term mental facts is not altered by the new name. The name does, to be sure, give a certain connotation of evanescence and destructibility to the facts, which the older terminology lacks—and this, of course, is the reason for its introduction; but it does not alter the facts nor interfere with other interpretations. For example, entirely intelligible may be that view of life which finds the foundation of its continuity in personality, as life constructs it, rather than in either a perishable body or an entitative soul. Many of our facts, and indeed most of those we care for, are not bodily facts, and are only incidentally associated with the bodily facts. This must not be taken to mean that we have a "dark" history concurrent with our conscious "light," founded upon some dim ulterior being. It means rather that the moments of light, which are the moments of what we call reality, are creative moments whose content and achievement far transcend bodily relations and possibilities. Continuing life means simply continuing experience, and analysis of experience, as in the body we know it, indubitably reveals a more than bodily element which we are justified in terming the spiritual element.

For men will continue to speak and think in the categories of substance and attribute, rest and motion, body and mind, thing and behavior. Generations of practical use have proven the value of these categories: they are simplifications, abstractions, and hence temporary falsifications of fact; but the experience of mankind certainly shows that in the long run their employment leads to clarity and truth and to such general intelligibility as enables efficient living.

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## STUDIES IN THE STRUCTURE OF SYSTEMS

## 3. POSTULATES

THE structural elements of the classical theory of the deductive system are: *proof, definition, categories, axioms, theorems*. Whilst all these are integral elements of the deductive system, it is "proof," or "deduction," in terms of which the form is defined. A systematic account might therefore be expected to begin with "proof." I find it, however, more convenient to introduce my exposition with a critical account of the main propositions regarding "axioms," because it is through the more patent changes here that the required changes in our theory of "proof" will become evident.

It is interesting that neither the term nor the usual meaning of "axiom" has any place in Plato's philosophy. It is characteristically Aristotelian. Though the Stagirite's theory of the deductive system rests on the basis laid by Socrates—Plato (a fact which is merely obscured by his numerous criticisms of Plato's doctrine), regarding "axioms," he fundamentally differed from the latter. Plato's term is *ὑπόθεσις*, which in its meaning and function corresponds to the modern use of "postulate."

Aristotle's theory of the deductive system is dominated by his conception of "cognition" (*ἐπιστήμη*). Cognition is "necessary," "certain," "apodictical" and implies the idea of a "cause" (*αἰτία*) on which it rests and from which it follows with necessity.<sup>1</sup> A proof (*ἀπόδειξις*) is a syllogism which leads to cognition (*συλλογισμός ἐπιστημονικός*), and from the point of view of "proving," the syllogism was elaborated by Aristotle as the methodical procedure which determines the "following with necessity." In every proof Aristotle distinguishes three parts: first, that which is proved, the conclusion (*τὸ ἀποδεικνύμενον τὸ συμπέρασμα*); secondly, the *axioms*, from which (*ἐξ ὧν*) the proof proceeds; and, thirdly, the subject whose properties the proof exhibits (*τὸ γένος τὸ ὑποκαίμενον*).<sup>2</sup> But the proof, this mediator of cognition, making the truth of one proposition rest on that of another, can neither move in a circle nor regress indefinitely; it must come to a standstill; there must be a "first" of cognition: secondly, we say: "not only is there cognition, but also a first of cognition (*ἀρχὴ ἐπιστήμης*)."<sup>3</sup> The *ἀρχή* is twofold, namely, *ἐξ ὧν* and *περὶ ὅ*.<sup>4</sup> The latter comprises the special presuppositions in each proof, the *δαῖν*; they are usually interpreted as meaning the "special principles of each science." This interpretation is indeed

<sup>1</sup> *Analyt. post.* I<sub>2</sub>.

<sup>2</sup> *Analyt. post.* I<sub>1</sub>.

<sup>3</sup> *Ibid.*, Chap. 3.

<sup>4</sup> *Ibid.*, Chap. 32.

suggested by the end of Chapter XXXII., referred to above, as well as by the remarkable passage at the beginning of Chapter VII (which anticipates what we are pleased to call the modern insistence on the "purity of methods"). But this interpretation, though supported by the authority of Zeller, is certainly too narrow, for even these "special principles" are "general"; but each proof requires the "particular"; and Aristotle insists that the number of "principles" (*ἀρχή*) is not much smaller than that of the "conclusions," and can not be finite if that of the conclusions is infinite.<sup>5</sup> The *ἴδιαι* are therefore not merely the special principles of each "science," but of each *ἀποδευκνύμενον τὸ συμπέρασμα*: wherever there is proof it proceeds, in part, *ἐκ τῶν ἐκάστου ἀρχῶν*. Such is the *περὶ ὃ*, such *τὸ γένος τὸ ὑποκαίμενον*. "Number," "magnitude" are mentioned as examples; it is the *γένος*, the concept, and we shall have to consider this part of the *ἀρχή* in a later paper.

The "axioms," on the other hand, are the *ἐξ ὧν*, the *κοίνας*, as opposed to the *ἴδιαι*, in each proof. As examples of "axioms" are mentioned the principle of contradiction, of excluded middle, that equals subtracted from equals are equal.

What is the nature of the *ἀρχή* on which all cognition rests? Aristotle concludes that it must be *true*, the *first*, *immediate*, *better known*, *earlier*, and in *causal relation to the conclusion*. These determinations seem indeed necessary from the Aristotelian point of view. Cognition appears like a building which needs must rest on a secure foundation. And Aristotle has given the reasons for each one of these properties of the *ἀρχή*. It will be necessary to examine them.

The first demands "truth" for the *ἀρχή*, a truth which does in no way depend on that which follows from it, neither does itself follow from any other truth; truth belongs to the axiom as such, apart from anything else; the *truth* of the *ἀρχή* is *isolated*, even though the *ἀρχή* itself stands in relation to other propositions. And it is recognized "immediately"; it is self-evident, for we know it "in still higher degree" than any of the derived propositions. If any proposition is presented, and it is an *ἀρχή*, we must be able to decide by direct inspection whether it is true or not; and *vice versa*.

After what has been said in the first paper, it will be apparent that these arguments move in the realm of "psychology of cognition" and of "critique of cognition"; for they deal with problems concerning the *truth* and the *subject-relation* of logical entities. But it was necessary to inspect them here, because they serve, in their part, to establish the *radical distinction* between the *ἀρχή* and the "theorems." If Aristotle adds therefore that the "axioms" must

<sup>5</sup> *Loc. cit.*



be a "first," it is clear that he refers, not to any accidental order of presentation in a given system, but to an *objective* order, to a relation between the logical entities themselves. The "first" is not merely "unproved," but "*indemonstrable*" (*ἐκ πρώτων δ' ἀναποδείκτων*) i. e., that which *can not* be proved; and which need not be proved, because its certainty is superior to all proof.

The determinations "better known" and "earlier" seem at first sight to refer merely to a subject-relation; but Aristotle makes the distinction between the *πρότερον πρὸς ἡμᾶς*, and the *πρότερον τῇ φύσει*; it is the latter he means here, and it stands merely for "*generality*"; for, according to him, "better known and earlier in itself" is that which is further away from sense-perception; and "the most general is furthest away." Aristotle applies here to propositions a distinction, which is of fundamental importance in his theory of concepts, namely, with respect to "generality"; he seems to assume that, given two propositions  $p_1$  and  $p_2$ , they always have a definite relation of generality. And yet it is by no means self-evident that this assumption must hold; on the contrary, it may be doubted whether it really does hold. Aristotle had, no doubt, in his mind examples of syllogisms of the "all men are mortal" type; and here the distinction is simple: "all men are mortal" is more general than "Socrates is mortal." It was a dogma of the traditional logic that all proofs in mathematics are of this type. Kant took exception to this dogma; Sigwart tried to formulate a difference in his "*Logik*"; but most clearly the difference is exhibited by the modern work in the algebra of relatives. Now take Sigwart's example: "if the corresponding sides of two triangles are in proportion, the corresponding angles are equal; if the corresponding angles of two triangles are equal, the triangles are similar; therefore, if the sides of two triangles are in proportion, the triangles are similar." This, as Sigwart rightly remarks, looks like Barbara, but is, in reality, *himmelweit davon verschreden*. The propositions do not simply state "subsumptions," but relations of a different kind. *But which of these propositions is the most general?* In a similar way, which proposition is more general: Euclid's parallel axiom, or the theorem about the sum of the angles in a triangle?

This criticism of the concept of "generality," as applied to propositions, merely introduces the critique of "axioms," which the modern work necessitates. Generality might be surrendered; it would not make Aristotle's account any more acceptable. The difference between the *ἀρχή* and any theorem would still be radical, absolute, inherent; the proof, according to Aristotle, *can* proceed in but one direction: *from* certain propositions (the *ἀρχή*), *to* certain others: *it never can go in the opposite direction*, at least not as a

deductive proof; it is impossible, if *A* is used as a basis for proving *B*, that *B* should be used to prove *A*. We can, from "all men are mortal," deduce "Socrates is mortal," but not inversely. This inverse procedure, prohibited by the Aristotelian theory of a deductive system, we can, however, easily exhibit in mathematics, at least in a large class of cases. Thus if, in plane Euclidean geometry, the opposite sides of a quadrilateral are parallel, it can be proved that they are equal; and *vice versa*. This may not seem very remarkable; but it applies to the "*axioms*." By means of the "parallel axiom" we can prove the theorem about the sum of the angles in a triangle; and *vice versa*. Either one can therefore be "proved," provided the other is accepted. "Indemonstrable" is not a property which inheres in a proposition as such, as Aristotle claimed, but in a proposition in a system, i. e., in relation to others. Take it out of this definite systematic arrangement with its definite order, and the term "indemonstrable" becomes meaningless.

Mathematicians have therefore more and more avoided the term "axiom," and speak of "postulates," or "hypotheses," to express that the starting-point of the system is merely "assumed," that the "fundamental propositions" of a system are merely "unproved," but might be "provable" propositions in a different arrangement. Which propositions are chosen as postulates and which as theorems is *accidental*, namely, to the particular arrangement; it is not a logical property of certain propositions to be "presupposed" by others.

This states somewhat radically what has been demonstrated, however, thus far only in part. Mathematicians have worked out numerous "sets of postulates," which exhibit this interchange between postulates and theorems. Is there any limit to this interchangeability? Are there any propositions which always *must* be among the postulates? The views regarding this *degree* of interchangeability differ somewhat; some, *e. g.*, Bertrand Russell, hold that it is possible only within certain (though as yet undefined) limits; others, as E. V. Huntington, incline to the view that this interchange can go on indefinitely; and I myself incline to the latter view; the presumption, at least so far as mathematics is concerned, is strongly in favor of it.

But, some writers hold, whilst this may be true for mathematics, it is not true for logic; such propositions as the "syllogism" *must* be among the "fundamental principles." Two arguments are advanced to support this view.

First, it is held, these propositions are "absolutely true," in the sense that they can not possibly be denied; or, as Professor Royce puts it, their denial implies their own assertion. It would, therefore, be absurd to begin with any other "postulates" if these "sure" and "undeniable" propositions are at our disposal. This view is closely



allied to the Aristotelian; it differs from it in that it proposes a definite *logical criterion* for testing the absolute truth of a proposition; it does not rely on psychological "self-evidence"; the principles which are thus declared "absolutely true" by the criterion "that which is implied by its own denial is absolutely true" may indeed be very much lacking in psychological self-evidence.

The second argument, used by Russell and others, is that the very nature of proof demands certain propositions, such as the "principle of the syllogism," that they must therefore be amongst the "postulates," for no proof is possible without them.

I can not consider the first argument here, as it belongs to "critique of cognition"; I have treated it in a paper on "A Class of Invalid Criteria of Truth," in which I believe to have shown that "absolute truth" in any such sense as the argument understands it, does not exist. *Truth is always relative to its particular problem.*

The second argument, however, contains the recognition of an important principle, though it unduly restricts it to such postulates as the "principle of the syllogism." We may state it thus: any deductive system of logic must have among its "postulates" the "principle of the syllogism," or its equivalent. But this holds true of all postulates and for all deductive systems. In other words: we do not interchange propositions at haphazard in selecting new sets of postulates from the propositions of the system. *We choose equivalent sets.* But "equivalent" propositions may in all other respects be widely *different*; they are by no means necessarily *identical*. I shall revert to this question of equivalence, which seems of very great importance, in a later paper. For the present purpose it is sufficient to say that equivalence *regulates* but does not *limit* the interchange of propositions in a system. (Incidentally it may be remarked that the "principle of the syllogism" is *not* among Whitehead's set of postulates for the algebra of logic, but is *proved* as a *theorem*.)<sup>a</sup> Russell's own position seems to have undergone a change regarding the question of "axioms" and in the direction toward the position taken in this paper. As evidence I quote merely two passages from the "Principles of Mathematics," published in 1903, and their amendments in the "Principia Mathematica" published, in conjunction with Whitehead, in 1910. The passages are: "A definition of implication is quite impossible" (p. 14), supporting Peano's view regarding the existence of "indefinables"; but "Principia Mathematica" *does* define implication! The other quotation is: "Some indemonstrables there must be; and some propositions, such as the

<sup>a</sup> Whitehead, "Universal Algebra"; or E. V. Huntington's paper, "Sets of Independent Postulates for the Algebra of Logic," in the *Transactions of the American Mathematical Society*, July, 1904.

sylogism, must be of the number, since no demonstration is possible without them.”” In the same connection Russel upholds the distinction between “unproved” and “indemonstrable” propositions, and explicitly asserts the existence of “indemonstrables.” But “*Principia Mathematica*” is less explicit on the point and seems to me in perfect harmony with the view defended in the present paper. “Thus deduction depends upon the relation of implication, and every deductive system must contain among its premises as many of the properties of implication as are necessary to legitimate the ordinary procedure of deduction” (p. 94). Only why not frankly say that logic could be developed altogether without even mentioning implication? Mrs. Franklin has developed a system which takes “inconsistency” as its fundamental concept; Professor Royce, by means of his 0-relation, is able to dispense with “implication” as a fundamental concept; Whitehead did not require it. In all these cases it was easy to “define” implication, and “prove” the laws of the syllogism.

If this position, that there are no “indemonstrables,” is accepted as the outcome of the modern work, an enormous freedom is gained for logic as well as for mathematics. For then only are we able to rid ourselves successfully of the confusion of purely logical with psychological questions. Ever since Kant has the attempt been made to separate these; but “logical” necessity was ever so closely allied with a purely psychological “not-being-able-to think otherwise” that a confusion was unavoidable.

But, whilst it is demonstrated that an interchange between “postulates” and “theorems” is possible, and whilst it is at least probable that this interchange has no logical limitations, it is still possible, and necessary, to *choose*, from the various possible sets of postulates, certain ones as *preferable*, provided the criteria of preference are stated or indicated. And if we look back to Aristotle’s theory, we can say: he stated as principle of selection prominently this: “Choose a set of postulates such that it contains the *most general* propositions of the system.” And our main objection to Aristotle’s theory may now be stated thus: he incorporated his principle of selection into his theory of the *structure* of a deductive system, basing on it an *absolute* distinction between “fundamental principles” and “theorems,” and denying the possibility of *other* principles of selection. And in this he was wrong. It is not necessary to always prefer the “most general” principles. And it may be well to elucidate this by referring to *other* possible principles of selection which have played an important rôle in the history of science. Thus it is interesting to notice that if philosophers have been dominated in

” “Principles of Mathematics,” page 15.



their procedure by "generality," mathematicians have striven for "simplicity" of their starting-point. In "geometry" they do not begin with the general properties of curves, but with postulates about straight lines and points; in "algebra" they start with the properties of the "natural" numbers, before developing the properties of "complex quantities"; propositions are not taken in their most general meaning at first, but proved for a limited field and gradually "extended" by proper methods of procedure. In all these it is the "simpler" from which mathematicians start, the more "general" they may strive to reach afterwards. And this procedure is not dictated by any logical necessity; it could be, and sometimes is, inverted. Instead of starting, as Weierstrass did, with the simple properties of "power series" and extending these gradually so as to reach the more general functions, we may, with Riemann, begin by studying the general properties of functions and "apply" these to "algebraic," etc., functions. But in the two cases we obtain a different system of the "Theory of Functions."

And may we not, in the selection of sets of postulates, base our preference on purely psychological grounds, such as "evidence"? Why not, indeed? We may admit that "evidence" is not a logical property of propositions, but depends also on the "subject" and his natural surroundings; and what we suppose will be "evident" to our hearers may be far from it! Nevertheless, if a teacher should choose to present a subject in the deductive system form, he would be likely to start, as best he could, with postulates which, to the pupils, have at least a certain degree of "evidence" or even "familiarity." He would not be likely to start a study of "arithmetic" on the basis of Dedekind's *Was sind und was sollen die Zahlen*; he would not choose many of the "primitive propositions" of the "Principia Mathematica"! To Aristotle the "general" *was* the "better known," the deductive procedure the best for *arriving* at cognition. We, who know better than Aristotle possibly could have, how much is really demanded by "logical rigor" may well doubt whether any subject should ever be first presented in a purely deductive form, and may be profoundly thankful that our mathematical school-books fall so palpably short of their much-boasted rigor.

From here the real necessity of a "critique of cognition" will become apparent. If a system, such as geometry, can properly be presented in but one form, we may need a code of rules to detect errors in reasoning. Beyond this, what demand is there for criteria to determine the *logical value* of a given system? If, however, the same content can be presented in many, perhaps an infinity of different forms, all logically faultless, we are put before the questions: how shall we select, and by what ideals shall we be guided in our

selection? What do we even mean by saying: this system is *true*? For now we can no longer answer: because it follows from absolutely true and self-evident propositions; the theorems of one are the postulates of another, and this simple transference has not suddenly increased their truth value from the "to be proved" to the "undeniable"! It is curious to notice the attitude of some mathematical philosophers in this respect. They have always insisted on "proofs." And this demand could easily be justified so long as deductive systems were conceived to start from "axioms." Theorems, by their proofs, were made to participate in this "self-evidence" of the axioms. But how, if it is admitted that the starting-point is merely "postulated"? "In mathematics," say the authors of the "*Principia Mathematica*," "the greatest degree of self-evidence is usually not to be found quite at the beginning, but at some later point; hence the early deductions, until they reach this point, give reasons rather for believing the premises because true consequences follow from them, than for believing the consequences because they follow from the premises" (preface).

This certainly turns the Aristotelian conception of a deductive system upside down: the "postulates" borrow now their certainty from that of the "theorems"; for the latter are "*facts*." It is easily seen how this view, which is shared by others, could have been suggested by the recent work in mathematics. The "theorems" have remained much more invariant than the "postulates." There are numerous sets of postulates for Euclidean plane geometry; but they all leave the Pythagorean proposition "true"; and their own "truth" is, in part, tested by the criterion that this theorem *can* be deduced from them. However, calling a theorem a "fact" does not in any way show how this claim to certainty and truth is warranted. It does not usually mean that the propositions of mathematics are "empirical"; and it leaves open the possibility that the theorem does *not* hold if the "postulates" are suitably changed; *i. e.*, it leaves the possibility of other geometries in which the contradictory opposite of the particular theorem is also a "fact." The term "fact" is therefore used here merely to designate that which is "true" in a given system: it explains nothing, it warrants nothing; in particular, the implication of the ordinary use of the term "fact," namely, that it "holds" quite apart from the truth of anything else, is certainly not meant by those who use the term "fact" here.

It is characteristic of the difference between the attitudes of philosophers and of mathematicians that the question of "certainty," "undeniability" plays so large a rôle with the former, and so small a one with the latter. Through the whole history of philosophy runs this endeavor to find premises which will silence every possible



*doubt*; however slim the foundation, however insignificant in itself—a mere *cogito ergo sum*, perhaps—if only it is secure, if only it may serve to refute the radical skeptic! This timidity, this absorbing desire for security, this willingness to sacrifice everything to the feeling: here at last is a proposition that nobody can deny! would be ludicrous were it not so pathetic; for this abstemious self-denial was never rewarded. No sooner had one philosopher retired to his one lone rock, when another began to show that it was a mere drift! Is it not time to recognize that this whole procedure is vain; can philosophers not resign themselves to admit that the radical skeptic's position is impregnable—but also absolutely barren, and that there is no need whatever to *take* or even to invest this stronghold?

Mathematics has always passed as the paragon of security, of undeniability; how envious it must have made some philosophers! Yet, the fear of a possible skeptic has never been one of the obsessions of mathematicians. It is astonishing how often even legitimate objections were simply disregarded—until the proper time had come for their disposal. When the infinitesimal calculus was first invented, it rested on a foundation by no means irreproachable from a logical point of view. But Bishop Berkeley made small headway with his attacks on calculus. It was an efficient instrument in solving problems, which could not be solved by any other method—that was sufficient reason for keeping it. Had a logically superior and practically as efficient an instrument been offered to the mathematician, he would have been quick in discarding calculus. As it was, it was used constructively for over a hundred years before serious attempts were made to improve the logical foundations; more justly it ought to be said: before mathematicians were in a position to improve the foundations. Had they, however, discarded calculus in the first place on the ground of logical imperfections, they would never have been able to find the better foundations. All this is not said in justification of the mathematician's procedure; but it illustrates the difference; mathematicians are supremely interested in "construction": what will follow from certain data; whilst philosophers have concerned themselves primarily with the question: which premises are sufficiently secure to build upon; and this desire has led them to "self-evident" axioms, to "absolute" truth, and now to the assertion that the propositions of mathematics are "facts."

We are not concerned here with the problem of truth; we require merely that no theory of truth should be held which makes certain questions of structure impossible of solution. From the point of view of structure, the radical and inherent distinction between theorems and postulates must be denied. They are logically on a par. The decision—which propositions are chosen for postulates and which

proved as theorems—is determined by secondary considerations, prominent amongst which are those of “critique of cognition.”

This denial of the radical and inherent distinction between theorems and postulates does, however, not imply the denial of the existence of “order” in a deductive system. *Which* propositions of a given system are chosen as postulates is logically irrelevant, but *that* certain ones be chosen is necessary if a deductive system is to result. In a given deductive system the difference between postulates and theorems is definite; the latter must be proved, the former are “premises” of these “proofs,” themselves “unproved” and “indemonstrable,” namely, in the given system. To say that the distinction is not radical means therefore merely that the same logical content could have been put into the deductive system form with a different selection of propositions for postulates and for theorems. Order is inherent in the deductive system form, but the particular order is accidental to the particular system. And for this the term “postulate” is meant to stand. It is a repudiation of Aristotelianism and a revival of Platonism.

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#### REVIEWS AND ABSTRACTS OF LITERATURE

*Proceedings of the Aristotelian Society.* 1910-1911. N. S., Vol. XI.  
Williams and Norgate.

As usual, the papers read before the Aristotelian Society, during its official year last completed, command the attention of every reader who would keep abreast of the philosophical times. With a few exceptions, the ten topics discussed and the opinions expressed about them are so important that a critical survey of them would greatly exceed the reviewer's proper bounds.

“Self as Subject and as Person,” by S. Alexander, is an ingenious, pretty accurate, but not quite convincing analysis which aims to show “that the subject never is a presentation (or object), that the body of course is, and that the person (which is a combination of the former two) is partly presentation and partly not.” There is, for Alexander, no pure ego to which objects are presented; the only ego is an experience, and this is not an object, but a bodily activity. (The term “object” here means of course any entity generically like a percept.) Different things require different actions in order to be cognized; and so, just as there is one type of behavior for knowing color, so too there is a distinct action for knowing one's “self.” No peculiar complex of objects, no mere relation between past, present, and future things, constitute the material of this knowing. On the contrary, “just as the percept, the memory, the forecast of an external object as in the present, the past, or the future,



or as the concept of it as the law of its construction and action, so the "enjoyed" self which is enjoyed or "minded" by itself, and not contemplated by itself from the outside, exists in more or less partial, more or less complete, forms, and these forms have the same general characters as make external percepts, memories, and forecasts differ from one another" (p. 24). This is due to the fact that consciousness is an activity spread out in space and time and also is an activity toward differentiated spatio-temporal things.

The second paper is "On a Defect in the Customary Logical Formulation of Inductive Reasoning," by Bernard Bosanquet. It is an acute, thoroughly sound criticism of the doctrine, lately popularized afresh by Bergson, that the essential function of intelligence is to relate like to like. This view, says the writer, is invited and fostered by current statements about induction. The postulate that "same produces same" is equivocal. It properly means that *A*, under identical conditions, always has the same effect; but by Bergson and others it is construed to mean that the factors causally related are, for intelligence at least, identical. Now, except in a remote sense which is of no relevance here, the likeness of cause to effect is not postulated at all; on the contrary, it is denied. Neither does the intellectual operation of discovery and interpretation involve peculiarly the repetition of identical experiences. "It is . . . a continuing of some elements . . . into new forms of nexus," according to some principle which is not one of the elements related. The true principle underlying induction should therefore be stated more precisely; and Mr. Bosanquet suggests that we say that "every universal nexus tends to continue itself inventively in new matter." Mr. Bosanquet's incidental denial that induction is based upon elimination is not very persuasive.

Discussing "The Standpoint of Psychology," Mr. Benjamin Dumville insists that the realistic postulate has no business to invade the science of psychology, even though it is a useful metaphysical assumption. From the strictly scientific angle, the knowing process and whatever relations it may involve are "hidden in obscurity"; so deeply hidden, indeed, that the observer who will not pass beyond strict facts may not even speak of an "extra-mental thing" being related to a knower. Mr. Dumville points out at some length how Stout has preached this, but not practised it. But, however proper to the natural science of mind, subjective idealism is inadequate to philosophy; for "the process by which we come to know can not form a basis for the validity of what we know," and knowledge of the process is only a part of what we know and "must sink or swim with it." Hence pure psychology is an artificial view of reality. Before we approach it we must have some kind of philosophy. In defending these opinions, the writer criticizes a number of contemporaries extensively.

The aim of Mr. H. D. Oakeley's paper on "Reality and Value" is "to consider whether, starting from . . . the newer natural realism, anything can be done toward showing that for . . . the values of experience . . . there is a source which is objective or independent in the realistic sense." After an investigation, which is overcharged with comments on other men's remarks, the author concludes that "the reason for the way

in which purpose is seen to dominate human life, and reality in this sphere to increase in proportion to the degree in which ends are pursued, would seem to be that this is the struggle or *conatus* . . . from a lower to a higher grade of reality. Purpose would thus be an example of the tendency for any existence to increase its value."

Mr. Bertrand Russell, in his article entitled "Knowledge by Acquaintance and Knowledge by Description," attacks this question: "What is it that we know in cases where we know propositions about 'the so-and-so' without knowing who or what the so-and-so is?" In the course of his discussion Mr. Russell again demonstrates that the duality of meaning and denotation is not fundamental. The denotation is not a constituent of the proposition. This point has relevance in the defining of descriptive knowledge, which can be sharpened only after acceptance of the fundamental epistemological postulate that "every proposition which we can understand must be composed wholly of constituents with which we are acquainted." Acquaintance means direct cognitive relation to an object; and "we have descriptive knowledge of an object when we know that it is *the* object having some property or properties with which we are acquainted; that is to say, when we know that the property or properties in question belong to one object and no more. . . ." Accepting this definition, we discover that "our knowledge of physical objects and of other minds is only knowledge by description, the descriptions involved being usually such as involve sense-data." The descriptive judgment can not be explained as one which affirms identity of denotation with diversity of connotation, nor as one which affirms simple identity.

"The Theory of Psycho-Physical Parallelism as a Working Hypothesis in Psychology," by H. Wildon Carr, is a swift and severe repudiation of the pseudo-postulate of parallelism, pretty much in the Bergsonian spirit. The pseudo-postulate has been accepted by psychologists because the immediate data of consciousness do not form the subject-matter of a genuine science, inasmuch as they are pure qualities and therefore incapable of being measured and compared and expressed in formulas. But, even were the pseudo-postulate tenable, no science should assume it as a working hypothesis, for it is a metaphysic; physiology might as properly assume that thought is a secretion of the brain. The pseudo-postulate, however, is not tenable; and Mr. Carr shows, as Bergson has already done, that it contradicts equally both the idealistic and the realistic positions, and has meaning only in terms of the eighteenth-century substance philosophies, which exaggerated the metaphysical importance of mathematics and physics. Life is more than physics, though; and in the measure of its superiority we find the measure of parallelism's inadequacy. Mr. Carr ends with full allegiance to Bergson's interpretation of this last fact.

Mr. F. C. S. Schiller, under the caption of "Error," points out that most theories of error conceive it metaphysically as a thing, and not logically as a cognitive relation. "And yet," he goes on, "if we desire to give an account of the way men actually err, it is clear that what is needed is a logical analysis of human procedure." He then proceeds to



argue that "without a relation to a purpose there can be no Error"; for "relation to purpose is necessary to the existence of meaning as such, and therefore includes the spheres of both Truth and Error." "But this *sine qua non* of its existence at once equips it with a psychological pedigree." The difference between truth and error is ultimately one of value; the two are hence continuous and vary quantitatively. The illusion of stable truths arises from the fact that many purposes are relatively fixed. And the distinction between appearance and reality is a creation of purposive selection. By all odds the most interesting part of Mr. Schiller's paper is the last wherein he classifies types of truths and errors. He distinguishes eight classes: lies, errors, methodological fictions, methodological assumptions, postulates, validated truths, axiomatic truths, and jokes. In his discussion of these, he endeavors to check his critics' charge that he passes from the dictum, "all truths work," to "all that works is true."

"A New Law of Thought" is the title of an essay in which Miss E. E. Constance Jones contends that there is a "Law of Significant Assertion" logically prior to the so-called "Laws of Thought" mentioned in traditional logics; and that it is this: "What is asserted in *S* is *P* is identity of denotation of *S* and *P* with diversity of intension." The writer criticizes Mr. Russell's opinion that denotation is not a constituent of the proposition; her arguments, however, seem to assume what Mr. Russell takes pains to deny, namely, that not all judgments assert identities. One interesting case which she cites against Mr. Russell is the type of proposition, "The round-square is self-contradictory." How explain this, if meaning equals intension and there is no denotation in the case? "In intension, 'round square' can not be identified with 'self-contradictory'; the terms are differently defined." Furthermore, Miss Jones urges, the substitutions which Mr. Russell makes in supplying constants for variable in the formula of the descriptive judgment, can not be made unless the latter be construed as Miss Jones's law of significant assertion demands.

Mr. G. F. Stout, in "The Object of Thought and Real Being," demonstrates that "we always immediately think some reality which is indispensably required to supply the basis of truth and error. Further, the reference is not merely to the real universe as a whole, but to some special portion or aspect of it, which, if it is not determined in the way we believe, must be determined in some alternative way." In a very clear and somewhat novel manner, Mr. Stout develops the view, diametrically opposed to Mr. Bradley's, that "whatever is thought, in so far as it is thought, is therefore real." To reproduce any fragment of the argument leading to this would mar the latter; suffice it then to say that Mr. Stout centers his inquiry upon the nature of indeterminates and alternatives; and he shows that the mere employment of such in ordinary thinking presupposes genuine indetermination and alternatives which are more than "mental states." In closing, Mr. Stout contrasts his view with that of Mr. Bradley and that of Mr. Russell.

An unusual enterprise is pursued, in the last paper of the volume, by Mr. Alfred Caldecott. In "Emotionality: A Method of its Unifica-

tion," the author aims "to justify the search for a central Emotion which shall be able to enter as sovereign into the whole realm of Feeling and bring it into order." Of course, the emotion thus exalted is love; and the essay is largely a résumé of Baron Friedrich von Huegel's monumental biography and diagnosis of the conversion and later spiritual evolution of Catherine of Genoa.

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*Chapters from Modern Psychology.* JAMES ROWLAND ANGELL. New York: Longmans, Green, and Company. 1912. Pp. 308.

Through the generosity of Mrs. Katherine Spence Leavitt a foundation has been established upon which eight lectures in psychology are to be delivered each year at Union College. This lectureship is endowed in memory of her father, the Rev. Ichabod Spencer, D.D., a graduate of Union College of the class of 1823, and is to be known as the Ichabod Spencer Lectureship in Psychology. The present volume contains the first series of lectures delivered upon this foundation during the early part of the year 1911.

It was highly desirable that the first series of lectures made possible by this important foundation should begin with a general introductory survey of the many departments of modern psychology. Such an introduction must of necessity be sketchy in character and can only point the way toward the more intensive presentation of special topics which later lecturers may undertake. The appointment of Professor Angell for this introductory task is amply justified by the impartial and readable discussions of the general subject matter and aims of psychology which the book contains.

The first chapter, on "General Psychology," discusses the analysis, classification, and rôle of the various mental elements and patterns (sensation, feeling, imagery, memory, instinct, interest, reasoning, etc.) with emphasis on genesis and function. In the following chapter, on "Physiological Psychology," are recited the familiar evidences, from comparative psychology and anatomy, experimental physiology, pathology and daily life, for the connection of mind and nervous system. The dependence of mental life on sense organs, on vascular and respiratory activities, on possibilities of motor expression, and the influence of emotional states on organic functions, are suggested, and it is made clear that the metaphysical questions of mind-body relation are no more psychological problems than they are physical and chemical.

The value of controlled conditions of observation and the genuine scientific character of modern psychology are illustrated in Chapter III., by simple descriptions of classical experiments in sensation, memory, attention, reaction time, writing, and the association method. No attempt is made to amplify either technique or results, the emphasis being throughout on the fact that there are "no fundamental forms of mental action" which have not been submitted to experimental inquiry, and on the prediction of "unlimited improvement and unceasing conquest" for



experimental methods. In the following chapter the subjects of dreams, hypnotism, multiple personality, telepathy, spiritism, muscle reading, and the subconscious are passed in sketchy review. The negative attitude of critical investigators is expressed and the reader invited either to master the evidence for himself or to hold judgment in suspense.

The first section of Chapter V., on "Individual Psychology," presents in a fairly representative way what little is really known on the subject. The second section, on "Applied Psychology," points out a fact that is not always sufficiently clearly apprehended—that applied psychology should concern itself in large measure, not so much with the amplification and direct application of academically formulated laws, but rather with the attempt to supply to practical fields adequate methods for securing and interpreting their own data. The value of psychology in education, medicine, jurisprudence, juvenile clinics, and business is illustrated, advertising receiving special attention.

The chapter on "Social and Race Psychology" enumerates various topics in which these types of inquiry are interested, and illustrates the character of the methods and the results. Among the topics considered are social tendencies and impulses, language, play, ceremonials and rituals, fine arts, imitation, invention, mob behavior, religious consciousness and institutions, racial types and interests.

The two remaining chapters are on "Animal and Genetic Psychology." In the first of these some of the problems and methods of those interested in the investigation of animal behavior are suggested and illustrated, and the many difficulties and sources of error pointed out. The few certified results which the lecturer is able to point to in this field present an adequate picture of the present stage of animal psychology, and perhaps at the same time of the possibilities in store for it when control of vital conditions is once achieved.

The final lecture is devoted to genetic questions, to the problem of working out the details of evolutionary mental patterns, and to a general retrospective view. The book contains an appendix presenting a brief list of references for general readers.

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## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. March, 1912. *La sociologie juridique et la défense du droit subjectif* (pp. 225-247): G. RICHARD. — A defense of subjective right and a criticism of syndalism. *Le rôle latent des images motrices* (pp. 248-268): TH. RIBOT. — This paper aims at directing attention to the preponderant rôle of motor elements in the unconscious activities of the mind. *La substitution psychique—II. Substitution et transformism* (pp. 269-289): F. PAULHAN. — The life of the mind appears like a sort of whirlpool of substitutions, and substitution is traceable to systematic association and inhibition. *Revue critique. La morale de l'in-*

térêt et l'internationalisme: FR. PAULHAN. *Analyses et comptes rendus*. Windelband, *Die Philosophie im Deutschen Geistesleben*: M. ANTHROPOS. G. de Greef, *Introduction à la Sociologie*: DR. S. JANKELEVITCH. Th. Ruysen, *Schopenhauer*: J. BOURDEAU. H. Höfding, *La pensée humaine, ses formes et ses problèmes*: L. POITEVIN. P. Menzer, *Kants Lehre von der Entwicklung in Natur und Geschichte*: J. L. SCHLEGEL. *Revue des périodiques étrangers*.

THE AMERICAN JOURNAL OF PSYCHOLOGY. April, 1912. *Description vs. Statement of Meaning* (pp. 165-182): E. B. TITCHENER. - Investigations into the processes of thought give introspective description and information. There is no distinct division between the two. This article presents two kinds of reports, one descriptive psychology, the other logic or common sense. *Analysis of Consciousness under Negative Instruction* (pp. 183-213): L. R. GEISSLER. - Positive instruction sets up one determining tendency while negative instruction sets up two determining tendencies in the mental processes. *The Theory and Limitations of Introspection* (pp. 214-229): RAYMOND DODGE. - Introspection is an important indicator in special fields, but it must be supported by pathological, neurological, and experimental facts. *Psychopathology and Neuropathology: The Problems of Teaching and Research Contrasted* (pp. 231-235): E. E. SOUTHARD. - For teaching purposes it may be well to keep structure and function or even cerebral and psychic function apart, but for research no such distinctions should be made. *A Pigment Color System and Notation* (pp. 236-244): A. H. MUNSELL. *An Experimental Study of Musical Enjoyment* (pp. 245-308): HARRY PORTER WELD. - There are the analytic, motor, imaginative, and emotional types of musical enjoyment. Classified bibliography. *Psychoanalysis: A Review of Current Literature* (pp. 309-327): J. S. VAN TESLAAR. (1) S. Freud, *Die Handlung der Traumdeutung in der Psychoanalyse*. Zentralblatt f. Psychoanalyse, II., 1911, 109-113. (2) Rudolph Reitler, *Eine Sexualtheorie und ihre Beziehung zur Selbstmordsymbolik*. Zentralblatt f. Psychoanalyse, II., 1911, 114-121. (3) B. Dattner, *Eine psychoanalytische Studie an einem Stotterer*. Zentralblatt f. Psychoanalyse, II., 1911, 18-26. (4) N. Vaschide, *Le sommeil et les rêves*. Paris, 1911, pp. 305. (5) John Mourly Vold, *Ueber den Traum*. (6) L. Loewenfeld, *Ueber die Sexualität im Kindesalter*. Sexual-probleme, VII., 1911, 444-534. (7) P. Naake, *Ueber tardive Homosexualität*. Sexual-probleme, VII., 1911. (8) A. J. Storfer, *Zur Sonderstellung des Vatersmordes. Eine rechtsgeschichtliche und volkerpsychologische Studie*. Schriften zur angewandten Seelenkunde, No. 12, 1911, 34 pages. (9) F. Wittels, *Tragische Motive: Das Unbewusste von Held und Heldin. A Note on the Determination of the Retina's Sensitivity to Colored Light in Terms of Radiometric Units* (pp. 328-332): C. E. FERREE and GERTRUDE RAND. - A preliminary announcement of an experiment on the above subject. *Book Reviews*. Henri Bergson, *Creative Evolution*: B. H. BODE. J. Roseoe, *The Baganda: An Account of Their Native Customs and Be-*



liefs: E. B. T. FREDERICK. S. Breed, *The Development of Certain Instincts and Habits in the Chicks*: J. S. VAN TESLAAR. *Book Notes*. Franz Boas, *The Mind of Primitive Man*. Ikbal Kichen Shargha, *Examination of Professor William James's Psychology*. Wilhelm M. Wundt, *Zur Psychologie und Ethik*. William Stern, *Die differentielle Psychologie in ihren methodischen Grundlagen*. Ed. Claparède, *Experimental Pedagogy and the Psychology of the Child*. W. E. Burghardt Du Bois, *The Souls of Black Folks; Essays and Sketches*. Bureau of Aboriginal Affairs, *Report of the Control of the Aborigines in Formosa*. W. Barbrooke Grubb, *An Unknown People in an Unknown Land*. James G. Frazer, *The Golden Bough: A Study in Magic and Religion*. W. Y. Evans Wentz, *The Fairy-faith in Celtic Countries*. S. J. Holmes, *The Evolution of Animal Intelligence*. Frederic S. Lee, *Scientific Features of Modern Medicine*. Max Offner, *Mental Fatigue*. George D. Buchanan, *Biyonde cifrun*. Henri Bergson, *Laughter: An Essay on the Meaning of the Comic*. Carl Stumpf, *Die Anfänge der Musik*. Rudolf Lehmann, *Lehrbuch der philosophischen Propädeutik*. *Twenty-seventh Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, 1905-06*. E. Boyd Barrett, *Motive-force and Motivation-tracts*. Gustav Gottlieb Wenzlaff, *The Mental Man*. Viktor Kraft, *Weltbegriff und Erkenntnisbegriff*. Heinrich Obersteiner, *Anleitung beim Studium des Baues der nervösen Zentralorgane im gesunden und kranken Zustande*. Hans Schoeneberger, *Psychologie und Pädagogik des Gedächtnisses*. Carl Seher, *Die Seele des Gesunden und Kranken*. Jules Bordet, *Studies in Immunity*.

Coffey, P. *The Science of Logic*. Vol. II. New York: Longmans, Green, and Company. 1912. Pp. vii + 359. \$2.50.

Moll, Dr. Albert. *The Sexual Life of the Child*. Translated by Dr. Eden Paul, with an introduction by Edward L. Thorndike. New York: The Macmillan Company. 1912. Pp. xii + 339. \$1.75.

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## NOTES AND NEWS

THE University of Louvain announces the publication of Book I. of Aristotle's "Metaphysics." With this volume the *Institut supérieur de Philosophie de Louvain* commences the publication of a series of studies on the philosophy of Aristotle having the general title: *Aristote: Oeuvres philosophiques: Traductions et études*. We quote from the circular: "A translation of the principal philosophical treatises, a critical commentary, at the culminating point of philological and historical progress, requires a collective effort. The undertaking will exhibit the necessary qualities of unity and accuracy the more clearly, since its authors are actuated by a common motive and possess similar points of view. At a university, founded, as was the University of Louvain, for the express purpose of teaching the Thomist philosophy, an exhaustive study is necessarily made of the works of the master of Saint Thomas

Aquinas; his works are read and analyzed with care. Naturally the thought presented itself to the students, who so familiarized themselves with Aristotle's theories, that they should arrange for publication, each upon his own responsibility, the result of their researches and reflections. The collection will comprise translations of various philosophical treatises and studies connected with the text and doctrines of Aristotle. Each volume will be published upon completion. The translation of the first book of the *Metaphysique*, which is the work of M. Gaston Colle, is the fruit of a long and conscientious labor, based upon a study of the commentaries of early writers and the best works of contemporary writers. The notes in connection with the volume aim to be primarily a key to the text. The difficulty and merit of the undertaking should command the gratitude of all philosophers."

JULES HENRI POINCARÉ, the illustrious mathematician, died suddenly on July 17. He was born on April 29, at Nancy, and was educated at the Lycée of Nancy and at the Ecole Polytechnique. From the Universities of Cambridge and Oxford he received the degree of Doctor of Sciences. He was a Commander of the Legion of Honor, a member of the French Institute and of the Bureau of Longitudes, a professor of mathematics at the Ecole Polytechnique, and Chief Engineer of Mines. He was a member, also, of the Académie Française. The Paris newspapers are unanimous in asserting that M. Poincaré was the greatest scientist of modern France. The *Figaro* says his death is the greatest loss that the contemporary world of science could suffer.

PROFESSOR A. S. PRINGLE-PATTISON has just delivered the first course of his Gifford Lectures at the University of Aberdeen. The subject of the course was, "Contemporary Thought and Theism," and the ten lectures had the following titles: "Hume's Dialogues concerning Natural Religion"; "The Idea of Value as Determinative"; "The Philosophical Problem in the Latter Half of the Nineteenth Century"; "The Emancipating Influence of Biological Science"; "The Lower and the Higher Naturalism"; "Continuity of Process and the Emergence of Real Differences"; "Man as Organic to the World"; "Ethical Man, The Religion of Humanity"; "Positivism and Agnosticism"; "Retrospect and Provisional Conclusions."—*Philosophical Review*.

THE second International Congress on Moral Education will be held at The Hague, August 22 to August 27. The first congress was held at the University of London, September 25 to 29, 1908, and at that meeting a large number of the leading educationists of the world were present.

DR. ALFRED H. JONES, of Cornell University, has been appointed professor of philosophy at Brown University, to succeed Dr. Alexander Meiklejohn, recently elected to the presidency of Amherst College.

THE death of Dr. Shadworth H. Hodgson, the English metaphysician and philosopher, occurred June 13.

M. E. HAGGERTY, of Indiana University, has been promoted from assistant professor to associate professor of psychology.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE INTRODUCTORY COURSE IN ETHICS<sup>1</sup>

SEVERAL years ago there was held, at this University, a conference of teachers of economics. They met in order to work out, in cooperation, an elementary course in economics which could be recommended as more satisfactory in both content and method than the courses hitherto in existence. The work of this conference has already led to results of the greatest importance,—results which will undoubtedly be felt, sooner or later, far beyond the confines of the department immediately concerned. Let us hope that our conference may lead to action which, in the end, will have an equally salutary effect upon the teaching of the discipline committed to our care.

An examination of the catalogues of twenty of the leading universities of the United States reveals the following facts concerning the teaching of ethics in these institutions.<sup>2</sup> The length of the course in just half the number is three semester hours, in four it is two hours, in two it is four hours, and in four it is six hours. In eight of the universities on our list, some other course in philosophy is demanded as a prerequisite. This is usually either history of philosophy, or "some one elementary course in philosophy." With the growth in the complexity and importance of the problems of the moral life, both individual and social, with the growth in the tendency for young people who are possessed of the ability and ambition for leadership to seek a college education, it is becoming increasingly important that the course in ethics should be open to the largest possible number of students. A year's course is likely to keep away many who would find the time for a semester's course. The prerequisites tend to confine the attendance to those who have special

<sup>1</sup> Read before the Western Philosophical Association, University of Chicago, April 6, 1912.

<sup>2</sup> I have confined my attention solely to the universities, because they usually have enough teachers in the department of philosophy to enable them to arrange their courses—broadly speaking—in the way that they consider most desirable.

interests in philosophy. Such a result is so unfortunate from the point of view of social welfare and progress that it must outweigh—it seems to me—any counterbalancing advantages. Nor should the plea of better class work be urged in behalf of this policy. Of course the more preliminary training required for any subject, and the more time given to it, the more satisfactory the results. But experience abundantly proves that excellent work can be done in a course of a single semester with a class composed of a large proportion of students who have never before had a course in either philosophy or psychology. This statement will hold, I believe, even for courses based upon metaphysical presuppositions. If, in your view, ethics requires a metaphysical foundation, follow the example of Kant in the “*Grundlegung zur Metaphysik der Sitten*” and begin with an analysis of the moral life which lays bare its metaphysical presuppositions. Then let your student enter a course in metaphysics or the history of philosophy, and he will pursue it with an interest and an intelligence to which otherwise he might have been a stranger. Let it be remembered that, in very many cases, the pedagogic order is not the same as the logical. A course, then, three or four semester hours in length, open to all students beyond the Freshman, or, at most, beyond the Sophomore year, represents the present practise in elementary ethics in a little more than half of the American universities examined, and seems to me to represent the practise to be recommended for all. It is such a course as this that I shall have in mind in the description which follows.

The course in theoretical ethics should be followed or preceded—the latter alternative seems to me to be distinctly the better one—by a course of about the same length in applied ethics. The latter both can and should be so planned that it can be taken with advantage by those who have not taken and do not intend to take the course in theory. This recommendation, again, is based upon the desirability of the broadest possible appeal. The required standard of right and wrong can be educated inductively during the progress of the work from the study of the concrete situations which are being examined.

The method which appears to be commonly used in the teaching of ethics—as in the teaching of almost every other subject in the curriculum of the American college—is the “pouring in” process. The text-book, the lecture, the outside reading, seem to be the favorite instruments. In addition a place—large or small—is doubtless usually left for class discussion. It is to be feared, however, that this feature of the program is too often allowed to become a merely incidental one, that its subject-matter is not infrequently confined, for the most part, to the mere determination of the meaning of some author, or of the lecturer, and that, at its best, it is usually not



employed systematically as a means of intellectual training and does not represent a part of the work for which definite and careful preparation is demanded. The main purpose of this paper is to offer some reasons for the position that a certain form of what may perhaps be called discussion should constitute the principal part of the course in elementary ethics, and to make a few suggestions as to the way in which this may be done.

In the first place, let it be noted that the "pouring in" method does not even accomplish satisfactorily the narrow aims which it sets before itself. For material, especially philosophical material, introduced into the system in this manner, is, for the most part, not really assimilated; and even when it is, is not long retained by the memory. But this is the least count in the indictment. Suppose the above ends attained as completely as you will. It still remains true that your pupil has not gained one whit in power to observe, to analyze, or to reason, either in the field of moral phenomena or anywhere else. He has not even gained the ability to apply the principles, which you have forced into him, to new problems, whether the problems which he will meet in life, or any other. He is about as helpless as the graduate of a correspondence course in swimming. As he has gained little or nothing in power to do intellectual work, so he has not been trained to habits of intellectual work. He may have had much exercise in memorizing, and perhaps in getting at the meaning of obscure prose, but he has not acquired the habit of using his intellectual eyes or his intellectual muscles. The use of these members is, in the case of most persons, an acquired characteristic. Since his college ordinarily does little to induce or compel this acquisition, it is no wonder that after a few years the average graduate is scarcely distinguishable from the ordinary Philistine who has never had what the public calls the former's "advantages." And yet the events of the next thirty years will demand from the educated man and woman clear thought about the problems of right and wrong (and much else), more insistently, perhaps, than any preceding period in the world's history.

For this reason we teachers of ethics must face the problem of a change in our methods of teaching, as the teachers of law, and, more recently, the teachers of elementary economics, have done. The economists recognized, among other things, that their pupils were living in a laboratory, and that, accordingly, some of the best principles of the laboratory method could, with the necessary adjustment, be applied in their classes. But the problems of ethics are still nearer to the experience of our pupils. They all live in an ethical laboratory and live there all the time. This fact makes two very desirable things possible: First, the generalizations reached can be

obtained through a direct examination of the concrete data upon which they rest; secondly, the students can be compelled, to a very considerable extent, to obtain their generalization by working them out for themselves.

One or two concrete illustrations of this method may perhaps be pardoned, as making my precise meaning clearer. I will premise that the questions which follow are mimeographed and given out to the class for study in advance of the discussion. A discussion based upon snap-shot opinions would be worse than no discussion at all, because likely to encourage and strengthen one of the most pernicious of intellectual habits.

One of the problems we have to bring before our classes is that concerning the precise locus of the moral judgment. The teacher will have to begin by analyzing, or helping his class to analyze, a voluntary action and defining, or getting his class to define, motive and intention. They will then be able to determine whether it is results, intention, or motives that are under consideration in the moral judgment, by examining the following cases: (1) The executor of an estate loses the property entrusted to his care by investing it in the stock of a corporation that fails. The corporation was one in which he had no personal interest, and the investment was made only after very careful examination into its actual status and its prospects. (2) The executor of an estate, having had a quarrel with his ward and having as a result come to feel a bitter hatred for him, invests the latter's money in securities that he believes will fall in value. Instead of that they rise and make his ward rich. (3) The executor deliberately takes his ward's money and uses it for his own purposes, *i. e.*, he steals it. (4) Later, however, the executor of (3) discovers that his fellow executors are watching him more closely than he thought they were; accordingly, fearing a term in the penitentiary, he restores the money. (5) The executor takes \$1,000.00 of his ward's money and without the latter's knowledge or consent gives it to a hospital in which he (the executor) is very much interested.

Another application of this method can be made in supplying our pupils with a concrete conception of the various types of moral judgment used in every-day life by themselves and those about them. One of our colleagues proceeds by requiring his students, at the opening of the course, to hand in to him problems of moral conduct which they themselves, or some one of whom they know, have had to face; and he devotes the opening weeks of the semester to discussing them. This seems to me an admirable device. The chief objections to employing it are that you are not likely to get all the typical forms, and that many of the problems will be too complex to be handled satisfactorily in the limited time at your disposal. These difficulties



could doubtless be met by selection and supplementation. But the supplementation would ordinarily have to be quite extensive, and accordingly a more systematic method of procedure seems to me preferable. This consists in giving the class a dozen carefully selected casuistry problems. The answers to these they are to write out, assigning their reasons, when they have any, for their conclusions. These answers are classified and the typical ones are mimeographed and given to the class for analysis. This supplies the student with a mass of concrete data. Some of it, representing as it does his own ideals and processes of thinking, will be familiar to him and thus make him feel throughout the semester that he is treading on the firm ground of observed fact. That which is unfamiliar, as foreign to his modes of thinking and feeling, will serve the equally important purpose of waking him from his dogmatic slumbers and enabling him at once to realize the complexities of the problem and to see the nature of these complexities. Often also it will open his eyes to attitudes of his own which had never come explicitly to consciousness, but which had none the less exercised an appreciable, sometimes, indeed, a very important, influence upon his moral judgment. This exercise also gives a new interest to the question: What is meant by calling the various modes of action right? and a new urgency to the problem of universal validity.

It will perhaps be urged that the results here demanded can be obtained through the study of the history of ethical theory. And whatever the reasons may be, the catalogues show that in at least half of our universities historical material forms a very considerable, sometimes (apparently) even the chief part of the subject-matter of the course. After having given this system and that just described thorough trials my conviction is very strong that the latter is distinctly preferable. Certain of the objections to the use of the historical method are obvious. They are identical in principle with those which have driven the old-fashioned manuals out of the classroom in English literature. If the manifold evils of this method are met by sending one's pupils to the original sources, new difficulties arise as serious as the former ones. A Shaftesbury, a Kant, to say nothing of a Plato, offer difficulties to a raw young student which we teachers can realize only with the greatest effort. If he is to understand and appreciate what he reads, either we must do the interpreting for him, or else give up half of our semester to the study of a single author. The latter, of course, means a return to the textbook method. If, on the other hand, selections from different authors are chosen, new difficulties arise from the fact that in most writers on ethics the understanding of every chapter after the first requires the understanding of all that have preceded. In any event,

whichever of these awkward alternatives may have been chosen, it is safe to say that the major part of the energy and time of the student has been expended upon apprehension and memorizing—a good deal of it, by the way, directed upon material of no particular value to any one but the expert in ethics. Accordingly, genuinely independent thought will have to be relegated to an inferior position or else crowded out entirely.

But there is a more serious and fundamental objection to the use of the historical method. It leads the student to look at the facts through another person's eyes, instead of using his own. Of course the author is not treated as an oracle; he is freely criticized by the teacher and may be criticized by the class. Nevertheless, at its best, the process is entirely too much like going through a picture gallery with a guide-book in which each picture is analyzed for your benefit by an expert. In class work in a college or university there should be but one cicerone, the teacher. He should guide the observation and thought of his pupils; and he should supply information only after they have exercised their own powers to the best of their ability.

Hitherto I have been discussing the possibility and the desirability of training one's students in the power and the habit of intellectual exploration in the subject of theoretical ethics. But the opportunities for such work are still greater in applied ethics. A considerable number of programmes could be sketched, but I will speak only of that one with which I happen to be most familiar. It consists in presenting certain general principles which have been widely held to be applicable, just as they stand, to the solution of social-moral problems, and requiring the class to criticize them—of course, in the proper sense of the word criticism. In particular the class determines their meanings, or various possible meanings—an excellent exercise in the logic of ambiguity—and discovers, and then evaluates, the concrete results that would follow a consistent application of them to the life of the society in which we live. The principles employed are those generally held by the adherents of the doctrine of natural rights: Every man ought to be free to do that which he wills, provided he infringes not the equal freedom of any other man; Government depends upon the consent of the governed; All men ought to be treated equally; Every man has an absolute right to the fruits of his labor. A study is also made of Mill's formula of liberty. In addition to the general criticism, each principle is examined in its relation to two or three concrete problems of contemporary industrial, social, or political life. Such work, it will be evident, is to a very considerable degree—though by no means entirely—destructive. This is, in some respects, unfortunate. But



if you are going to train your students to see and to think, it is largely inevitable. Their minds, when they come to us, have reached the critical, but—ordinarily—not the constructive stage; and we have to take these minds as we find them, and make the best of them. The constructive work will have to be done largely by the teacher. Even here, however, if he is determined to do nothing for his pupils which they can be allured, or cajoled, or whipped into doing for themselves, he will find that there are more ways of throwing the burden upon them than he would ever have suspected if he had not made the attempt.

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### THE AIM AND CONTENT OF THE FIRST COLLEGE COURSE IN ETHICS<sup>1</sup>

I WANT to consider the aim and content of the first college course in ethics as a moral issue larger than our customary academic vision cares about. Permeating all that I shall say is the fundamental guess that, in general, there are some ideals even more imperative than those of scholarship, namely, those for the sake of which scholarship exists at all; that, from a pedagogical point of view, philosophy has larger responsibilities than those she owes to herself; that we should cease finding philosophy and teaching philosophy merely in terms of the technical problems and systems; that we should regard our students as something more than potential philosophers, and that, in the case of the student in the first course in ethics, this something more should be thoroughly defined.

#### I. AIM

What the course in ethics shall be about depends upon the answer to the prior question: What is the best purpose subserved by having such a course at all, in view of the present state of the college curriculum?

I am convinced that this question, in turn, is peculiarly dependent upon what is to be our ultimate ideal in education. Many other current problems converge to the same point, which is the reason that the solution of this question concerning the educational ideal is so singularly insistent of late.

Now, American ideals of education are many and conflicting, but the ideal most widely emphasized from the beginning of our educa-

<sup>1</sup> Read before the Western Philosophical Association, University of Chicago, April 6, 1912.

tional history is what can be most succinctly expressed as education for democracy. Sometimes this ideal receives such narrower phrasings as "education for self-government" or "education for citizenship." The recognition of this ideal has always been at the basis of the assumption by our government of its educational responsibility, a recognition which, more than anything else, has made our educational system what it is. In spite of new and illuminating theories of the end of education, and partly because of them, this ideal has steadily grown and is receiving emphasis from some of the most prominent professional educators of our generation. True, this ideal is not insistently present in college faculties; there, the proximate end of teaching, scholarship for its own sake, receives its expected emphasis. But this immediate ideal can never finally settle the fundamental meaning of a particular discipline in a college curriculum, much less the ultimate end of that curriculum itself. The ideal which can settle such matters is the ideal with which I am now seriously concerned.

Education for democracy is not best defined as education for self-government, although it includes that; for, of course, democracy is not merely, or even primarily a form of government, but a form of society. It involves a special theory of persons, their nature, their worth, their possibilities, and their social rights and duties. Just what democracy is need not be settled here: but whatever else it is, it is primarily an ethical conception, and an ethical conception of a very distinct type. Thus, first of all, the founding and the maintaining of a concrete democratic society is not merely a political project; it is primarily an ethical undertaking for the sake of a definite ethical ideal of human welfare. Secondly, it is distinctive of the very conception of democracy that it is an undertaking which implies rational, self-conscious responsibility on the part of every real member of it. Thirdly, this in turn implies, first of all and all the time, the self-conscious examination and evaluation of moral standards by every man and woman who has achieved democracy's rights and duties. And, now, here is the crucial point: education for democracy, in contrast to education for less autonomous forms of society, means a new and cardinal emphasis upon a thorough training in all the technique of efficient moral reflection. It is not that democracy will be the worse if this is not recognized: it simply will not be at all.

Now, how is the American college student to arrive at a reflective knowledge of ethical values such as is to make his education fundamentally efficient? Well, he will receive it indirectly and partially from many of his courses, especially in literature and in such social sciences as history, economics, and sociology. But there is only one



course in which he can receive a direct and intensive training of this sort, only one course which can give him in a systematic way the data indispensable to his full moral consciousness and which will educate him to recognize and apply the various sorts of moral standards of value. That one course is the course in ethics. And he should be able to find this training in an elementary course, since, for one reason, it may be the only course in philosophy that he cares to take; and, for reasons yet to be given, he should take it early in his curriculum.

What I mean by the larger educational responsibilities of ethics as a science is now evident. It is a responsibility dictated by the larger responsibilities of education in a democracy. The first course in ethics must be modified to some degree in terms of this responsibility. Nor are these general considerations the only commanding ones. For moral scholarship has assumed the place of an educational issue because of acute social issues definitely depending upon it. Even philosophers with only theoretical interests, if their theory reaches down to an analysis of contemporary institutions, can not fail to observe that the conspicuous American social institutions, especially those of politics, society in the restricted and broad senses, education itself, the national literature, and the institution of religion, are lacking nothing so much as ethical self-consciousness to make possible their rational progress. Plainly, this lack of accurate power in ethical reflection is the chief reason of what Professor Royce calls the "inefficiency of our ideally disposed public." We are a nation of idealists, but of an idealism without sufficiently definite ideals, often strenuously aimless and busily incoordinate.

Will a college course in ethics remedy the trouble? No, the question is not quite so absurd as that. The question is: Since, admittedly, education alone can make democracy possible, since indeed, education *exists* to make it possible, what part does a training in ethics assume? Without losing its technical character, and, above all, never leaving scholarship for the dubious and sickening ideal of edification, this course, somewhat revised in content and method, is yet to bear a heavier and more definite burden in the process of education for democracy. All the other aims of a course in ethics may be attained in consonance with this aim and indeed through it.

## II. CONTENT

In view of the aim just emphasized, the content of the first course in ethics should be, primarily, a review of the various criteria of the moral judgment, with emphasis upon the conceptions of personality and of society involved in these. This content should be pursued in the spirit of a constructive search. Let us insist that it shall be

constructive: doubt may be the birth of philosophy to the philosopher, but it often means permanent scepticism to the sophomore. To prevent the student from getting moral scepticism as the only result of his ethics course, it should have a minimum of unsettled and unsettling problems. Certainly they belong to a later course. Many of our first courses in ethics are failures because we seem unwittingly to adopt the noble aim of launching students into a life of ethical theorizing for the sake of ethics: this might well be the working ideal if men were not what they are: but this one course in ethics will be the only definite and coherent training in ethical theory that the average student will ever receive.

As to the nature of the constructive result, it should at least include the ethics of that form of society in which the student is to find his moral education worth while—the ethics of democracy. I myself make one of my elementary ethics courses a study of American ideals: and some such study might well be an integral part of every elementary course in ethics. The procedure is, first, to review democracy's doctrine of the person; secondly, to define the ideal of democratic society in terms of this doctrine; thirdly, to examine five conspicuous American institutions, namely, politics, society, education, literature, and religion, ascertaining concerning each: (a) The ideal pretended and announced; (b) the ideal implied in organization and deeds, or the ideal actually being realized; (c) the true ideal; (d) how to make the real ideal efficient. A syllabus in connection with the study of each institution, including a carefully selected bibliography, is a great help in this part of the course. With such a content as here outlined, a valuable prerequisite is elementary psychology: indeed, it seems to me that this is the one prerequisite to any ethics course.

With regard to the classic difficulty in finding a suitable textbook, I am convinced, after trying six different texts and readopting one that was discarded in disgust, that the trouble is not chiefly with texts, but with our own vagueness of purpose in using them. Any text is insufficient in itself: but several of the standard texts can be made fruitful in our hands if our purpose is vital enough to use them and supplement them rationally.

It is evident that I believe that the first course in ethics should have a much more important place in the college curriculum than is now accorded it. This would be amply justified in terms of the aim I have held for it: but when one adds the strangely neglected consideration that an ethical self-consciousness is imperative for the student's rational evaluation of the educational process itself, especially in terms of an elective system which presupposes autonomous standards, the conclusion is beyond cavil. For education is only



falsely defined as the satisfaction of the student's wants: education goes deeper than that: *education is training men and women to have the right wants and to know how to set about to fulfil them.* The first part of this educational task is a strictly ethical problem.

It would be different if our colleges would provide any other courses that would do the work: but none of them do: and I am not sure that an ethics course will ever be superseded in this service.

The course is so important that it is not inconceivable that it should be required of all students at least as early as the sophomore year. At least this early, because the ethics course is best adapted of all the philosophical courses to build on the knowledge of the student, for even freshmen have had self-conscious moral experiences. We have many fallacious qualms about requiring courses in philosophy, especially in ethics. This is one course, we say, which the student can not afford to hate because he has to take it and after which he will say "Thank God, I'm through with that!" Such an attitude, we say, defeats the very end of philosophic teaching. So it does: but what is the matter with our teaching if all that it achieves is to make a student dislike a vital subject? A teacher who can not render the first course in ethics interesting enough to make every student glad clean through that he took the subject, simply ought not to be teaching elementary ethics at all.

Not only in the teaching of ethics, but in the teaching of other elementary philosophy courses, a new spirit is discernible. It was well shown, in the answer to the questionnaire<sup>2</sup> recently sent out by a committee of the Western Philosophical Association that in courses in the introduction to philosophy there is new insistence upon the student's independent thinking in terms of present-day problems. And we need not be concerned with regard to whether philosophy in general or ethics in particular will suffer in discharging its larger responsibilities. To quote a passage from the very suggestive preface to "Ethics" by Dewey and Tufts: "A science which takes part in the actual work of promoting moral order and moral progress must receive a valuable reflex influence of stimulus and test."

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<sup>2</sup> "The Aims and Methods of Introduction Courses: A Questionnaire," J. W. Hudson, this JOURNAL, Vol. IX., pages 29-39.

THE USE OF LEGAL MATERIAL IN TEACHING ETHICS<sup>1</sup>

THE present keen interest in the problems of justice and its administration through the courts affords an unusual opportunity for the teacher of ethics. The questions of constitutionality, of the "rule of reason," of "rights" of various kinds, are no longer regarded by the public as technical matters to be discussed by experts only. Following theology and education, law is taking its turn at being heckled, and as a result is likely to return to closer relation with public sentiment from which it once arose. Undergraduates are sufficiently affected by the general attitude of the public to respond to illustrations drawn from current legal doctrines and discussions. Some problems which may seem to be highly abstract are seen to have important bearings. The following suggestions are intended merely to indicate a few typical instances.

1. One of the most discussed questions at present is that of the fixed, as *versus* the flexible constitution. The underlying assumption in the idea of a constitution is that there are certain principles so general that they may be placed in a separate category from other less general rules. Such principles are analogous to the universal laws of rationalistic ethics. Few publicists would affirm that a constitution should never be altered in any respect, yet many would consider it as consisting largely of "eternal truths," of fundamental rights. If it is to be changed some would prefer to change it only by a formal amendment which then becomes again a "universal law." It is easy in the books to discuss Kant's "universality" as merely formal and therefore empty. But why the deep-seated objection to "special legislation"; why the general approval of constitutions, unless there is some reason for framing our laws so that they shall apply to all?

On the other hand the position of the empiricist or pragmatic critic of eternal laws is equally well rooted in judgments of common sense and in present criticisms upon fixed constitutions. Those who advocate the "recall" of decisions upon constitutional questions would change principles, but not by substituting a universal law of absolute extent. They point to the Fourteenth Amendment to the Federal Constitution as an instance that such a sweeping declaration may have applications undreamed of by its proponents. They propose rather a specific modification. Others, who deem such a specific modification too radical a method when it takes place by popular vote, approve the method of tentative and gradual change if carried through by the process of judicial interpretation. The

<sup>1</sup> Read before the Western Philosophical Association, University of Chicago, April 6, 1912.



Federal Supreme Court may be said to illustrate the method of "working hypothesis" in its amendment or development of the constitution. A decision is handed down and allowed to stand until it appears that the unlimited application of its principle is undesirable. Then a basis is found for restricting this by some other principle. This method of reconstructing principles, in view of their working, raises another interesting problem. It proceeds under the "legal fiction" that judges do not make law, but only declare or interpret law. It thus preserves the seeming immutability of law while actually admitting change. What are the advantages and disadvantages of this method in the field of ethics? Is it better to make clear our moral reconstructions and thus make "progress" our chief value, or to keep continuity in the fore and thus preserve the sanctions of unity with past values?

Under this point, it may be worth noting also that at present the objectors to the fixed rules who are most active are not the antisocial, but the social reformers.

2. Another question connected with general rules is illustrated by a recent case under the criminal clause of the Sherman Act. The prosecution supposed it had a very strong case, but the jury acquitted the defendants. It is held by some in explanation of the outcome, that though the prosecution made a strong showing that there was a combination, it did not show conclusively that this had specifically injured any one. It is claimed that a jury is not likely to convict unless injury is shown. If this is the case, it is a significant evidence that the average man, even when an "impartial spectator," is not ready to support the sanctity of "law" unless he can see a reason for the law in some concrete consequences of its violation. Indeed this is but a part of a more general situation. When a man fails to live up to his professed standards, we usually assign his failure to his incomplete control over his passions, or to the lack of effective motivation for good. But it is possible that there may be another reason in some cases. It is notorious that lawmakers are more ready to pass strict laws and affix rigorous penalties than juries are to enforce them. This may be due to the fact that lawmakers are better men; it may also be due to the fact that they abstract unduly from the complex motives and interests of human nature. It may be true that the average man does not err in being too strict with himself, but in the problems of moral education there is certainly a suggestion here for the lawmaking parent and teacher.

3. Another line of cases offers an illustration of the issues involved in the subject of the moral judgment. Do we judge motives, intentions, or results? The ordinary legal doctrine that a criminal act must include both intent and overt act is well known, but some

further points are of interest. It is commonly said that the law does not consider motives. No doubt it does not permit a religious fanatic to justify illegal acts on the ground that his motives were good. Nevertheless, if we take motive as indicating the more remote, and intent the more immediate aim, it is evident that sometimes one will be singled out as important and sometimes the other. In strike cases, the courts have sometimes held that the injury to the employer was the primary intent, and have refused to consider the more remote aim of benefiting the strikers; whereas in business competition, it is assumed that self-benefit is the important part of the process, the injury to competitors being incidental. In a recent case, however, a court upheld a strike called to compel the discharge of a helper to one of the men. The decision admitted the injury to the individual whose discharge was sought, but maintained that this was incidental.

Strikes to obtain a closed shop have been enjoined where no specific gain other than that of securing monopoly has been in evidence. Such cases bring out very well the problem of end and means.

4. Is there a "common good," or are there only "individual" goods? The courts have long had an answer to this question which at any rate may be regarded as the answer of common sense, and as indicating the ordinary usage. Taxes may be levied for public purposes only. It is recognized that the public good will indirectly benefit the private citizen, and, conversely, that which benefits the private citizen is likely, in the end, to benefit the public. But it is held that the distinction is clear between what is primary and what is indirect or secondary. Another aspect in which the same distinction arises is in the supremacy of the police power over the rights of private property. To provide for mutual confidence in the conduct of business is, according to a recent decision, within this power. That is, public good and general welfare do not mean merely the public in corporate capacity: they include the maintenance of social relations. The principle seems eminently sound to one who holds to the doctrine of a common good, but whether it is accepted or not, such cases afford excellent opportunity to show clearly what is involved.

The obvious difficulty in the way of using legal material is that the teacher of ethics has ordinarily had no legal training and is therefore liable to mislead if he cites a principle or a case which may need qualification by other principles or cases. This difficulty no doubt is serious, but such works as Goodnow's "Social Reform and the Constitution," and Freund's "The Police Power," used in connection with the source books for constitutional law, enable even the layman to find material and see it in its broad relations.



## DISCUSSION

MR. SCHILLER'S LOGIC<sup>1</sup>

PEOPLE who are trying to teach formal logic ought to read Mr. Schiller's book. It is a loud statement of all their difficulties, and will give them somewhat the same comfort that profanity would. It will also give them at least one piece of good news, even though they may not accept the main thesis. The main thesis is that all their "difficulties" arise from the fact that "It is *not* possible to abstract from the actual use of the logical material and to consider 'forms of thought' in themselves, without incurring a total loss, not only of truth but also of meaning." The piece of good news is independent of that dogma, however. It is this—that logic is *either* dead, in which case it is some day going to be buried, or *else* alive, in which case it is some day going to begin to grow.

This would not appear a great piece of news to persons of outdoor intelligence; but to the custodians of formal logic it will come like a child to the barren. After all these years something may yet happen some day; that is the great affirmative message of Mr. Schiller's book. And he backs it up, as it would need backing to convince anybody, by some very cogent arguments. I recommend especially a brilliant chapter on "The Laws of Thought," and one on "The Theory of Ideas," which concludes as follows: "If logicians had taken the precaution of examining the psychological process of judging before constructing their theories, they could hardly have failed to observe that the characteristic features in our intelligence are not 'things' but *processes*. Perception is a process, thinking is a process, meaning is a process, attention is a process, and 'ideas' are—a misinterpretation of processes. . . . The right name for the theory of 'ideas' is the theory of judgment."

These are the statements that give us hope either of the burial or the growth of logic. Mr. Schiller advocates its burial, but I expect its growth. I do not see why logic should not enter into the great change with all the other topics, one by one, since Darwin—or since, in the last century, we all recovered from the "madness" of the "friends of ideas," and returned to the more healthy wisdom of Heraclitus. And it is because I believe this that I wish to make more than a review of Mr. Schiller's book. I wish to oppose it from the standpoint of an hypothesis about knowledge, not deeply different from his own. I wish to prove, indeed, that that hypothesis (which puts value above truth) does not involve the acceptance of Mr.

<sup>1</sup> "Formal Logic: A Scientific and Social Problem," F. C. S. Schiller, M.A., D.Sc. London: Macmillan and Co., 1912.

Schiller's dogma about formal logic—any more than it involved a real acceptance of Mr. James's books about "Pragmatism," great and originating as they were. It does involve, in fact, and ultimately depend upon, a more sustained scepticism of intellect than any of these books reveal.

If knowledges are the successful postulates for specific purposes, of uniformities in experience, as Mr. Schiller professes to believe they are, then his method of attack upon the knowledges of logic is profoundly wrong. It is indeed intellectualistic, absolute, and academic.

In his introduction he declares that it is necessary to pull down this "pseudo-science" of formal logic before it will be possible to build up a logic of science and practical life. And is that not the typical academic assumption that fills our libraries with rubbish and gas? Everybody who thinks in our day, thinks about books, and that is the whole reason for the inferiority of our thoughts. Why must the logic of our science and practical life be but a negative graft upon the logic of Greek science and practical life? Their logic was great and dominating because it was a study of experience; our logic is petty and inconsequent because it is a study of their logic. I should say that it will be impossible for any one to build up a logic of science and practical life, after he has corrupted his mind with all the scholarship necessary to an elaborate attack upon the logic of the past.

Only because he leads off with this conventional assumption that no new knowledge can be created except in relation to the knowledge which is now respectable, does Mr. Schiller find himself under the necessity of proving a relation of entire contrariety. He finds himself under the necessity of establishing his negative dogma, that formal logic is "incoherent, worthless, and literally unmeaning." But to condemn an early science for its incoherence is intellectualistic in the extreme. And to declare any knowledge which, by his own confession, has lent support and satisfaction to the undertakings of intellect for many centuries "literally unmeaning," is not wise in one who intends to support his attack with such a description of meaning as Mr. Schiller gives. It is not wise in one who intends to declare that "an exhaustive catalogue of the meanings of judgments . . . would involve a reference to the actual context, and a psychological study of each assessor's state of mind" (p. 135).

In one place, indeed, Mr. Schiller himself pays an unconscious tribute, both to the meaning and to the *true* meaning of his pseudo-science, for he says: "The mistake was pardonable in Plato, who . . . lived before Aristotle had discovered the Syllogism; it is inexcusable in philosophers who . . . professed to have studied and grasped Formal Logic" (p. 345). The truth is, it is as hard for an academic



mind to adopt the philosophy of outdoor wisdom, as it is for a camel to enter into the kingdom.

Nevertheless, if Mr. Schiller's eyes were wholly open to this great, democratic, and system-wrecking philosophy he has got hold of, and if he had made a deliberate effort, I believe he might have applied it with profit to a negative criticism of formal logic. He might have asked himself: What are the uniformities postulated by this knowledge; to what purposes were they, and are they, relevant; and to what extent do they lend themselves to these purposes? And by this means he might have wrought a great service to the memory of Aristotle, even if no more living enthusiasm could be furthered in these days of open revolution, by a "radical reform of the Predicables."

Had he approached it in this equilibrium of mind, he would not have been compelled, like a prosecuting attorney, by the intellectual purpose that retained him, to make logic appear at its very worst. This logic Mr. Schiller writes of, having no real definition of the word "formal," no demarkation between formal reasoning and scientific induction, no separate recognition of probability, containing such expressions as "valid conclusion," "formal truth," and professing to be a complete account of "actual thinking," or "real reasoning"—such a logic was forgotten many years ago in the little college where I studied. It does not require a humanist, but only a man of sound mind, to perceive the purely honorific value of an expression like "formal truth." I can not speak for Oxford, but, in those parts I can speak for, a great deal of the logic which Mr. Schiller annihilates did not exist.

But a logic did exist, and does still, which, although containing many truths that are relevant to human purposes, is in sad confusion with itself, having been once too proud and having suffered a humiliation at the hands of science, and not knowing now to what purposes its truths are relevant, nor which truths to which purposes. If Mr. Schiller had approached this logic with the humble questions which his own definition of knowledge suggests, he might have drawn some conclusions which would themselves have been humbly relevant to the purposes of education, and therein true.

Perhaps the chief of these conclusions would have been this: that all the part of logic properly called "formal" is an austere development of the standard of consistency in generalization, relevant especially to the purposes of argument, but also furnishing one of the many ideals of science and practical life.<sup>2</sup> The standard of con-

<sup>2</sup> On page 309 Mr. Schiller speaks of "*the true ideal of science,*" again revealing his own failure to adopt the philosophy of specific purposes. (Italics are mine.)

sistency is never once mentioned throughout Mr. Schiller's book, except when its value and relevance to science are *assumed* for the purpose of condemning the inconsistencies of the logic he attacks. And it is only because of this silence, I believe, that he was able to write the first half of his book at all—or plausibly enough to pass the eye of the printer.

The ideal of consistency in generalization, or the purpose (we might say) to "abstract from the actual context in which [general] assertions grow up, viz., the time, place, circumstances, and purpose of the assertion and the personality of the assertor,"<sup>3</sup> in order to discover whether the said assertions can be foredoomed to success or failure by comparison with other assertions already established, the energy of experiment thus being saved,—did not come into the world with Aristotle. It came into the world with the beginnings of conversation. And it was not first formulated by Aristotle either, but by a man of greater natural wisdom if less scholarship, Heraclitus. He could see the eternal change of purposes (as well as things), and yet declare the eternal value of abstracting from them, the eternal value of the ideal of consistency, or rationality, or the common, in a flux of opinions. In that vision the true formal logic had its birth, and in that it will have its regeneration. Formal logic is not, as Mr. Schiller presents it, a denial of the pervasiveness of emotional purpose, but it is an affirmation of it, and a caution on account of it, and a system of standards for making that caution effective. If a man with *specific* purposes makes a *general* statement (even though that man should be yourself) distrust him. Test him by the standards of consistency. That is what the "formal" chapter in a reborn logic probably will say.

And it will reassure those who believe this, to observe that almost every instance which Mr. Schiller adduces of "extra-logical" thinking, does not concern a general, but a specific assertion.<sup>4</sup> The conclusion from all these instances, therefore, is that the standards of formal logic relate to generalization and abstract argument, not that they relate to nothing actual at all. They relate particularly to such a work as Mr. Schiller's, and we can not say that tested by them it would always stand. In many passages his thinking falls too far away from an ideal consistency to hold a mind that has been disciplined by Aristotle.<sup>5</sup>

<sup>3</sup> This is Mr. Schiller's own derisive description of what formal logic tries to do (page 374).

<sup>4</sup> Cf. pages 10, 13, 88, 129, 186, and many others.

<sup>5</sup> I quote this foot-note from page 257, as a brief, and, I think, glaring example of the kind of sophistry that formal logic would condemn forever. It is a misinterpretation of, or what is worse a misinterpolation in, a quotation from Mill.



It may be that this discipline in its regenerate form will not contain much of the syllogism. And yet, to one who understands the nature of the test he is applying, it need not appear ridiculous to shift his general statements into various rigid forms. It is but a scientific development of the common-sense procedure of saying, "Now sit down, and let us find out exactly what you mean!" It is useful when there is earnest doubt about one's reasonings, or when one is teaching to a child the ideal of consistent thought. In education, and in genuine doubt, our ideal standards<sup>a</sup> become relevant, and it is not impossible to make any of them appear ridiculous, by dragging them in at inappropriate times.

Mr. Schiller himself has declared (p. 222) that the syllogism "still retains an important critical function. . . . To put an argument in syllogistic form is to strip it bare for logical inspection." But he has slipped over with the art of a thimble-rigger that word "logical." What is "logical inspection," indeed, if it is not inspection as to consistency with other generalizations established at other "times," or other "places," in other "circumstances," for other "purposes," or by other "personalities"? That is what Heraclitus recommended. That is what, besides perfecting argument for its own sake, the exercises of formal logic seek to effect. Even for that function, they need improvement, *but the chief improvement that they need is a definite determination to that function and no other*. And this they will never acquire through a criticism that is conducted in the all or nothing method of the church and the academy.

There are two ways in which philosophers contribute strength to the new theory of knowledge. One is to write books which, al-

" 'There is no science which will enable a man to bethink himself of that which will suit his purpose. But when he *has* thought of something' (which '*will* suit his purpose' presumably!) 'science can tell him whether that which he has thought of will suit his purpose or not.' *I. e.*, when he has found out without logic, logic can tell him he has done right! What admirable caution! And yet how true to all Formal Logic."

When irreverent critics are at the same time careless, formal logic is well able to take her own revenge upon them. And she takes it with peculiar sharpness upon Mr. Schiller, just as he is "disposing of" the last of the material fallacies. It is the fallacy of "Many Questions." And no sooner has he got it thoroughly "disposed of," no sooner has he well laid it down that there should not be any such fallacy, than he is moved (surely by the devil himself) to add in a foot-note: "Why should there not be a Fallacy of the Unmeaning Question, etc., *as well as* of Many Questions?" The italics are mine—or they are Aristotle's!

<sup>a</sup> This is recognized in regard to mathematics, and the reason given is that mathematics more readily concedes its ideal character (cf. footnotes, pages 249 and 320). This might have suggested that the real fault in logic is not that it exists, but that it does not concede its ideal character.

though they make the old profession of absolute verity, reveal to scrutiny the control of a specific purpose. Mr. Schiller's book is of this kind. The other way is to write books which profess their purpose and present their verity as only relative to that.<sup>7</sup> They exemplify not only the fact of how our thought proceeds, but also the ideal for its procedure, which rises from a recognition of the fact. They face their own music. And they are more different from the others, than the new theory is from the old. The control of thinking by a purpose unavowed is prejudice or hypocrisy, but the control of thinking by an avowed purpose is wisdom itself.

And in his chapters on "Induction," Mr. Schiller sometimes achieves wisdom. He forgets the ever-hidden purpose of the dogmatist, and simply endeavors to generalize the facts of scientific procedure toward his own avowed hypothesis about knowledge. The chapters on "Causation," "Laws of Nature," "The Forms of Induction," "The Problem of Induction," The "Social Effects of Formal Logic," are of high value. In them one finds many passages where, to use the language of the author's own ideal, "postulation occurs with a clear consciousness of the scientific nature of its aims," and "the reasoning will be found to run somewhat as follows: 'I have made such and such observations and they *could* be generalized in such and such ways; of these this one would be the most convenient . . .'" (p. 243).

These passages—interrupted though they are by others where postulation occurs with obscure consciousness of the aim to establish at any cost an academic dogma—are so excellent and forceful in themselves, that for them, even more than for the other reasons I gave, I think this book ought to be read by all who teach logic.

And let them be both perspicuous and merciful in the reading, and not reject the value theory of knowledge, merely because the author so little succeeds in exemplifying it. Few philosophers, to say nothing of scholars, will ever succeed in that. For the theory strongly opposes that intellectual gullibility which makes philosophy possible. There is a kind of noble paradox between believing it, and even stating it as true. It posits a heroic doubt, not only as the first, but also as the last condition of the mind that seeks to know.

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<sup>7</sup> John Dewey's "How We Think," which I reviewed in this JOURNAL, Vol. VIII., page 244, is—so far as I know—the only book of this kind that has come from the hands of those who hold the new theory of knowledge.



## REVIEWS AND ABSTRACTS OF LITERATURE

*Body and Mind: A History and Defense of Animism.* WILLIAM McDUGALL. New York: The Macmillan Company. 1911. Pp. xix + 384.

This book is a hark back to an earlier generation of theorists. It is avowedly and frankly a defense of an animistic mind and is based upon religious and political arguments that one would expect from Cardinal Richelieu. In the preface it is asserted that the animistic mind is the only assumption from which arguments for immortality can be made, and that while superior minds, such as the author's own, can be comfortable and desire morality without belief in immortality, upon that alone can a general and popular morality be based. It is particularly interesting as coming from the author of the "Primer of Physiological Psychology."

The earlier chapters of the book are historical and describe the different ways of conceiving mind and its relation to the body that have been held from primitive times to the present. Then follow a series of chapters in refutation of the different automaton theories and the various forms of monism. The outcome of these arguments is that the only alternatives open to-day are to accept animism or psychophysical parallelism. Some of the alternatives are eliminated through showing that they involve solipsism, others because they assume the compounding of the unitary mind out of simpler elements. This section is full of hair-splitting arguments that depend upon skill in assuming premises that shall be incompatible with the conclusion it is desired to refute. The historical section is very full and gives an accurate summary of doctrines.

The next group of chapters is devoted to a refutation of parallelism in which much use is made of the arguments of Busse. Here begins the development of the characteristic argument of the book, that whenever we do not know what the physical or chemical explanation of an event may be, it is necessary to turn to mental forces for an answer to our questions. Large use is made of an adaptation of Busse's argument based upon the great difference between slight verbal differences in a telegram, the difference between *angekommen* and *umgekommen* in Busse's example, which is given many different applications by McDougall. Similar arguments would require a soul for each complex molecule in organic chemistry to explain the numerous cases in which a different arrangement of the atoms gives a substance with very different physiological effects. "Inconceivable" plays a very large part in this chapter as a synonym of "not yet known."

With many repetitions this is the argument for animism in all of the later chapters. The author goes with the neo-vitalists in arguing that one can not yet explain all of the biological processes by pure physical and chemical processes, hence there must be entelechies that produce them. One can not understand, on the basis of the present knowledge of cerebral physiology, how various sensations may be compounded into objects or ideas, hence the compounding must take place in the unitary soul.

We have no physiological correlate for meaning, although we know that associations have nervous correlates, hence meanings belong in the soul, while associations are in the nervous system. We can not understand why pleasant movements should be retained while unpleasant ones tend to be dropped, therefore feelings belong to the animistic mind, while movements themselves are physiological reflexes. Logical memory has marked advantages over rote learning. It is alleged that these advantages are not to be explained in terms of physiology, therefore logical memory must be the product of a simple mind. Similarly the results of psychical research and telepathy can not be understood in terms of parallelism and hence must be explained on the basis of an animistic mind. It will be noted that each of these is a positive conclusion drawn from negative premises. If the author were to attempt to carry out the explanation of these different phenomena on the assumption of an animistic mind the results would probably be much less satisfactory to him, and one may venture to say even less satisfactory than the current explanation.

It is very interesting to see the swinging of the pendulum in scientific fashions. Forty and fifty years ago under the lead of Darwin, Huxley, and Clifford science became convinced that teleology and entelechies could give no real explanation, but only words. The swing was to science. Now after forty years science has reached an *impasse* on many of the fundamental problems and the swing is back toward teleology. In each case the determining arguments are negative, furthered by the hope that some progress may be made along lines that have already shown results. One must insist however that McDougall does not show in detail how his animistic mind is to be in any way a solution for the problems which he asserts can not conceivably be solved by scientific methods. Even his unitary consciousness is altogether a name. Conation solves certain problems, feeling certain others, meaning still a third set, and logical memory its share, but what the relation may be between these different forces or functions he leaves altogether in the air. In each case he has funded our ignorance, given it a name, and calls it an explanation. It is interesting as a study in logical method to notice that he exactly reverses the ordinary and what seem to the reviewer the plausible arguments without any signs of a qualm. Thus one ordinarily brings in habit to explain by the nervous activity the possibility of carrying on a complicated act like talking without conscious thought of separate movements. Our author in one passage asserts that a whole congress of physiologists could not carry out adequately the coordination of movements required for a single simple act. He would find the explanation not in habit or the efficiency of the nervous system, but in the wonderful power of the unitary mind. Apparently the congress of physiologists does not stand for mind.

When in the concluding chapter our author attempts to say what mind is or how it accomplishes its wonders, he is much less successful. He will not accept the statements of Bergson and James or of any contemporary defendant of soul or mind. The description is largely of what the mind is not. In a brief summary he does state vaguely that mind is a force



that is everywhere present in the organism. It presides over the process of generation from the moment of the fertilization of the ovum; it looks after the various movements of digestion and reflex action, as well as governing the highest functions of mind. These functions are the perquisites of different grades of mind, but how they unite or interact is not said. All is delightfully vague.

As a presentation of animism in historical and current form the work is well done, but one who reads it feels that the explanations offered are no explanations. Between the two alternatives of teleology or mechanism there is no decision on basis of fact. The only answer to the fundamental problems they raise is at present "we do not know." The advantage of mechanism over teleology is that the former offers a hope of a solution in the end, while the latter merely gives up the problems and glosses over our ignorance with words like mind, entelechy, vital force, or what not that explain nothing, but pretend to. The hope of scientific advancement lies in continued analysis and investigation rather than in the hypostatizing of unanalyzable and incomprehensible entities.

Lest one should be misled by the statement of disagreement with the conclusions and methods of the author, it should be emphasized that the book is a real contribution to the topic discussed. The material is well chosen and accurate in its statement of the views of others, and is excellently presented. The proof-reader has been careless at times, and there are minor mistakes. Professor McGilvary appears as Miss in one place, for example.

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*Nietzsche.* PAUL ELMER MORE. Boston: Houghton, Mifflin, and Company. 1911. Pp. 87.

The author of this essay on Nietzsche is evidently one of those men of letters who have not sensed that fundamental distinction between philosophers—between the thinker of cool, logical, careful temperament who is stirred to action only by the thoughts and systems of other men, and spends his time in solving problems that others have set for him—and the gigantic, incalculable thinker, who reacts violently and directly to his spiritual environment, and whose work is not the neatly-ordered next step in a process, but an individual explosive interpretation of life. No one can deny that Nietzsche is emphatically a philosopher of this latter type, but Mr. More has treated him as if he were numbered among the former.

Devoting one third of his book to a sketch of the gradual evolution of the ideas of egotism and sympathy from Hobbes through Locke, Mandeville, Hume, and Rousseau, he has forced Nietzsche into this polite scheme as the culminating figure, as a mere reaction against the sentimental absurdities of romanticism. But to get him in, he has had to do such violence to the spirit of Nietzsche as to prune away much that is really significant in him. Such an attempt to explain a genius like Nietzsche simply will not do. It was not the dainty sentimentalism of the eight-

eenth century or the amiable humanitarianism of the Romantieists that roused the fury of Nietzsche, not any fashionable theory of an age that filled his soul with gall, but something far more elemental—the spirit of an European civilization stretchng out behind him, reeking, as he thought, with a slave-morality, and stretchng out in the future ahead of him, degenerate with the poison of a levelling democraey. It was in the heated days of Marxian Socialism that Nietzsche's early days were spent, and Marx derived not from any British ethicists or French romantieists, but from a materialized Hegel; German Socialism was, from the first, economic and materialistic, not ethical. And Nietzsche made this materialism thoroughly his own, while reacting against the implications that outraged his curiously complex character of fierce pride and temperamental weakness. His innate aristocracy was outraged by the menace of industrial democraey, remorselessly working itself out by evolutionistic laws, and his passion for power and strength was insulted by the sacrificial ethics of Christianity. No neat Hobbes-Loeke-Hume-Rousseau dynasty of thought could have inflamed that passionate moral anger; it took the vision of a gradual degradation of power and genius to one mediocre level to madden him. It was not the silly tears of Sterne or Henry Brooke that made him trample on the "Sermon on the Mount," but a patient, apathetic Christian civilization. No one can understand Nietzsche who does not feel these two world-spirits, against which he hurled his strength, or see in his philosophy a sort of world-projection of himself out upon European civilization, past, present, and to come.

No one would recognize in the shrunken, froek-coated Nietzsche of Mr. More the wild blasphemer who, a prey to the morbid fascination which makes us imitate the thing we loathe, wrote his best works in the sublime style of the Gospels, at the same time that he touched with ruthless hand the weakest spots of Christian ethics. The author even has the suggestion of an apology for Nietzsche's audacities, and a little patronizing pity for his rage: how Nietzsche would have hated being apologized for or pitied! The author shows his sympathy with the Nietzschean spirit, however, in passages such as these: "He [Nietzsche], too, saw the danger that threatens true progress in any system of education and government that makes the advantage of the average rather than the distinguished man its first object," and, "It would be possible to establish from statistics a direct ratio between the spread of humanitarian schemes of reform and the increase of crime and suicide."

The author has much to say of the effects of naturalism on the modern world, and his wholesale merging of humanitarianism, social reform, socialism, romanticism, and naturalism, as equivalent and interchangeable terms, while sometimes ingenious, is not especially convincing. Nietzsche was the most naturalistic of philosophers, and if romanticism and naturalism are kindred expressions of a lawlessness and lack of restraint and limitation, as Mr. More assumes, it is hard to fit Nietzsche into his scheme as the arch-anti-romantieist. Similarly, the implication that Nietzsche is somehow a prophet of concentration and rationality, of order and



serene art—the ideal of all who oppose the extravagancies of modern culture—is difficult to reconcile with anything we know of Nietzsche's works. Modern Socialism, too, which Mr. More lumps with romanticism and humanitarianism, is most materialistic, and bases its philosophy on the doctrine of evolution. These facts make Mr. More's use of the categories less suggestive than they might have been had he been dealing with a less original genius than Nietzsche, who defies classification or interpretation in conventional terms. The inconsistencies into which the author is led are proof that such a placing of the philosopher is really irrelevant.

It is natural that the man who translated all values should trail paradoxes after him. The most glaring of these is that the supermen of to-day are practising and professing Christianity; while the most brilliant Socialists are preaching Nietzscheanism. For our industrial barons, our business geniuses, are practising an undiluted ethics of power and ruthlessness, and professing the mild and sacrificial ethics of Jesus. That is, Nietzsche has expressed perfectly the working philosophy of an age; some of his works read almost like a satire on modern industry looked at from the point of view of the masters. And yet he has inspired the social philosophy of some of the most resourceful of the leaders who are trying through Socialism to overturn that mastery. For besides Mr. More, Nietzsche numbers among his disciples Mr. Bernard Shaw, and consistently. For Mr. Shaw says simply, Let us all be supermen! A world of men longing to be supermen would soon free itself! If that unorganized mass of people that we call with such unconscious self-satirization "the working-classes," could be filled with the will to power, the salvation of society, Mr. Shaw says, would be at hand. And in this, Mr. Shaw is a better prophet of Nietzsche than is Mr. More. For would not Nietzsche have gloried, had his pessimism permitted him to think it possible, in a *race* of supermen?

Thus, ignored by his consistent followers, the modern business men, enthusiastically hailed as prophet by his enemies, the Socialists, and deprived of what he believed to be his sound scientific basis of Darwinism—the doctrine of the survival of the fittest—by changing evolutionary theory, Nietzsche occupies to-day a curiously anomalous position. The divergent effects of his philosophy indicate his place as a creative thinker; his influence will grow rather than wane. And we may be sure that he is more fruitful, more stimulating and profound, than would appear from the interpretation and point of view which are presented in this little book.

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*Lectures on Fundamental Concepts of Algebra and Geometry.* JOHN WESLEY YOUNG. New York: The Macmillan Company. 1911. Pp. vii + 247.

The philosopher who wishes to become acquainted with the mathematician's point of view concerning the foundations of mathematics, and

who perhaps has been discouraged after trying Russell's "Principles" and Whitehead's and Russell's "Principia," will find Professor Young's lectures an ideal medium of introduction. Symbols and difficult technical matters are kept in the background in order to emphasize, in a very stimulating style, ideas that are general and fundamental. Only the elements of algebra and geometry are presupposed.

From a purely logical standpoint, a mathematical science is defined to be "any body of propositions which is capable of an abstract formulation and arrangement in such a way that every proposition of the set, after a certain one, is a formal logical consequence of some or all the preceding propositions." Mathematics includes potentially all such sciences. Each science is thus based on certain undefined terms and unproved propositions (axioms or postulates). Questions of psychological genesis or metaphysical import are outside the mathematician's domain.

The rôle of definitions and axioms and the problems of consistency, independence, and categorical character of a system of axioms are explained very clearly by a "miniature mathematical science" in Chapter V. The author then takes up the notions of class and number, including the development of ordinary and higher complex number systems. Geometry is treated first according to Hilbert's theory, in which the notion of congruence is undefined, and then according to Pieri, rigid displacement and groups being fundamental. The final chapters deal with variables, functions, and limits, but calculus and its developments are not treated. A note on the growth of algebraic symbolism is contributed by Professor V. G. Mitchell.

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## JOURNALS AND NEW BOOKS

RIVISTA DI FILOSOFIA NEO-SCOLASTICA. April, 1912. *La filosofia di Benedetto Croce* (pp. 185-202): E. CHIOCCHETTI. - Croce's philosophy starts from the systems of Hegel and of the Italian Spaventa, of which it may be regarded as a development. *Il valore dell' introspezione provocata* (pp. 203-225): A. GEMELLI. - In spite of Wundt's objections, provoked introspection is legitimate in its procedure, and most fruitful in its results. *Sigieri di Brabante nella Divina Commedia e le fonti della filosofia di Dante* (pp. 225-239): B. NARDI. - Dante did not ignore Siger of Brabant's philosophy. If he gives him a place in the Paradise, by the side of St. Thomas, it is because he regards him as one of the great thinkers of the day. *Note e discussioni. Cronaca scientifica. Analisi d'opere.* M. Losacco, *Razionalismo e misticismo*: A. GEMELLI. A. Pagano, *L'individuo nell' etica e nel diritto*: F. OLGATI. C. Ranzoli, *Il linguaggio dei filosofi*: A. MASNOVO. G. Molteni, *Il materialismo storico e la nuova storiografia*: G. TREDICI. P. Rotta, *Il pensiero di Nicolo da Cusa ne' suoi rapporti storici*: A. MASNOVO. G. Gentile, *Bernardino*



*Telesio*: A. CUSCHIERI. G. Amendola, *Maine de Biran*: E. CHIOCCETTI. D. Halévy, *La vita di Federigo Nietzsche*: F. OLGIAI. G. Calò, *Fatti e problemi del mondo educativo. Tra riviste e libri. Sommario ideologico*.

REVUE PHILOSOPHIQUE. April, 1912. *Les idées directrices de la physique mécaniste* (pp. 337-366): A. REY. - A current doctrine insists that science only establishes external relations of things and contains only technical, empirical formulas. The author attempts to show by positive historical fact that science has developed through a mass of realistic and rationalistic conceptions, *i. e.*, philosophic ideas, and can not be understood apart from them. *La psycho-analyse appliquée à l'étude objective de l'imagination* (pp. 367-396): N. KOSTYLEFF. - A study of the results that have been obtained by applying the methods of Freud to the study of imagination, especially in abnormal cases. *Le raisonnement par l'absurde et la méthode des résidus* (pp. 397-403): A. BERROD. - A psychological study of *reductio ad absurdum* and the *method of residues*. *Analyses et comptes rendus*. Ranzoli, *Il linguaggio dei filosofi*: FR. PAULHAN. Dr. Gustave Le Bon, *Les opinions et les croyances*: G. DAVY. Bruegilles, *Le droit et la sociologie*: G. RICHARD. Miceli, *Lezioni di filosofia del diritto*: G. RICHARD. Petrone, *Il diritto nel mondo dello spirito*: G. RICHARD. L. Secrétan, *Charles Secrétan, sa vie et son œuvre*: A. NAVILLE. *Notices. Bibliographiques. Revue des périodiques étrangers*.

Macran, H. S. *Hegel's Doctrine of Formal Logic*. Oxford: Clarendon Press. 1912. Pp. 315. 7s. 6d.

Whitehead, Alfred North, and Russell, Bertrand. *Principia Mathematica*. Vol. II. Cambridge: University Press. 1912. Pp. xviii + 772. \$10.

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## NOTES AND NEWS

THE *Nation* comments as follows on Andrew Lang whose death occurred on July 21: "Andrew Lang deserved in his lifetime to rank with William James as a vivid proof that personality is more than learning. A man of solid attainments in several branches of knowledge, he was always superior to his material, and, whether he was deep in early Scottish history, or meeting all comers in disputes about the origins of human society, or correcting Anatole France's use of the sources relating to Joan of Arc, he allowed his intellect to play freely and lightly, and could by no possibility be thought of as a pedant. And in the broad sweep of his verse and criticism and essay writing and multifarious discussion, it was always the man of genial humor and wit that left no sting who impressed himself upon the imagination of his readers. In a large way, his extraordinary versatility and his prolific pen were doubtless a detriment to his enduring fame. It would not be fair to say of him that knowledge was his forte and omniscience his foible, but the witticism about him, that

Andrew Lang was not a man but a syndicate, is hardly one that a great scholar would gladly hear of himself. Roam broadly as an acquisitive mind may to-day, the specialization of the whole field of knowledge compels a certain *Beschränkung* on the part of those who would display real mastery. Harnack's opinion is that in 1700 the most encyclopædic mind was that of Leibnitz, and that in 1800 it was Goethe's. For 1600, we might say that it was Bacon's, but whom should we dare put forward for 1900? Possibly, Lord Acton, though there were vast ranges of knowledge—especially scientific—where he seldom browsed. The encyclopædic mind has necessarily gone out, by comparison. Mr. Lang really made no pretensions to possessing it. But he lighted up history and speculation and life at many points, and led thousands to feel that he was a man whom it would be delightful to know."

ALFRED FOULÉE, member of the Academie des Sciences morales et politiques, died at Lyons, on July 16. He was born at La Pouëze in 1838. Among his numerous philosophical works perhaps "*Morale des Idees-forces*" and "*La Pensée et les nouvelles écoles anti-intellectualistes*" best illustrate his own philosophical tendencies.

PROFESSOR WILBUR M. URBAN, of Trinity College, has been granted leave of absence for a year. He will spend much time in Graz in study and investigation with Professor A. Meinong. Mr. Carl Vernon Tower will take his place at Trinity during the year.

A MEETING of the Aristotelian Society, London, was held on July 1. Mr. D. L. Murray read a paper entitled "A Modern Materialist: A Study of the Philosophy of George Santayana." The paper was followed by a discussion.

DR. JOSEPH JASTROW, professor of psychology in the University of Wisconsin, has given three lectures on "The Sensibilities," "The Emotions," and "The Appraisal of Human Qualities," at the summer session of the University of California.—*Science*.

DR. WALTER F. DEARBORN, professor in the school of education at the University of Chicago, has been appointed assistant professor of education at Harvard University.

DR. HARLAN UPDEGRAFF, of the United States Bureau of Education, has been appointed professor of education and head of that department in Northwestern University.

DR. MORRIS R. COHEN, formerly instructor in mathematics, has been promoted to assistant professor of philosophy at the College of the City of New York.

PROFESSOR DÜRCK, formerly director of the pathologic institute at Jena, has undertaken the direction of the pathologic institute at Rio de Janeiro.

DR. H. G. HARTMANN, of Columbia University, has been appointed instructor in philosophy at the University of Cincinnati.

DR. GEORGE R. WELLS has been appointed instructor in psychology at Oberlin College.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE CAUSAL RELATION BETWEEN MIND AND BODY

#### I

ALL readers of this JOURNAL will recall William James's description of the diverse "Worlds of Reality" in his larger "Psychology,"<sup>1</sup> and will remember that he refers in some detail to seven such worlds: the worlds (1) of sense, or of physical "things" as we instinctively apprehend them; (2) of science, or of physical things as the learned conceive them; (3) of ideal relations; (4) of "idols of the tribe"; (5) of the supernatural; (6) of individual opinion; (7) of madness. "Every object we think of," he tells us, "gets at last referred to one world or another of this or some other list." To the "worlds" in his list, I would add the important "worlds"; (8) of immediate experience as introspectively recalled; and (9) of "reflection upon this immediate introspective experience"; as well as (10) the "world of dreamland"; and (11) the "make-believe world of imaginative discourse."

In this manner of thought it is apparent that James was not dealing with the concept of reality, but rather with the appreciation of realness, or presentative stability, upon which this concept of reality is based; and for this reason I have suggested<sup>2</sup> that we gain a better idea of his meaning if we speak of diverse "realms of realness" instead of "worlds of reality" as he did; for the significance of the point he made lies in the fact that given mental items, or presentations, may be included in more than one of these realms, "the whole distinction of real and unreal," as he says,<sup>3</sup> "the whole psychology of belief, disbelief, and doubt" being "grounded on two mental facts;—first, that we are liable to think differently of the same" (mental items); "and secondly, that when we have done so, we can choose which way of thinking to adhere to and which to disregard."

<sup>1</sup> Vol. II., pages 291 ff.

<sup>2</sup> "Consciousness," pages 231 ff.

<sup>3</sup> *Op. cit.*, page 290.

In other words these diverse realms of realness are in fact diverse noetic systems in which certain specific mental items appear, and are of such a nature that what we call "the same" mental items may appear in several systems, and may be real in one system while very unreal in another.

That these worlds are as diverse as James teaches is not always evident. To be sure it becomes apparent that his statements are justified when, for instance, we compare the "world of dreamland," or the "world of imaginative make-believe," with the "world of sense" of every-day waking experience: or when we compare this latter world of every-day experience with what James called "the world of ideal relations, or abstract truths believed or believable by all": or again, when we compare this "world of sense" with that of "immediate experience as introspectively recalled," or with that of "reflection upon this immediate introspective experience." But it is not so evident that a significant diversity exists between the "world of sense, or of physical things as we instinctively apprehend them," and the "world of science, or of physical things as the learned conceive them." In fact these two "worlds" do not seem to the average scientist to be separate worlds at all; and even when, led by such suggestions as that given by James, he begins to consider them as diverse, he is likely to think of the "world of science" merely as a purer form of the "world of sense."

That the diversity of these two worlds is thus overlooked is accounted for, as we shall presently see, by the fact that there is a very special bond between the two. Nevertheless if we study their natures with care we soon become convinced that they are justly judged to be as diverse as any of the other worlds above referred to.<sup>4</sup>

"The diversity between the "world of science" and the "world of sense, or of physical things as we instinctively apprehend them," is clearly seen when we consider the concept of mechanism in the form in which it is generally accepted in our day, and which dominates our "world of science."

This concept of mechanism is evidently one that is based primarily upon the study of motions of inorganic bodies and has become established because it serves our purpose in coordinating many situations observable in the material world in which we live; and in maintaining it in relation to the inorganic world we choose to overlook many of the characteristics observable in these natural bodies and their relations as they are given in the "world of sense."

For instance, because it serves our purpose in taking this view, we choose to assume the existence of an ethereal medium, and agree to overlook the fundamental contradictions involved in the very nature of this medium as conceived, as well as the fact that its characteristics transcend, and are even incompatible with, experiences that are familiar to us in our observation of the "world of sense." In like manner we choose to overlook the difficulties connected with the conception of potential energy and with the distinction between kinetic and



## II

As James says, the whole distinction of real and unreal is grounded upon the fact that these diverse "worlds" exist; that what we call "the same" mental items may appear in two or more different "worlds"; and that these mental items may be very real in one "world" while very unreal in another. The ether which is very real in the "mechanistic world" of the physicist is quite unreal in the "world of sense," if judged by the canons of every-day experience. The rising of the sun is very real in the "world of sense," but very unreal in the astronomer's "world of science." Certain items, and the relations between them, appear fully real in our "dreamland world," and in the "make-believe world" of the constructive imagination, which would be cast aside instantly as unreal in the world of every-day experience.

Such being the case, it seems clear that we can not properly draw conclusions in one "world" from premises in a diverse world; nor employ concepts derived from data given in one "world" within a quite diverse "world," without logical danger.

potential energy, which latter can not be said to be more than a name devised to describe the absence of all signs of energy. Again we choose to overlook the problems relating to the basis of the transformation of energy from potential to kinetic forms, and *vice versa*, as well as the more fundamental problems arising when we attempt to account for the existence of diverse forms of energy, and look for the basis of the transfer from one form to another. Beyond this we overlook the difficulties connected with the assumption of a closed energetic system, as well as those connected with the assumption of a beginning of the conditions that have led to present situations.

All these are difficulties and inconsistencies overlooked when we build up the quite artificial "world of mechanism" as a mode of interpretation of the phenomena observed in the inorganic world. When we turn to the study of organic life we again note motion followed by motion, and are again tempted to take a mechanistic view. But a new difficulty arises here in the fact that vital energy appears diverse from all other forms of energy. Even if this vital energy is finally shown to be resolvable into the forms found in the inorganic world, which have given rise to the mechanistic conception, the same problems above referred to in considering that conception must be overlooked if we are to make the conception work, and a new one in connection with the attempt to account for the basis of the rise of the vital energy form. In organic life, moreover, we find a new formidable difficulty in the existence of the capacity of inheritance; but especially of the capacity of variation involved in the development of one form from another, which, as Stout says, is as important a fact as inheritance.

All this shows that we are dealing with a very artificially restricted conception when we picture the universe in terms of energy, or of motion followed by motion. In other words, we are choosing to dwell, for the time being, not in the "world" of every-day experience, but in what, from the standpoint of this every-day experience, is a "make-believe world," just as much as the imaginative "world" of "Alice in Wonderland" and the "world" of the shadow pantomime are "make-believe worlds."

When we witness a shadow pantomime we live for the time being in a "world" where real situations do not correspond with real situations in the "world of every-day experience," and we should not for a moment think ourselves warranted in concluding, because the shadow girl allows the shadow man to kiss her, that the physical-object girl would permit such a liberty. Or taking a more serious case, we may note how impossible it is to make proper conclusions in the "world of introspective observation" from premises in the "metaphysical world." In the latter, pain and error may be looked upon as unreal by the absolutist, while "the same" pain and error in the "world of introspective experience" can not be held to be unreal. The error of the Christian Scientist lies in the fact that, half grasping the absolutist doctrine in a "metaphysical world," he jumps therefrom to conclusions in the "world of introspective experience."

Inasmuch as the concepts developed in any one "world" are based upon the appreciation of relations that are found real in that "world," I think it will be granted also that concepts which are developed in any one special "world" can not be transferred to, and made applicable within, a diverse "world" without risk of confusion of thought. As I shall attempt to show in the sequel, we take just such a dangerous step when we attempt to apply the concept of causality to the relation between mind and body.

### III

It seems to me clear, notwithstanding the views of eminent thinkers to which I refer below, that the concept of causality arises primarily in connection with our naïve observation of natural phenomena; that it is, in other words, a concept belonging primarily to the "world of sense." One object strikes another that is stationary; the latter then moves; the former loses its motion in whole or in part. The motion of the first object is thought of as bound up with, and the basis of, the motion of the second. The experience of an innumerable number of facts of this nature leads to the development of the concept of cause.

From the "world of sense" develops the "world of science" and within it the "world of mechanism"; and although this newly found "world" is, as we have seen, diverse from the "world of sense," nevertheless in it the same order of occurrences appears which originally yielded the concept of cause. And in this "world of mechanism" this causal concept becomes of very fundamental importance. In the "world of sense" attention is given to many other than causal relations, which latter are only occasionally noted. The



"world of mechanism," on the other hand, excludes all forms of experience to which it is impossible to apply this causal concept, a fact which becomes more and more significant as the structure of science becomes more complex. The causal concept thus serves as a most powerful bond between the "world of sense" and the "world of mechanism," and the "world of science" in general; and its importance is thus greatly emphasized.

It is to be noted that, whether applied in the "world of sense" or in the "world of science," this causal concept arises in connection with what we call our objective view of experience.

When we turn to what we call the subjective view of experience, we enter, as we have seen, a "world" quite diverse from the "world of sense" and equally diverse from the "world of science"—enter, in other words, the "world of immediate experience as recalled," from which develops the "world of reflection upon this immediate experience."

In these new "worlds" we should naturally expect to note the development of certain concepts quite diverse from those developed in the "worlds" of sense and of science, and this expectation we find realized.

In the "world of reflection upon immediate experience," which we describe as the field of introspective observation, we discover volitional experiences which yield a concept which we may speak of as the concept of efficiency.

This efficiency concept is clearly not derived from data found in the "worlds" of sense or science, within which the primal concept of cause appears. Nevertheless, when we objectify the whole situation we note that the experience of efficiency often occurs together with motions of our bodies, which in turn move objects just as they are moved in the world of physical objects. Hence this concept, which I here call efficiency, becomes closely bound up with the causal concept, and, as we shall presently see, is not uncommonly thought to be of its very essence—so much so indeed that the term causation is very frequently used as though it were identical with the term efficiency.

Using the term efficiency thus, and because of the observed relation above noted, we are led to make a false step, carrying the concept of efficiency, which properly belongs only to the world of introspective observation, over into the diverse world of physical objects, and conceiving of efficiency as part and parcel of causation in the physical world. Thus by a failure to keep clearly before us the diversity of the objective and subjective "worlds" we come to attach the term causality to the experience of efficiency, on the one hand,

and, on the other hand, come to think of this experience of efficiency as of the very essence of the causal concept.

To take such a position as is thus outlined may seem somewhat audacious, when it is considered how many keen thinkers have upheld the doctrine that, but for the sense of efficiency correlated with successive movements, we would never have conceived of any such thing as a cause. Thus Dr. James Ward tells us<sup>5</sup> that "the source and primary meaning" of cause is found "unquestionably in ourselves as active and efficient."

Nevertheless I must be bold in the assertion that this view appears to me to be untenable; for if I read experience aright, we are perfectly capable of entertaining the conception of cause in nature without attaching to it any attribute of efficiency whatever. For instance, I do not find this sense of efficiency bound up with my notion of the causal relation between the activities within the sun and the conditions of motion upon the earth. It is only as we approach realms closely allied with those which are distinctly related to the direct activities of man himself that the sense of efficiency becomes bound up with the notion of cause by the process above referred to; and surely, if we examine the evidence critically, we find in our experience of nature no evidence whatever of what we call efficiency when we speak in terms of immediate experience.

The distinction between these two concepts of cause and efficiency stands out more distinctly when we consider that the causal concept as derived from the observation of nature, and quite apart from the concept of efficiency, depends for its existence, as Hume taught us, upon the appreciation of what, when clearly defined, appear, as J. S. Mill puts it, as "ideas of invariable, certain, and unconditional sequence."

On the other hand, so far as I can see, the concept of efficiency *in the world of introspective observation* is not resolvable into "ideas of invariable, certain, and unconditional sequence."

It is of course a matter of fact that we do in every-day conversation speak of mental states as the cause of physical states, and *vice versa*. But we must note that we all very commonly apply the concept of cause where we have no right whatever to do so. The average man is restive when he finds it difficult to account for any situation that baffles him, but at once rests satisfied if he can attribute it to anything that he can call a cause. It has been said that the inhabitants of the Bahama Islands believe the Gulf Stream does everything but milk their cows. The other day the landlady of one

<sup>5</sup> "The Realm of Ends," page 273.



of my friends, having been spoken to sympathetically of the fog on a "washing day," remarked with satisfied complacency "How can you expect anything else when everybody tries to dry their clothes on the same day?"

It is true that we should not apply the concept of cause to the relation of mind and body did we not find some measure of similarity between the experiences involved and the causal succession in nature, and we may grant with Hume that so far as we apply the concept of causation to the relation of mind to body we do so as the result of judgments based upon the experience of successions. But this is quite apart from the point I would here make. What I am concerned to argue is that the concept of efficiency is derived from data given wholly in the mental field as immediately experienced, in which we gain none of the characteristics from which the concept of physical causation is developed.

It is true, as Hume argued, that when we consider ourselves as active, as doing something, and think of our volitions as causes of bodily movements, we are dealing with mere successions,—successions which must be judged to be invariable and unconditional if we are to justify ourselves in speaking of the volitions as the causes of the bodily acts. But I submit that when we think thus of this "sense of doing something," we objectify the whole situation. We think of our "sense of doing something" as "out there," exactly as if it were the "sense of doing something" thought of as belonging to another man in the objective world, rather than within our own introspective experience. And we then carry over into this objectified mental field the causal concept derived from the "world of sense."

This is natural enough when one considers our reckless attribution of cause above referred to, and is a common procedure in the careless life of the average man, and of the philosopher when he lays aside the attitude of the thinker and becomes an average man. The trouble arises however when the philosopher, as a thinker, assumes that he is justified, not only in carrying over the causal concept into this objectified mental field, but also in carrying it over into the non-objectified field of immediate experience. It is one thing to apply the term cause where we note mere physical-mental or mental-physical sequences, following the habit of the common man who thoughtlessly applies the causal relation whenever he notes sequences. It is quite another thing to show the warrant for this application of the causal concept, if we agree that it can only properly be applied when sequences are recognized to be "invariable, certain, and unconditional."

If the position thus taken is warranted, then clearly, when we ask whether the mind can act causally upon body, or body act causally upon mind, we must use care in distinguishing the diverse meanings attributed to the word causation.

Activities of body when considered *quite objectively*, as may be done in our study of the behavior of animals without any assumption of consciousness due to our observation of the analogy between them and ourselves, appear as part of the mechanistic system, within the "world of science." Here, causation, in the sense of invariable unconditional succession, may be held to apply. But the concept of efficiency does not at all clearly apply: for, if we strictly maintain the objective attitude we have no evidence whatever of the existence of mind in connection with this objective study of behavior.

When, on the other hand, we consider changes in consciousness as such, we find that the concept of efficiency does apply, while the concept of causation in the sense of unconditional invariableness of succession does not at all evidently apply.

It must be constantly borne in mind also that when we consider this question we are not dwelling within the "world of physical objects" which gives us the conception of causality as invariable unconditional sequence, nor within the "world of introspective experience" which gives us the concept of efficiency, but in a realm of realness quite diverse from both. Thus, in applying the concept of causality to the mental and physical items in this new "world," we are attempting to carry over into it a concept derived from the one or the other of the diverse worlds first mentioned. The question is whether we have any right to take this step—a question which can not fail to be raised if one bears in mind the radical difference above noted between the meaning attributed to causation in the realm of body and in the realm of mind.

#### IV

In taking up the consideration of this question we must note in the first place that it is necessary to avoid an obvious error made by the average man, who is wont to think that the mind sometimes acts causally upon the body and that sometimes the body acts causally upon the mind. We seem bound to reject any such haphazard and dubious relation, and to ask two questions; viz., first, whether we are warranted in holding that the mind always or sometimes acts causally upon the body, and, secondly, whether the body sometimes or always acts causally upon the mind. And we are also called upon to consider each of these questions in relation with the two concepts above considered, viz., that of causation proper derived from our



objective observation of the world of objects, and that of efficiency derived from our reflection upon introspective experience which is held by many to be of the essence of the causal concept.

Let us take up first the concept of causation as it is thought of by those who hold that it is derived from our experience of efficiency. If under this view we hold that a bodily state is in any case the cause of a mental change, we are compelled to assume in physical nature the existence of an efficiency of which we have no evidence whatever.

If, on the other hand, we hold in any case that a mental state causes a bodily act, we hold that the bodily act was due to the efficiency component of the mental state. It is difficult, however, to bring such a tenet into harmony with the phenomena of habit, where we note that acts, which are at first preceded by mental states which involve this sense of efficiency, if repeated, soon follow the occurrence of mental states which do not involve this sense of efficiency, and are finally performed without the occurrence of any recognizable, antecedent, correlated mental states whatever.

If now we take the term causation in the sense applicable to our observations of the external world, we can apply it to the relation between mind and body only by showing that we have reason to believe that certain special mental changes follow invariably and unconditionally certain special physical changes; or that certain special physical changes follow invariably and unconditionally certain special mental changes.

We do note certain mental changes which in repeated instances appear to follow certain changes of bodily activities; but we surely are not warranted in saying that these sequences are invariable and unconditional. The cutting of superficial nerves is often in our experience followed by a marked painful sensation; but that this succession is not invariable or unconditional appears clear when we note that the soldier in the heat of battle often fails to appreciate the fact that he has received a superficial wound; this being an example of the influence of what we call a change of "threshold" of awareness.

In like manner we do note certain bodily changes which in repeated instances appear to follow certain mental changes; but we surely are not warranted in saying that these sequences are invariable and unconditional. Grief is so often followed by ill-health that we carelessly speak of the former as the cause of the latter, but the sequence is really not invariable or unconditional. Volitional experience does not always prevail to overthrow, or even to modify, habitual activities.

Surely then, whether we hold that mind acts on body, or body on mind, we are bound to agree that it is impossible to hold that the succession of changes is unconditional even where it appears to be invariable. Under such conditions, in the "world of sense," and, its development, the "world of science," from which the concept of causation here considered is derived, we are led, not to the attribution of a direct causal relation between the two successive phenomena, but to the postulation of a causal influence beyond both; as the invariability of the sequence of night and day are appreciated to be conditioned by something in nature extrinsic to them. We may in the end find ourselves compelled to postulate some cause as the determinant of the observed relation of correspondence between mental and physical changes, but this does not imply that we are forced to apply the causal concept to the mental-physical relation itself.

It may be remarked in passing that if we deny ourselves the luxury of occasional leaps from the realm of introspective observation into the realm of physical objects, which is the "world of reality" of every-day life, or *vice versa*, and if we persistently cling strictly to the realm of introspective observation, then nerve activities, and all other objects in the outer world, appear as complex systematized psychic systems, or as complex emphases within consciousness, fundamentally of the same nature as those spoken of as distinctly mental. In such a view the neururgic-noetic correspondence appears as a correspondence quite within consciousness, and presents a problem quite diverse from that to which the concept of causality applies.

# V

Assuming that the validity of the application of the concept of causality to the relation between mind and body is open to grave question, nevertheless as it is, in fact, thus applied by the average man, we should not be surprised, after what has been said above, to find that he comes to look upon this causal relation as a thoroughly haphazard and lawless one, although we may well wonder that thinkers do not protest against such inconsistency. Few of us indeed can claim to be free from such a charge. We are usually quite content to say that sometimes the mind acts upon the body and sometimes it does not; and, on the other hand, that sometimes the body acts upon the mind and sometimes it does not. We say for instance that indigestion, which is a physical state, gives my friend "the blues," which is a mental state; but we do not seem to think that any physical state causes such a mental state as an act of will. We say that a noise, which is a mental state, makes our friend jump, the



jumping being clearly a change of physical state; but we do not seem to think that any antecedent mental state causes the winking of his eyelids, or the throbbing of his heart, which are also physical states.

But this difficulty disappears altogether if we look away from this causal relation and concentrate our attention upon the correspondence between mental and body changes; for then we find much evidence that there is a thorough-going correspondence between successions of neururgic and noetic changes which enables us to account for the relation of mind and body in a manner freed from the acceptance of haphazardness and lawlessness.

Under such a view certain changes in the nature of the activities within the nervous system are held to be coincident with the appearance of certain specific mental items. There thus appears to be a correspondence between neururgic and noetic forms, and evidence of the breadth of this correspondence increases as our knowledge of nerve activity increases. Furthermore, if we assume that the correspondence is thoroughgoing in the individual, we are enabled to correlate many phenomena in mental fields, such correlation being suggested by noticeable correlations in neururgic fields. This theory of thoroughgoing correspondence being thus corroborated, if carried to what appear to be its legitimate conclusions, indicates, first, that there is psychic existence wherever there is life; and finally, that to all transfer of energy some psychic change corresponds.<sup>6</sup>

Now what we have to deal with in connection with this theory is merely corresponding successions in both the neururgic and the noetic series, and, if we approach our problem from this standpoint, we find the interpretation of the facts concerning the relation of mind to body, which are usually made in terms of causation, thoroughly well interpretable without any such use of this causal concept, provided we accept the view that there is a psychic field of non-awareness, a view in favor of which we have much cogent evidence.

In closing, then, let us consider a few cases to illustrate how the apparent haphazardness and lawlessness of the relation between mind and body disappear if we interpret this relation in terms of correspondence rather than in terms of causation.

If I were to walk up behind a man and discharge a pistol close

<sup>6</sup>This I call the theory of neururgic and noetic correspondence to differentiate it from the theory of parallelism which was devised by the atomistic psychologists, and which fails in many directions. The theory of correspondence, however, so far as I can see, meets these difficulties in assuming that changes in a psychic *system* correspond with changes in the physical *system* as differentiated in the nerve system.

to his ear he would jump aside suddenly and would be likely to describe the occurrence by saying "the noise made me jump." The noise is a psychic state, while the jump is due to certain active muscular states occasioned by changes in the nervous system. His description therefore implies that the psychic state (the noise) in some mysterious way caused the physical change (the jump).

But if we consider the case merely as an instance of coordinate successive occurrence the mystery seems at once to disappear. The psychic change, which we call the noise, was accompanied by a change of nerve condition, and in like manner the jump, which was due to certain nerve activities, was accompanied by certain "instinct feelings" quite within the mental order. What happened may therefore be formulated as follows:

Mental series ..... (A) Noise, followed by (B) "instinct-feeling."  
Corresponding  
physical series ... (X) Nerve change, followed by (Y) jump.

But in his description of this occurrence the average man overlooks the nerve change *X* and also the instinct-feeling *B*, so that he thinks of the jump as due to the noise rather than to the overlooked nerve change *X*. When the situation is stated in the terms above used this occurrence surely seems quite natural and not especially involved in mystery.

Or let us take another commonplace case. The ordinary man is likely to say of one of his friends "His deep grief (mental state) made him ill (nerve situation)."

If the occurrence thus described is formulated as above we have:

Mental series ..... (A) Grief, followed by (B) a mental state  
(overlooked).  
Corresponding  
physical series ..... (X) Nerve situation followed by (Y) illness.  
(overlooked),

In his description of this occurrence the ordinary man overlooks the nerve change *X* and also the psychic change *B*, so that he thinks of the illness as due to the grief rather than to the depressed nerve condition accompanying this grief.

So again you may hear some one say "My act of will (mental state) made my arm move (physical state)." But if we state this in terms of a similar formulation we have:

Mental series ..... (A) Will-act followed by (B) a mental state  
(overlooked).  
Corresponding  
physical series ..... (X) Nerve change followed by (Y) arm movement.  
(overlooked),



In the ordinary description of this occurrence the nerve change (*X*) corresponding with the will-act (*A*) is overlooked as is also the psychic change (*B*) corresponding with the arm movement (*Y*), so that the arm movement is thought of as due to the appreciated will-act rather than to the nerve condition that accompanied this will-act.

The commonplace remark about willing to move one's arm is closely allied with similar remarks made by a very large number of people in these days whom you are accustomed to hear say "I willed to be cured and I am now well"; or in other words "my will-act (mental) gave me good health (physical)."

If this is formulated as above it reads as follows:

Mental series . . . . .	( <i>A</i> ) Will-act,	followed by ( <i>B</i> ) mental conditions
		(overlooked).
Corresponding		
physical series . . . . .	( <i>X</i> ) Nerve changes	followed by ( <i>Y</i> ) good health.
	(overlooked),	

In the ordinary description of this occurrence the nerve change (*X*) corresponding with the will-act (*A*) and also the mental state (*B*) corresponding with good health (*Y*) are overlooked, so that the restored health is thought of as due to the will-act rather than to the resultants of the nerve changes corresponding with this will-act.

The same people who tell us that they regain their health by will power are likely to say: "By an act of will I can make pain disappear." If the occurrences upon which they base such a broad statement are formulated as above, we have:

Mental series . . . . .	( <i>A</i> ) Will-act,	followed by ( <i>B</i> ) loss of pain.
Corresponding		
physical series . . . . .	( <i>X</i> ) Nerve change	followed by ( <i>Y</i> ) nerve change
	(overlooked),	(overlooked).

Here the nerve changes that accompany both the act of will and the loss of pain are overlooked, so that the person who speaks thus is *aware of* merely (*A*) the will-act (mental) followed by (*B*) loss of pain (mental).

It is true that in some cases the will-act is followed by disappearance of pain; which merely means that the nerve situation accompanying a particular will-act is followed by special nerve conditions whose psychic correspondents involve no pain. We have, however, no evidence to warrant us in holding that the sequence is invariable and unconditional, and that therefore the causal concept is applicable. In other words we have no adequate evidence to war-

rant us in holding that the nerve state accompanying the will-act is in all cases followed by the healthy physical state which carries with it this loss of pain. That is to say, the experience above described gives us no ground for the belief that if a man has sufficient "will power" he can always remove the unhealthy conditions which yield pain.

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### LITERARY SYNESTHESIA

READING the literature of synesthesia one is frequently impressed by the poetical value of many of the sense-analogies reported. It would seem that this aspect of the topic has been particularly interesting to the French investigators of the subject, so that, in conjunction with the more strictly scientific reports of such cases, they have given us an exposition of them from the standpoint of musical and literary criticism. French poets have themselves manifested their interest in synesthetic experiences and have not hesitated to utilize such material in enhancing poetic expression. One recalls Max Nordau's unhesitating condemnation of the attempt to confound sense-qualities and his inevitable conclusion that such exchange of adjectives is only a fantastic straining after novelty of effect, or, if rooted in actual experience, a confession of degeneracy.

Psychologically, the attempt to treat together cases of true synesthesia, in which sensations of a given sensory quality regularly and uniformly arouse sensations of another sensory tone, and cases of so-called colored thinking or the employment of sense-analogies in a figurative or reflective way, has induced some confusion. Each of these topics is undeniably interesting and may be related to the other in ways not yet thought of, but at present each demands separate treatment.

We may then legitimately ask (1) to what extent true synesthesia is to be found among poets, recognizing this question as distinct from that which asks (2) the esthetic value of an exchange of sense-qualities and the extent to which such transfer is employed by imaginative writers. The objection may, however, be raised that, apart from a personal examination of a given poet, it would be impossible to answer the first question, for in appeal for answer to the poet's works we can not with certainty distinguish between spontaneous and deliberate analogies. The objection is undoubtedly well taken. None the less, the attempt to answer the question allures one. It seems scarcely possible, for instance, that a poet, who experienced a sys-



tematic case of colored audition, in whom, that is, sound uniformly and constantly aroused color, would fail to show this peculiarity in descriptive writing.

The question as to the prevalence of synesthesia among poets aroused the interest of Bleuler and Lehmann in their early report on synesthesia to such an extent that an examination was made of certain literary material, but largely with negative result.

French literature, on the other hand, raises many questions as to the possibility of poets' experiencing synesthesia to an undue degree. Every one will recall Rimbaud's "Sonnet of the Vowels," which, it must be confessed, sounds somewhat sophisticated. Baudelaire's insistence upon sense-correspondences and Maupassant's confessions are scarcely more convincing. Leaving, however, the French poet and litterateur to the mercy of the French critic and psychologist, I have found it interesting to make a somewhat detailed study of certain English poets in order to determine whether or not their poetry shows any evidence of systematic or sporadic arousal of one sensation by another.

Only one unambiguous case was discovered. Poe, singing of the sound of the coming darkness, adds in a footnote to "Al Aaraaf": "I have often thought I could distinctly hear the sound of the darkness as it stole over the horizon." This simple and apparently isolated case of tonal vision is in interesting contrast to the more usual feeling of silence that so frequently steals upon one at sundown.

After this one attested instance, Swinburne's poetry furnishes the best evidence for a possible synesthesia. It is Swinburne's peculiarity to deal with simple sense-qualities in an abstract and emotional way with results very unlike the plastic and pictorial effects produced by poets of another type. As Woodberry has pointed out, it is this abstractness from perceptual quality that accounts for the peculiarly elusive and monotonous effect of Swinburne's poetry. Swinburne's preoccupation with simple sensational tone might well furnish opportunity for the expression of true synesthesia and such we seem to find. Light and music are used as almost interchangeable terms. He sings of sounds that shine, and of song visible. His is the line: "Light heard as music, music seen as light." Swinburne was, however, influenced greatly by modern French tendencies, so that it is possible that such exchange of sound and light is merely literary.

A survey of Shelley's poetry shows that he makes use of odor terms in a peculiar way, in description of things visual and auditive. Sometimes, light and music are blended in his similes; the song of both the skylark and of the nightingale are described in pictorial

terms. Usually, however, his comparisons are too deliberate to evidence any confusion. The same statement may be made in general of Keats's taste and touch analogies. These poets delighted, as it were, in embellishing their figures with a favored form of imagery.

The sense-analogies of William Blake are more difficult to qualify. He has, for instance, an odd way of describing things heard in terms of things seen. Unlike Swinburne's transfer of qualitative words, Blake's shift is at the perceptual level rather than at the sensational, as when he speaks of a virgin clothed in sighs.

Tonal vision—a very rare form of synesthesia—is frequently imitated in these poetic analogies. So too is olfactory vision and olfactory audition, of which, so far as I am aware, no actual experience is on record, although the latter is a favorite form of phrasing among musical critics who imitate synesthetic effects. Sound described as light occurs, but usually without suggestion of colored audition except in the use of the vague color-adjectives silver and gold. The nearest approach to synesthetic phrasing of this sort comes in Swinburne's line,

"Fine honey of song-notes, goldener than gold."

But in actual experience, colored audition is the most common form of synesthetic experience.

On the whole, the evidence for the prevalence of synesthesia among poets is ambiguous. In order to weigh the matter more thoroughly the question may be raised as to the esthetic and affective values of synesthesia as a literary device. To test this the following experiment was made. Thirty-four fragments, the phrasing of which was synesthetic, were chosen from the 5 poets mentioned above—Poe (3), Swinburne (9), Shelley (11), Keats (4), Blake (7)—and were included among 100 poetic fragments used in a test on the imaginal, affective, and esthetic reaction to poetry. Twelve subjects served in determination of the imaginal and affective reactions to these fragments. The esthetic and affective values were obtained by using the group method of finding the average position of each fragment in the series as a whole. For this last determination 6 subjects served. The fragments were arranged in 8 groups for each of the 2 series of judgments.

A survey of the average position given each of the 100 fragments on the basis of their pleasantness shows that 20 of the synesthetic fragments are to be found in the first 50, or more pleasant group; 14 in the second 50, or less pleasant group. There is, then, a slight indication of the pleasantness of such fragments. On the other hand, if we take the 20 most pleasant fragments and the 20 most un-



pleasant, we find that the first group contains 5 and the second 7 synesthetic fragments. 5 is a trifle under, 7 about equal to what we would expect from a chance distribution. In two of the pleasant fragments of the former group, moreover, the synesthetic element is very slight. It does not appear, then, that synesthesia as a literary device is particularly pleasing. The objection may be raised that with familiarity these fragments might become more pleasant, since repetition would overcome the strangeness, and perhaps unpleasantness, of the phrasing. But in a series of repeated judgments there was little evidence for this view, since as many synesthetic fragments waned in affective value as waxed.

A survey of the average position of each fragment of the 100 in the esthetic series shows 16 synesthetic fragments in the first 50, and 18 in the second 50, a very even distribution. But there are 8 synesthetic fragments in the first 20, 9 in the last 20; in both cases a trifle above the expected number. It would appear, then, that synesthetic phrasing has slightly more influence upon the esthetic than upon the affective judgment.

The M.V. upon the synesthetic fragments is no greater than upon the whole series of fragments. But both for the whole series and for the synesthetic group the M.V. is greater for the esthetic judgment than for the judgment of pleasantness. This shows that the former judgment is even more subjective than the latter.

Some cases of striking discrepancy between the affective and esthetic judgments may be noted. Here we may quote a Swinburne fragment which is held to be of high esthetic value, although very unpleasant. It reads:

"And swordlike was the sound of the iron wind."

The following from Keats:

"O turn thee to the very tale,  
And taste the music of that vision pale,"

is given a very much lower place on the esthetic than on the affective scale. There are only 2 fragments in the 100 esthetically inferior to this; but there are 41 that are more unpleasant. One of the two non-esthetic fragments spoken of in the preceding sentence is Shelley's line,

"And music from her respiration spread  
Like light."

This fragment, again, is less esthetic than pleasant. On the first scale it occupies the one hundredth or last position; but there are 33 fragments held to be more unpleasant.

A survey of the reports shows, however, that each poet must be

considered separately and in connection with the imaginal reports from the reagents. Of the 12 reagents who gave these reports, only 3 showed any tendency to synesthetic experiences. Of these, one (B) shows a pronounced case of colored gustation. Although he had never previously, so far as he could recall, experienced colored audition, during the test he reported such transfer, always in imaginal terms. Another reagent (D) has experienced colored audition occasionally and uses color-thinking to some degree. A third (E) during the course of the test was found to translate sound into terms of sight with great frequency. The reports of these subjects are of particular interest.

The Blake fragments were, without exception, on the average, both unpleasant and of slight esthetic value. His description of the auditory in visual terms is felt to be ridiculous or unmeaning, as in the line,

"And all thy moans flew o'er my roof, but I have called them down."

Translated into definite imagery, this fragment becomes absurd, as was reported by one reader to whom the moans appeared as pigeons. A slight blurring of the imagery so that merely vague flying creatures of some sort are seen renders the imagery more supportable.

The lines,

"Sweet moans, dovelike sighs,  
Chase not slumber from thine eyes,"

again bring visual personification of one sort or another. D, who finds the fragment more pleasing than do the other subjects, is the only one who reports a literal translation. The vaguely outlined moans and sighs, evanescent visual flashes of gray, are felt brushing the eyelids in a faint flicker.

These illustrations may serve as examples of Blake's tendency to translate his thoughts into terms of vision. Much more successful than such attempts are those in which he surrenders to sound. The laughing cadence of certain of his verses for children gives almost the effect of auditory hallucination; the laugh itself resounds through the verse. Blake, it is said, was not only poet, painter, and seer, but also musician.

Poe's phonism of the approaching night, his readers usually find unmeaning or else understand it as descriptive of the sound of thunder borne on the wings of the storm-cloud, an interpretation which suggests the possible origin of the experience. Several call the phrasing incongruous and, in general, it is not pleasing.

Poe gives no other example of clear-cut synesthesia and offers few instances of striking sense-analogies. Once he forms a pretty conceit



of a goddess's song carried to heaven as odor and he describes the sparkling Echoes that flow through the door of the Haunted Palace in terms of visual personification. This latter description pleases his readers exceedingly. Every reagent makes a more or less poetic picture; two of them do so in striking synesthetic fashion. E writes, "Through the open door is streaming waves of white, blue, and pink light, which I hear as soft sweet music." And B reports, "I see a beautiful door to a palace and pale blue and darker blue lights flash from it."

Movement vivifies Poe's imagery to an extraordinary extent. He delights in winged odors, floating banners, ethereal dances. This preoccupation with movement affects even his description of things auditory. He images a gush of melody welling from sounding cells; he sings of floating ditties and of groans that float; and in "Lenore,"

"No dirge will I upraise,  
But waft the angel on her flight with a pæan of old days!"

This intimate union of vision and movement brings it about that such descriptions of sound in terms of movement evoke frequently a visual interpretation. Sometimes even a complete translation of sound into vision is effected, as by one reader (E) of the line quoted above who saw the music following the angel in a stream of light. Such translation by Poe of sound into movement and a retranslation by the reader into visual terms perhaps best explains the fact that the reports on Poe show a greater number of synesthetic translations than do those on any other poet.

Swinburne's synesthetic phrasing, although often reported to be unmeaning, derives so much beauty from its association with melodious words and rhythmic cadences that the reader, preoccupied with the delight in sheer word-music, often surrenders all demand for meaning. Swinburne's frequent attempt to render song visible is, however, rarely successful, although there are readers who make the transfer, as E who images the visible music as tiny motes flying in the sunlight and B who sees the blue, not of the sky, but of the music, shining through rifts in fleecy clouds.

Keats was not particularly successful in his synesthetic fragments. The most effective is that in which he sings of the "velvet summer song" of the wind, lines apt in the arousal of tactile imagery. The most noted of his synesthetic fragments is the one reading,

"Lost in pleasure, at her feet he sinks,  
Touching with dazzled lips her starlight hand."

It is significant that the one reagent (D) who made an almost hallucinatory translation of the fragment into light localized on the lips

is the one reader of the fragment who finds it highly pleasant. Other reagents comment frequently upon the incongruous phrasing.

~ The statuesque quality of much of Keats's imagery, in contrast to the dance and buoyancy of Poe's flitting visions, exemplifies his preoccupation with the tangible. Poe often describes sound in terms of movement; Keats, on the other hand, frequently conceives music as tangible, material, as in the wonderful lines—lines which yet perplex many readers—

"A haunting music, sole perhaps and lone  
Supportress of the faery-roof, made moan  
Throughout."

Shelley's synesthetic fragments, with a few exceptions, are exceedingly pleasant. The French exponents of literary synesthesia are fond of quoting a celebrated passage from Shelley as evidence of the translation in his mind of music into odor. It reads,

"... music so delicate, soft, and intense,  
It was felt like an odor within the sense."

And in another place he sings,

"Thine old wild songs which in the air  
Like homeless odours floated."

Not only is music translated into fragrance, but also, in turn, odor is described in visual terms. Thus the odors that lie visibly above the flowers suggest the vision of tiny clouds that carry the perfumed incense of flower and forest.

The many forms assumed by Shelley's odor-similes suggest that the conversion is literary, not spontaneous. Readers frequently react to them with olfactory images, in themselves highly pleasant.

Shelley affords also many beautiful illustrations of the exchange of light and sound. The two fragments quoted below were given high esthetic and high affective value by nearly every reader.

The first has reference to the coming morn:

"Hear I not  
The Æolian music of her sea-green plumes  
Winnowing the crimson dawn?"

And the other:

"This is the mystic shell;  
See the pale azure fading into silver,  
Lining it with a soft yet glowing light;  
Looks it not like lulled music sleeping there?"

There is, too, a noteworthy description of the nightingale's song in terms of the bird's circling movements.

In general, as has been stated, Shelley's readers find such com-



parisons most beautiful. They do not often make the translation he suggests, but they find their imagery enriched by all manner of delicate connotations. Where, for instance, the silver and azure of the mystic shell are said to be like lulled music, one does not translate color into sound, but surrenders, instead, to a delightful relaxation such as is induced by soft music, or else one visualizes the shell to the accompaniment of orchestral strains or to that of the ocean-murmur resounding faintly in the shell's pale whorls. Again, one may not hear the *Æolian* music of the dawn, but may see, instead, the wind pluming itself among the dawn-clouds or may hear the sighing of the morning breeze. The descriptions are at once of things seen and heard together, and therefore the appropriateness of the double imagery, as in the line,

"Whose waters like blithe light and music are."

By the description of the nightingale's song cited above, Shelley has actually succeeded in arousing in many readers a synesthetic experience, an interpretation of the song as circling light. E writes, "I see the music as rings of light twist up into the sky where suddenly they break and fall to the ground in a shower of stars."

Such a cursory review as the above of a few chosen poets leads to the conclusion that while there is very slight evidence that the chosen poets experienced true synesthesia, there is some justification in concluding that they enjoy, more than the ordinary reader, analogies between the senses. It may be stated as a principle of interpretation that if a given transfer of sense-qualities is found pleasing only when the reader makes the suggested translation easily and spontaneously, there is some evidence that the writer himself used the analogy spontaneously rather than reflectively unless the expression be purely conventional. Put differently, an analogy that the average reader finds forced and unmeaning probably represents a peculiar but natural, rather than reflective, mode of thought for the poet. We may, then, interpret Swinburne's tonal vision, Poe's phonism of the night, Blake's visions, and Keats's "dazzled lips" as due to individual idiosyncrasies, while Swinburne's organic toning of phrases, Poe's kinesthetic analogies, Keats's tactual imagery, and Shelley's odor and auditive similes are literary and imaginative in significance.

Synesthesia may, it should be observed, be systematic, that is, constant in appearance under given conditions, and uniform in quality, or it may be sporadic, occur, that is, only occasionally. While synesthetic experiences are not pathological, yet it is known that they may result from stimulation by drugs or accompany the excitement of fever. It would not then be impossible for the poet in the fever of inspiration to experience a subtle confusion of the senses,

that would lead to spontaneous synesthetic phrasing, incomprehensible to the average reader.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*La Pensée et les nouvelles écoles anti-intellectualistes.* ALFRED FOUILLÉE.  
Second edition. Paris: F. Alcan. 1911. Pp. xvi + 415.

This work, the first edition of which seems to have been exhausted almost immediately, is of less interest to the American than to the French public. Its object is twofold: first, to claim for its author the priority in certain psychological and metaphysical theories which have been generally ascribed to Guyau, Nietzsche, James, and Bergson; and, secondly, to show that voluntarism, pragmatism, and (mystic) intuitionism, wherever they have departed from the lines he had laid down, have fallen into serious error. It also contains a brief exposition of the author's own theory of the nature and functions of thought.

The claim to priority is based principally upon "La Liberté et le Determinisme," which appeared in 1872, and the proof is as convincing as such proofs usually are. In Fouillée's comprehensive eclecticism (or synthesis, as he himself would say) all the historical types of philosophy are merged; and it would be difficult indeed to invent an "ism" which he could not claim to have in some sort anticipated. The points of comparison are of a very general character, all that is individual and distinctive in the various theories being set aside as error. And meanwhile the further question, how far our author himself had been anticipated, is left untouched.

To denote the fundamental principle of his philosophy, Fouillée here, as in other recent essays, uses the phrase, "will to consciousness," formed after the analogy of the "will to live" and the "will to power." The most primitive datum of a reflective self-consciousness is, he declares, consciousness itself—not a blank "awareness," but a consciousness full of concrete content of sensations, feelings, impulses, ideas, etc.; ever changing and ever looking for change, and especially looking forward to change which it, by its own feelings, ideas, and efforts, shall initiate or control. Thus the reflecting subject is conscious of himself as *will*; will, moreover, not for a life that shall be insensible or unconscious, for then it would be of no interest to him, but a life *for himself*. His will is essentially a *will to consciousness*. Its object is always to maintain or increase the functions of conscious life. These functions are comprised in three principal functions, which are, however, inseparable: thought, feeling, and action. This is the "law of idea-forces": that the affective and the intellectual life are inseparable. It is by means of this law that Fouillée undertakes to bring together the portions of truth in all the various systems—intellectualistic, mystic, voluntaristic—of his time.



In the obtaining of these first principles, Fouillée professes to employ a strictly "immanent," experiential method, simply and plainly describing the most obvious features of conscious life without addition, selection, or criticism. Opinions will, of course, differ as to the justice of his professions. To me they seem to be far from well founded. Instead of describing fact he seems to me to be manipulating conceptions. That all desire is, at bottom, directed toward one's own future experience is not affirmed upon introspective evidence, nor is the further theory, that at all times thought, feeling, and action go together; or, at any rate, no sufficient account of any such evidence is presented.

What makes these theories attractive is the synthesis to which they lead. "Every purely intellectualistic system loses itself in a consideration of the objective, which admits only things that are more or less external and relations that are more or less extrinsic, without showing the ground which gives character to these objects, and still less the life of the conscious subject himself. On the other hand, every system that is purely voluntaristic or sentimental loses itself in an exclusive consideration of the subjective, which does away with both objective reality and objective truth. And so it has always seemed to us essential to rise above the two contraries" (p. 3). Accordingly Fouillée is an uncompromising intellectualist, and at the same time an uncompromising voluntarist. He stands ready to grant their full claims to reason and heart alike.

The volume is too rich in detail to admit of even a scant summary within the limits of a brief review. The constructive part contains, I believe, no notable addition to the author's system. As I have said, the exposition is decidedly brief; and for that reason it will be found useful by those who wish to gain a rapid insight into the "philosophy of idea-forces."

The critical part, as well as the abundant critical suggestions which are contained in the constructive part, strikes me as being of very uneven value. Both its best and its weakest points are expressive of the author's notable good sense and balance of judgment. He lays bare the characteristic weaknesses of men with unflinching skill. But where good sense and judgment, joined with a fine analytical ability, are not sufficient, where a bold imagination is necessary for the proper appreciation of new and striking views, there Fouillée is disappointing. Poorest of all are the notices of Poincaré and his "new philosophy of the sciences," this for the special reason that the author's knowledge of mathematics is very limited and superficial. His attempt to prove the necessary truth of the axioms of Euclidean geometry is of a kind to be very much regretted. The treatment of pragmatism is also disappointing. It adds nothing new to the controversy; and like most French essays on the subject, it attributes a great deal to the pragmatists which they have not dreamed of claiming. The following extract, which summarizes a section, is typical. "... It is certain that pragmatism contains an essential contradiction. It holds that the intellect is only a means of voluntary action upon nature. But one can not act upon nature and *provide* thus for the satis-

faction of human feelings, except as he can *foresee*; provision and prevision are inseparable. Intelligence, to be a means of action and feeling, ought therefore to be first of all a means of knowledge and to have a truth-value. If, as we ourselves have maintained, theoretical knowledge and practical efficiency are in direct ratio with each other, or rather are one and the same thing under two aspects, that is no reason for denying the *cognitive* side of ideas" (p. 288).

The notices of Bergson are widely scattered through the volume, and are generally without mention of his name. By far the most important is a long study of "intuitionism" which occupies the last place in the work, and to which the remainder leads up as to a climax. Fouillée shows with admirable clearness what varied elements the intuition of Bergson embraces: the general consciousness of bodily life; the fleeting impression of the momentary state of mind; a confused and condensed memory; the spontaneous consciousness of one's own existence; introspection; sympathy; instinct; constructive imagination. And he proceeds to show how poor an organ of philosophy this many-sided faculty is; that instead of being superior to the scientific intellect it is altogether inferior to it; that instead of being above criticism, as giving us a direct revelation of the reality of ourselves and of other things, it stands in the utmost need of criticism from every point of view.

Fouillée writes admirably. Though now an old man, he still retains the facility and grace of earlier years. There is little of the poet in him; but he gives occasional evidences of a flashing wit. One bon-mot is worth remembering: "The Chantecler of the poet claims that it is his morning song that causes the sun to rise; the 'new philosophy of the sciences,' so close to pragmatism, attributes almost the same honor to its 'decrees'; it causes truth to rise."

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*Thought and Reality in Hegel's System.* GUSTAVUS WATTS CUNNINGHAM.

Cornell Studies in Philosophy, No. 8. New York: Longmans, Green, and Company. 1910. Pp. v + 150.

This very readable monograph defends the thesis that Hegel's philosophy neither lends itself to the charge of "intellectualism," of equating things with mere abstract thought about things, nor justifies the many attempts made by his critics to define reality in irrational terms, as sheer immediacy over which thought can play superficially, but into whose heart thought can not penetrate. The author sees clearly that any such identification of Hegel's philosophy with an abstract intellectualism, and the consequent appeal to the supposed immediacy of fact or feeling, rests upon a conception of thought which Hegel did his best to overcome. This *non-Hegelian* doctrine of thought, wrongly attributed to Hegel even by so sympathetic an interpreter as McTaggart, is the doctrine that "thought is a mediating activity among other mental processes—which bear to it an external relation" (p. 73). Whoever thus interprets Hegel's doctrine



of thought will suppose, in view of his identification of thought and reality, that Hegel absurdly equates reality with the process of formal knowledge, that he transfers "the wealth of the factual world and the glory of it" into "the poverty of general principles and universal laws" (p. 85). Such an interpretation will also imply that in asserting the supremacy of the Notion, Hegel held, as McTaggart puts it, "that the highest activity of spirit, in which all others are transcended and swallowed up, is that of pure thought," that the legitimate activities of will and feeling are suppressed. Again, such an interpretation of Hegel's doctrine of thought makes it easy to ridicule the supposed transition from the logic to the world of nature and of mind, "the deduction of existential reality from abstract universals" (p. 67). Moreover, classic misconceptions of Hegel's account of negation rest at bottom upon attributing to him this false doctrine of thought. Haym's supposition that according to Hegel the essence of things consists in their being contradictory, the criticism of Trendelenburg that pure thought is always an affair of sheer identities and therefore can not involve any real opposition and negation, and McTaggart's contention that negation loses import as the dialectic advances, these views all rest on the supposition that "Thought" in Hegel's system is the thought of formal logic, always dealing with an external content.

As against such an interpretation of Hegel's doctrine of thought, Dr. Cunningham holds that Hegel understands by the Notion "not abstract and formal cognition, but organized experience" (p. 71); that the apparent transition from the logic to nature and mind "was attempted for purely schematic purposes"; that the so-called transition is only a change in point of view because "the logic, the philosophy of nature and the philosophy of mind are only three points of view from which one organic whole is observed and interpreted" (p. 58). When thought is thus regarded as the whole life of mind, it is not so palpably vicious to hold that philosophy is the highest expression of spirit, since "philosophical knowledge always means more than mere abstract cognition; it is an immediacy which includes within itself the whole life of spirit" (p. 89). And such an account of thought makes it possible to hold that the individual is significant and unique, not because of any irrational immediacy, but through rational (not formal) definition.

In the last chapter the author defends the interpretation of the Hegelian absolute as a self-conscious individual, differentiated from the world and from all finite existence precisely because "consciousness always demands a content from which it is differentiated" (p. 144).

Dr. Cunningham rightly insists that the *Phenomenology* must be reckoned with as well as the *Logic* in the final interpretation of Hegel's philosophy. He might have added that the early theological writings are not without significance in estimating the drift of Hegel's doctrine of thought.

Unquestionably an important motive in the contemporary revival of Hegel studies, of which this monograph is an important symptom, is the

belief that Hegel's attempt to deepen the concept of thought is highly significant for us to-day when so much of our philosophy is drifting either towards an irrationalism or a realistic doctrine of consciousness, remote from the real life of thought.

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## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. May, 1912. *Identité de la liberté et de la nécessité* (pp. 449-475): J. DE GAULTIER. — The word *liberty* is a word wholly without significance. *Essai de critique sociologique du Darwinisme* (pp. 476-492): DR. S. JANKÉLÉVITCH. — An exposition of certain grave difficulties that have become manifest in Darwinism through attempts to apply it to sociological phenomena. *Les idées directrices de la physique mécaniste (2e et dernier article)* (pp. 493-513): A. REY. — The method of physics is essentially an assimilative synthesis where reason and experience are complimentary. Present progress consists in pushing on mechanistic rationalism. *Analyses et comptes rendus*. Cournot, *Traité de l'enchaînement des idées fondamentales*: A. PENJON. G. Heymans, *Das künftige Jahrhundert der Psychologie*: M. SOLOVINE. F. Raun, *Etudes de morale*: G. BELOT. Dr. Rémond et Dr. Voivenel, *Le génie littéraire*: G.-L. DUPRAT. O. Fricke v. d. Pfordten, *Psychologie des Geistes*: G.-L. DUPRAT. Dr. Erich Becher, *Gehirn und Seele*: G.-L. DUPRAT. W. Rakić, *Gedanken über Erziehung durch Spiel und Kunst*: L. ARRÉAT. Dr. D. Vladoff, *L'homicide en pathologie mentale*: G.-L. DUPRAT. Fr. Pieavet, *Roscelin, philosophe et théologien*: A. PENJON. *Revue des périodiques étrangers*.

REVUE DES SCIENCES PHILOSOPHIQUES ET THÉOLOGIQUES. April, 1912. *La sanction morale dans la Philosophie de saint Thomas* (pp. 213-235): A. D. SERTILLANGES. — What we call sanctions of good and evil are, according to St. Thomas, its natural consequences, brought about by a moral determinism, much more rigorous than physical determinism. *Les Méthodes de la définition d'après Aristote* (pp. 236-252): M. D. ROLAND-GOSSELIN. — An exposition of Aristotle's theory of definition. *Le Magistère ecclésiastique, source et règle de la théologie* (pp. 253-278): M. JACQUIN. — The divine Revelation is proposed to us by the ecclesiastical authority, sole rule of the faith, already elaborated and more or less developed, according to the times. *Jacobin, Gallican et "Appelan," le P. Noël Alexandre* (pp. 279-281): REMI CONLON. — Proves, from historical documents, that Father N. Alexandre (1639-1724) died in perfect adhesion to the doctrines of the Church. *Note. Bulletins. Chronique. Recension des Revues. Supplément*.

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## NOTES AND NEWS

### HENRI POINCARÉ

ON July 17, the death of Henri Poincaré deprived the world of, perhaps, its foremost genius. In the address delivered at his funeral, *Nature* quotes M. Guist'hau, Minister of Public Instruction, as saying of him:

"His powerful spirit came into touch with every problem and threw fresh light upon each. He was one of those rare figures in the history of mankind who, by bringing together fragmentary or isolated facts, ideas, or observations, can raise themselves to a conception of the universe, can study its constitution and evolution, and can fathom even its variations. With the help of this force of investigation, which extended to everything, he studied the laws of the intellectual, as well as of the physical world, and philosophers, mathematicians, and astronomers, recognized in him their master."

The breadth of his interests can best be shown by quoting from the speech of M. Frederic Masson, on the occasion of M. Poincaré's election to the Académie Française, in 1909:

"M. Poincaré is a very vast mind. He is remarkable for both the diversity and the profundity of his learning. He is a geometer as well as a physicist and astronomer, pursuing these sciences rather by the application to them of analytical methods than by simple observation and experimentation. His interests, thus, have been largely in the fields of mathematical physics and celestial mechanics.

"As a geometer, his works concerning the theory of numbers, integral calculus, and the general theory of functions may be found in more than one hundred and fifty communications published in the *Proceedings of the Academy of Science* and in as many articles published in mathematical journals of France and other countries.

"While professor of mathematical physics, at the University of Paris, he published fourteen volumes of lectures on light, electricity, thermodynamics, and the propagation of heat. He popularized in France, while perfecting them, Maxwell's theories which were later proved by the experiments of the great German physicist, Herz.

"In the field of astronomy, Poincaré showed great originality, and his studies upon the form taken by a fluid mass in rotation and subjected to

the laws of universal gravity led to the formulation of many interesting and important theories regarding the separation of the earth and the moon, and the formation of the variable stars. By revising the calculus of LaPlace he was able through further investigation to establish the theory formulated in 1784 concerning the stability of the solar system."

Furthermore, the volumes that bring together certain prefaces to scientific works and articles published in reviews present M. Poincaré as a philosopher of no mean order. The analyses of scientific concepts, found in "Science and Hypothesis," which form the basis of the work, are reconsidered in the light of their relation to reality, in the "Nature of Science," and there established in a noteworthy contribution to the problem of the nature of knowledge.

Certain extracts from a third work, not yet translated into English, "Science et Méthode" will show both the psychology of the investigator and the motivation of his life.

"The scientist does not study nature because to do so is useful; he studies it because he takes pleasure in it, and he takes pleasure in it because it is beautiful. If nature were not beautiful, it would not be worth knowing, and life would not be worth living." "It is the search for the special beauty, the sense of harmony of the world, that makes us choose facts most suited to contribute to this harmony, as an artist chooses, among the features of his model, those which complete the portrait and give it character and life." "And it is because simplicity, because grandeur is beautiful, that we investigate by preference simple facts and great facts, that we take pleasure now in following the gigantic course of the stars, now in scrutinizing with the microscope that prodigious littleness, which is also a grandeur, and now, in seeking through geological time the hour of a past which draws us because it is remote." "But this disinterested investigation of truth for its peculiar beauty is also healthy and can make man better."

DOCTOR EDWIN D. STARBUCK, professor of philosophy in the State University of Iowa, has been granted sabbatical leave for the coming year, and will reside in Boston. He will act for the year as psychologist adviser to *The Beacon Press* in the publication of children's and young people's literature, and especially in the formation of the graded Sunday School curriculum. His address will be 25 Beacon St.

DR. WILLIAM PEPPER, professor of clinical pathology at the University of Pennsylvania, has been appointed dean of the medical department, to succeed Dr. Allen J. Smith. Dr. Smith will remain professor of pathology, comparative pathology, and tropical medicine.

DR. L. R. GEISSLER (Cornell) has resigned his position as research psychologist in the physical laboratory of the National Electric Lamp Association, Cleveland, to become professor of psychology at the University of Georgia.

IN the last issue of this JOURNAL, Dr. Walter F. Dearborn was referred to as professor in the school of education at Chicago. He should have been referred to as associate professor.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### CONSCIOUSNESS AND ITS OBJECT

PHILOSOPHIC discussion of the past decade has been in large measure a controversy over idealism. Our present era of academic protestantism, however, has brought with it the inevitable creeds and sects, ready to engage in conflict with each other before their common battle is fairly won. They are at present divided into the two main camps of pragmatism and realism, each of which accuses the other of perpetuating the very heresies from which the original struggle was a revolt. It is charged, on the one hand, that pragmatism, after all, embodies the idealistic fallacy which makes "being" dependent on experience; and, on the other, that realism sanctifies anew the mechanical "external" relation of consciousness and object. All these charges and counter-charges, however, have increased rather than diminished the difficulty of discovering the points at issue. This suggests the possibility that the divergence has either been exaggerated or else is to be sought to some extent in matters which have not so far been made sufficiently prominent by both parties.

In a series of articles, which have not as yet met with the recognition they deserve, Professor McGilvary has set forth in greater detail than has usually been attempted by other realists the implications of his realistic views. His excellent paper, "The Relation of Consciousness and Object in Sense-Perception,"<sup>1</sup> is a presentation of a position which has so much in common with that of other writers who do not call themselves realists as to arouse the hope that the differences are less important than they may seem to be. It is my purpose to discuss a point in Professor McGilvary's article which appears to be of fundamental importance, but which requires to be made more explicit in order to establish the exact relationship between this form of realism and its pragmatic rival.

Stated broadly the epistemological problem may be said to center in the question how the same fact can be at the same time a member

<sup>1</sup> *Philosophical Review*, March, 1912.

in the "objective" and in the "subjective" order; how it can be both a physical reality and an experiential fact. To postulate this identity is apparently the only alternative to historic dualism. It seems, however, that the fact which thus figures in two different orders at once is not quite the same fact in both cases. The difference, moreover, if we are agreed to forswear the old-time soul and its degenerate descendant, an entitative consciousness, must be located in the fact itself. In other words, the coming into consciousness necessarily means that the fact has undergone some kind of change. Hence the question how the fact can be known as it was before the change took place. At first glance such a formulation of the problem seems to make the whole epistemological undertaking an absurdity. It is like turning on the light in order to see the darkness.

That the arrival of consciousness means a change on the part of sensuous objects is conceded by Professor McGilvary, and indeed can scarcely be denied by any one, if change be taken in a sufficiently wide sense. The important thing is the character of this change. According to Professor McGilvary, this change consists of a certain new grouping or relationship of the objects within the field of experience. This grouping is unique in that it has a unique center of reference. To have such a center of reference is characteristic of many relational complexes. Examples of such centers are the center of a circle, the patriarch of a clan, the hero of a story, the boss of a political machine. "If the relation is consciousness, the centrality is just that unique kind of centrality which we find belonging to the various terms of the conscious relation, which we call collectively and synthetically the self" (p. 164). The constituents of the sense-experience are also constituents of the "external world"; it is merely this type of relationship that supervenes when the objects are sensuously experienced. By limiting the change which objects undergo in becoming experienced to the acquisition of this new type of relationship, we possess ourselves of the key that will unlock many a door.

This relationship, as is further pointed out, is always selective in character. Some facts are taken and others are left. Two things may appear as synchronous when in reality they are successive, simply because the time-interval between them happens to be omitted from the relational complex called consciousness (*cf.* pp. 170-71). False perceptions, therefore, present no insuperable difficulty. While it is true that the *suppressio veri* is a *suggestio falsi*, this fact is not incompatible with the assertion that even in false perception we see things as they are. The omission of relevant facts is something that may be empirically ascertained, and when thus ascertained may be used to eliminate the *suggestio falsi* from the situation.



Similarly, when we are concerned with facts which do not antedate the experiential situation, as in hallucinations, our procedure is strictly empirical and scientific. "The theory of consciousness as a unique selective relation then seems to work pretty well here as an hypothesis. The *empirical fact* that consciousness is a unique way of togetherness seems thus to become a *scientific principle* for the solution of a most vexed problem" (p. 171).

With this view, as far as it goes, the pragmatist has, I think, no legitimate ground for quarrel. But it remains to determine how far it really goes. Consciousness is selective, without doubt. Moreover, it is a peculiar togetherness of things. It involves a kind of centrality, to borrow the term employed by Professor McGilvary, and this centrality may properly be characterized as unique. Negatively such statements are significant and important, since they betoken a radical change of front when compared with the affirmations of dualism. Regarded from the standpoint of constructive theory, however, they merely indicate a mode of approach, which may or may not justify itself by its results. To rest in them means that we have mistaken a plan of campaign for the conquest of the difficulty.

Let us consider for a moment this togetherness or grouping which is said to constitute consciousness. Leaving aside cases of false perception, our facts by hypothesis undergo no change save that they now appear in this new relational complex. This latter presents us with two new elements, viz., that the facts in question are now marked off from the facts which are not in the field of consciousness, and that they sustain to each other the relations which give to the complex as a whole its centrality. These two statements, in fact, denote the same thing. To have membership in a system which possesses this centrality is precisely what marks off these facts from other facts. It would seem to be fairly evident that unless we take this centrality as a criterion, we have no criterion whatever by which to differentiate between what is and what is not in consciousness. Without this criterion the marking off necessarily presupposes the very fact it is introduced to explain. The grouping together of a certain number of facts would be intelligible only from the standpoint of a consciousness which was already on the scene and constituted a point of reference. The facts in question would constitute a group, marked off from other facts, because this consciousness saw fit to bestow upon them this momentary distinctiveness. Without this consciousness the marking off would become an empty name, since it would indicate no intelligible difference between the facts which are thus marked off and those which are not. "To say that consciousness is a relation is not to say much that is worth saying, unless it be followed by saying that consciousness is not a relation

*überhaupt*, but a relation which relates in just the specific way that brings about the specific things that we call our experiences" (p. 165). It seems reasonably clear that our theory must either furnish a specifiable principle of grouping or remain indefinitely in a state of suspended animation.

Such a principle Professor McGilvary discovers in "that unique kind of centrality which we find belonging to the various terms of the conscious relation which we call collectively and synthetically the self." This centrality is indeed unique, but its uniqueness is no bar to comparison and description, any more than in the case of the circle or the political machine. We might, therefore, reasonably anticipate that Professor McGilvary would enlarge on this cardinal feature, in order to show as adequately as possible just what happens to the facts when they become members of this relational complex, what transformation they undergo, or what function they perform. I may repeat that to impose this relationship *ab extra*, from the standpoint of a bystander, is not to make use of the criterion, but to leave everything where it was. A realism obtained in this way gets its conclusions by ignoring the very facts which set the problem. As against subjective idealism, for example, and the alleged subjectivism of pragmatism, the realist sometimes makes the claim that his account of the difference between "in consciousness" and "out of consciousness" respects the integrity and independence of the facts in a way that the rival theories do not. But in order to furnish this account, the difference must be kept in sight and not allowed to slip from view through the interstices of the argument. Yet I venture to suggest, in a spirit of inquiry rather than of controversy, that this is what happens in the course of Professor McGilvary's presentation.

That the relational complex called consciousness, however unique its character, can nevertheless be compared with other types of relationship is indicated by Professor McGilvary when he says: "If in an experience the relations between objects may and do have attentional prominence, why may not consciousness, which is a relation among objects, also have like attentional prominence? As a matter of fact, at times in my experience it does. For instance, 'when I am forced to contrast the relation of the objects conjoined to each other with the opposing relation between objects not conjoined' in this conscious way, it may be the *present* conjunction of objects in my *present* experience which I contrast with the fact that this sort of conjunction does not now obtain between this sheet of paper and a house-boat on the MaaNam" (p. 172). It is sufficiently evident, presumably, that if no sort of comparison were possible, the existence of the relationship would never be suspected by us. What is important just now is not the fact of comparison, but its nature.



Things are sometimes grouped in the way called consciousness and sometimes they are not. This distinction would cause no difficulty if we could suppose that both types of situation were presented in juxtaposition to an intelligence standing apart from both. But the intelligence which makes the discrimination is immersed in the facts, so to speak, and is hence called upon for an act of self-transcendence which at first sight seems mysterious enough. In some sense both situations must enter into experience in order to be discriminated from each other. It is precisely this fact which makes the elucidation of "that unique kind of centrality" called consciousness of such fundamental importance. And it is at this point that our problem may be most conveniently focused. To ignore the fact that the objects contrasted with the present experience are already within the experiential field is to overlook the very thing that calls for explanation. There is reason to think that the centrality which is supposed to differentiate consciousness from other complexes holds a purely honorific position. It marks no genuine difference between what is consciousness and what is not, because the comparing is done by a third party and from the outside.

An illustration of what is meant is furnished by the facts of memory. We can not only remember with accuracy a past occurrence, but we are also able to reflect on the difference between the original experience and the recollection thereof, and note how widely they diverge. The memory-experience can somehow achieve the paradoxical result of distinguishing between itself and the original experience, without any impossible reaching back in order to resurrect bodily the original experience and set it down side by side with the memory-experience for inspection and comparison. That is, the thing remembered must change in order to be remembered at all, since the discrimination takes place within the memory-experience and not from the standpoint of an outside observer. And this situation, it seems, is typical. The distinction between the experienced and the non-experienced must, from the nature of the case, be made within the experiential situation. The danger to which realism is exposed is that in the endeavor to maintain the independence of objects all change may be excluded and the relationship in which consciousness consists become so "external" as to deprive it of all significance. In other words, there is danger of gravitating towards an independence which can be made plausible only by comparing the experienced with the non-experienced from a standpoint external to both.

At first sight it may seem possible to flank this argument by means of a distinction. One might argue that the distinction between the experienced and the non-experienced falls within the ex-

periential field only if we define experience in an arbitrary way. If experience be defined so as to include not only what is present to sense, but also things thought about, then the proposition is incontestable, but only because it has first been made tautologous. An opponent may, however, object to this definition of experience and insist that in the case of things thought about we are not dealing with things directly, but only with their mental representatives. This, if I understand him, is Professor McGilvary's view.<sup>2</sup> He has the courage to defend a doctrine of representationism, or a "correspondence" theory of truth, in spite of the fact that such doctrines have become very unfashionable of late. He would hold, presumably, that when a person compares his present experience with facts lying outside that experience, the situation is not properly described by saying that this distinction of inside and outside is itself inside the experiential field; it lies between the experiential field and something that is not experiential at all. The present experience contains ideas which point to or represent these absent facts, but it does not contain these facts themselves.

A move of this kind, however, does not avoid the fallacy of the "external observer." The issue just raised is evidently more than a matter of definition, since it involves a theory of representation which may be seriously questioned. Let us take again the case of memory. On this ground the recollection of an event does not mean that the event itself is now experienced, though with a different "centrality," but that we are dealing with a representative which points to the event. This pointing is not identifiable with the function of leading or guiding, for these have to do with the future, whereas the pointing has its face towards the past. The leadings may verify the pointing, but are not identical with it. The self-transcendence of the pointing must, it seems, be accepted as a fact which is subject indeed to empirical tests, but which is not amenable to further analysis.

It may be remarked in passing that this distinction between the pointing backward of memory and the leadings by which memory is verified transforms the whole doctrine of meaning as held by instrumentalism. The leadings through which the verification is achieved necessarily presuppose the same sort of pointing as the pointing backward of memory; or, what is the same thing, all leadings are reduced to a rigid, static type. If we are to maintain the distinction between "present experience" and "things thought about," on the ground that things thought about are not present

<sup>2</sup> Cf. his articles, "The 'Fringe' of James's Psychology and its Relation to Logic," *Philosophical Review*, March, 1911, and "Pure Experience and Reality," *ibid.*, May, 1907.



save by representation, the type of pointing which characterizes memory must be extended to all forms of thinking. This leads back directly to the familiar transcendentalism with its patronizing interest in "transitive states" and "feelings of tendency," all of which, however, are finally dismissed as "mere psychology" and hence irrelevant to the high considerations of logic.

The difficulty that I wish to urge is that on this ground the verification of a meaning becomes an impossibility, unless we appeal once more to the outside observer. A given instance of pointing, as in memory, must be verified by other pointings, such as looking up documents, questioning other witnesses, etc. Just how these pointings are related to one another, why the verification should depend on certain pointings and not on others, is a matter of some interest, but this may be left aside for the present. It is a matter of more serious moment just now that if we follow up a given pointing and finally arrive at the goal to which it directs, we seem to find that we are no better off than we were before. The culminating experience informs us that "this is what that meant," but the "that" which did the pointing is now at the opposite pole of the pointing, and the "thing meaning" remains sundered from the "thing meant" by the whole intervening territory which we have just traversed with the original pointing as our guide. The original experience of pointing is now a mere memory; it is present in the new experience, not in the flesh, but by representation. What, then, have we gained? The first pointing has been supplanted by a second, and the claim of the latter to be the fulfilment of the former turns out to be nothing but a *claim*, since the original pointing is not present in the later experience. Here again the analogy of the outside observer is likely to mislead. The intelligence which decides the case is both judge and jury, and incidentally prosecuting attorney also, but it easily mistakes itself for an innocent bystander. If we imagine ourselves comparing the original experience with the verifying experience from a standpoint external to both, the business of verification presents no especial difficulty. But if we stick uncompromisingly to our premises, we do encounter a difficulty, the solution of which, on our present plane of discussion, is still to seek.

Considerations of this general kind are, I presume, what Professor Dewey has in mind when he says that "presentative" realism errs in treating all forms of experience as forms of knowledge. This type of realism is the offspring of the prejudice that experiential fact can be compared with non-experiential fact in this mechanical fashion. Sensory experiences, considered apart from their function as guides to other experiences, can hardly be treated as cases of knowledge on any other basis. And essentially the same assumption is

made in the treatment which is accorded these functions. The pointing experience does not give us an object which is presented as absent and as performing the task of leading or pointing, but is considered solely in terms of the pointing, *i. e.*, solely as a knowledge experience, with the result that the thing meaning and the thing meant fall hopelessly asunder. Similarly the fulfilling experience is treated as purely cognitive, as something which exhausts itself in the labor of pointing back to its symbol or representative. The identity of thing meaning with thing meant goes by the board; we become entangled with an impossible representationism which can pass muster only by its appeal to the tendency to hold the idea and its object at arm's length in order to contemplate their agreement or correspondence.

The conclusion to which these considerations point is, I think, that our realistic friends have not as yet given sufficient emphasis and elaboration to the "unique kind of centrality" which objects possess when they enter into the relational complex of experience. The "presentative" realist, in his desire to safeguard the independence of objects, accords to this centrality a recognition that is more formal than real. That there is such a centrality and that it has some bearing on the character of objects as experienced, he is disposed to admit, but having made the admission he ignores it. Professor McGilvary's centrality is invested with all the powers and prerogatives of a sovereign ruling by divine right, but with the tacit understanding that it will in no way interfere with the perfect independence of its objects. In view of the brevity of Professor McGilvary's exposition, it may be that this criticism has been pressed further than is warranted by the facts. At all events the view that our standpoint must be "internal" rather than "external" to experience leads us directly to the conclusion that fixity is but relative, and that the things we experience possess a boundless mobility. It seems worth while to try out the view which places this endless flux in the things themselves, rather than persist in the attempt to foist upon them a type of stability suited perhaps to the archangels and beings that dwell apart, but useless to an intelligence that forms a part of mundane reality.

It is no part of my present purpose to attempt an elaboration of this point of view. Time may show that it is not all clear sailing. But the whole drift of things in philosophy seems to indicate that our point of departure should be a clear recognition that experience and knowledge are events or processes in which things undergo a change. A thing is a different thing by virtue of the fact that it is experienced. This statement can of course be interpreted so as to become tautology, but is not so intended. The facts of memory seem



to furnish an instance of the sort of change which must be recognized, a change which, so far from thwarting the ends of knowing, is the very instrumentality through which these ends are achieved. This change is the stone which the builders of philosophic theory have hitherto rejected, but which has promise of usefulness as head of the corner. Questions relating to the character of things antedating experience and to the nature of the change which they undergo in becoming experienced derive most of their terrors from the assumption of the "external standpoint" which was criticized above. "This doctrine of the real efficiency of thought does not teach that thinking undoes or reverses or blots out any thing or event that has happened. It insists only that in becoming known or entering into knowledge a past act is altered in the sense that it takes on additional functions or consequences."<sup>3</sup> Similarly, the contents of a perceptual experience can hold membership in the physical order, because as experienced the objects of perception are construed with reference to their function of control. Every field of experience is thus dominated by a principle of organization, a "unique kind of centrality," in which both identity and change find a place. But it is not primarily to the cogency of this view so much as to its recognition of the character of the problem that I wish to direct attention. In view of the fact that the realist and the pragmatist hold so many conclusions in common, we may hope for a still more extensive agreement as the result of further reflection on the nature of consciousness and the "internal standpoint of experience."

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### THE INFLUENCE OF FORM AND CATEGORY ON THE OUTCOME OF JUDGMENT

CONTRARY to the statement of logicians experiment has shown that judgments of similarity and of difference are not merely the two sides of one and the same act of intellect, but involve each its own peculiar psychological processes and criteria, and that the category or the form in which the judgment is expressed, the attribute toward which it is directed, makes a considerable and measurable difference in the outcome of that judgment. The present study reports an investigation, from a similar point of view, of certain other judgments commonly passed in daily life.

Is a judgment of stupidity the exact reverse of a judgment of in-

<sup>3</sup> Moore, "Pragmatism and its Critics," pages 103-4.

telligence? Is a judgment of preference the exact reverse of a judgment of dislike? In other words, do we use the same standard in judging characteristics designated by logical opposites, ranking all specimens according to the degrees by which they deviate positively or negatively from that standard? When we arrange specimens of handwriting in an order of merit with respect to *resemblance* to a given standard hand we use somewhat different criteria from those employed when the specimens are arranged according to their *difference* from the standard. May it be also true that judgments of intelligence or of preference are based on different sets of criteria from those of judgments of stupidity or aversion? Do we like a person for certain qualities and dislike those who possess the exact antithesis of these qualities, or are our dislikes and preferences based on different sets of qualities? To discover which of these possibilities has the greater degree of probability is the main purpose of this study.

The material consisted of 25 photographs of actresses. The photographs were similar in shape, size, finish, and mount, differing only with respect to the individual photographed and the pose assumed. In selecting the photographs care was taken to avoid those of well-known actresses, in order that past judgments might not influence the results of the experiment. These pictures were ranked in an order of merit, by 10 observers, with respect to *preference*, *dislike*, *intelligence*, and *stupidity*. As the purpose was to discover the effect of the direction or category of judgment, special emphasis was laid on each category in the written instructions with which each of the observers was provided. These instructions were as follows:

#### PREFERENCE

Arrange the photographs in an order of merit, placing at the top the face you *like the most*, placing second the *face you like next best*, and so on, until the face you *like the least* is at the bottom of the series.

#### DISLIKE

Arrange the photographs in an order of demerit, placing at the top the face you *dislike the most*, placing second the one you dislike next intensely, and so on, until the one you *dislike the least* is at the bottom.

#### INTELLIGENCE

Arrange the photographs in an order of merit with respect to the *intelligence* of the face, putting at the top the *most intelligent*, next to it the next in intelligence, and so on, with the *least intelligent* face at the bottom of the series.

#### STUPIDITY

Arrange the photographs in an order with respect to the *stupidity* of the face, putting the *most stupid* at the top, next to it the next stupid, and so on, until the *least stupid* looking face is at the bottom of the series.



Five of the observers made the arrangements in the following order:

- 1st week, ranked for preference and intelligence.
- 2nd week, ranked for preference and intelligence.
- 3rd week, ranked for dislike and stupidity.
- 4th week, ranked for dislike and stupidity.

The remaining five ranked for dislike and stupidity in the first two weeks, and for preference and intelligence in the last two weeks. This precaution was taken in order to minimize the influence of practise on the results of the group averages. In every case at least a week intervened between one judgment and the next. There was no clear evidence of decided memory effect except in the case of the extremes of the series. After the fourth arrangement the observers were asked to write out a statement of the criteria used in judging each trait. The observers were all students of Barnard College, juniors or seniors taking their second or third year's work in psychology.

In making the correlations to be discussed later, the formula

$$r = 1 - \frac{6(\sum d^2)}{d(d^2 - 1)}$$

was used. The correlations were worked out between each observer's two trials (I. and II.), and between each observer's average judgment (*a*) with the group judgment (*A*), for each of the four traits. These results are given in Table I.

TABLE I  
THESE COEFFICIENTS OF CORRELATION ARE ALL POSITIVE

Observer	Ell.	Car.	Ste.	Hal.	DeN.	Str.	Bro.	Bar.	Val.	Cas.	Av.	M. V.
Correlations of I. and II.												
Preference.....	55	73	87	91	68	74	88	92	84	96	80.8	10.6
Dislike.....	57	89	86	98	87	73	84	70	86	60	79.0	11.0
Intelligence.....	71	84	90	92	78	74	86	77	91	83	82.6	6.0
Stupidity.....	77	85	89	87	83	72	73	65	82	86	79.9	6.5
Correlations of <i>a</i> with <i>A</i> :												
Preference.....	51	57	58	23	56	55	44	45	54	58	50.1	7.7
Dislike.....	50	59	64	31	43	27	57	48	63	48	49.0	9.6
Intelligence.....	32	29	32	48	43	41	32	59	26	30	37.2	8.4
Stupidity.....	54	57	55	52	62	46	62	36	42	36	50.2	8.2

Table II. gives the correlations between each order and the reciprocal of its supposed opposite (by the reciprocal is meant the inverted order, so that what was originally the bottom of the series becomes the top). If categories logically opposite are also psycho-

logically the two sides of the same act of intellect, then the correlation between preference and the reciprocal of dislike should be equal to the average of the personal consistency coefficients for preference and for stupidity. That is to say, the inverted order for dislike should coincide with the direct order for preference, and should correlate as closely with this direct order as would two trials for preference with each other. The same relation should be expected to hold between intelligence and stupidity. On the other hand, if the processes differ from each other psychologically, it would seem that the correlation between preference and the reciprocal of dislike (both standards or categories being involved) should be less than the correlations of two trials for preference or of two trials for dislike. The same, again, should hold for intelligence and stupidity.

TABLE II

Observer	Ell.	Car.	Ste.	Hal.	DeN.	Str.	Bro.	Bar.	Val.	Cas.	Average
Correlations of:											
1. Pref. and the recip. of disl.	60	89	93	94	90	57	86	78	89	83	81.9
2. Av. of pref. I. and II., and disl. I. and II. ....	56	81	86.5	94.5	77.5	73.5	86	81	85	78	79.9
3. Int. and the recip. of stup.	85	79	93	90	94	74	73	87	86	96	85.7
4. Av. of int. I. and II., and stup. I. and II. ....	74	84.5	89.5	89.5	80.5	73	78.5	71	86.5	84.5	81.2

At first glance, as the results are presented in this table, the situation does not seem to be similar to that found in the study of judgments of *similarity* and *difference*. In 6 of the 10 cases the correlation between preference and the reciprocal of dislike is greater than the average correlations of similar arrangements, and in two of the remaining cases there is no difference between the two. The average shows a small per cent. in favor of the former.

In the case of intelligence and stupidity, 7 of the 10 observers have higher correlation between the judgment of intelligence and the reciprocal of stupidity than the average correlation of similar arrangements, and the average shows superiority in this direction of 4.5 per cent.

It is apparent then that if these character judgments really have the same psychological differences as those found between judgments of similarity and difference, some factor is present in this experiment which obscures the difference.

Table III. indicates that this factor is practise, adaptation, or familiarity with the material, and that before these factors operate genuine psychological differences are disclosed. In this table the trials are not averaged as in Table II., but the first order for preference is correlated with the reciprocal of the first order for dislike,



and the second order for preference with the reciprocal of the second order for dislike. In a similar way are handled the arrangements according to intelligence and stupidity. Each of these indirect correlations is then compared with the average of the direct correlations,—that is, with the average of preference with preference, and dislike with dislike. This also is done in the case of intelligence and stupidity.

In both cases the results are clear. The correlation of the first of the positive quality with the reciprocal of the first of the negative quality is less than the average correlation of positive and negative qualities with themselves. In the case of preference and dislike there is no exception to this rule, and the average difference amounts to over 13 per cent. In the case of intelligence and stupidity 3 of the observers are exceptions, but the other 7 show the difference clearly; a difference which averages, for the 10 observers, over 5 per cent. Averaging the two types of judgment, in the lower part of the table, there is no exception to the rule, and the average superiority amounts to over 9 per cent.

TABLE III

Observer	Ell.	Car.	Ste.	Hal.	DeN.	Str.	Bro.	Bar.	Val.	Cas.	Average
Av. pref. (I. and II.) and disl. (I. and II.) . . . . .	56	81	87	95	78	74	86	81	85	78	79.9
Pref. I. and recip. of disl. I. . . . .	22	81	83	91	66	43	77	56	80	67	66.6
Pref. II. and recip. of disl. II. . . . .	59	80	90	95	92	55	79	86	82	90	80.8
Av. int. (I. and II.) and stup. (I. and II.) . . . . .	74	85	90	90	81	73	79	71	87	85	81.2
Int. I. and recip. of stup. I. . . . .	72	78	88	88	87	53	52	73	77	92	76.0
Int. II. and recip. of disl. II. . . . .	83	78	88	90	91	69	86	84	83	87	83.9
Av. pos. and neg. (I. and II.) . . . . .	65	82	88	92	79	73	82	76	86	81	80.5
Pos. I. and recip. of neg. I. . . . .	47	80	86	90	77	48	65	65	79	80	71.3
Pos. II. and recip. of neg. II. . . . .	71	79	89	93	92	62	83	85	83	89	82.3

The influence of practise, adaptation, and familiarity with the material is shown by comparing the third row of coefficients in each group of Table III. with the second row of the same section. In these third rows the correlation of the second direct arrangements with the second of the reciprocal arrangements is seen to move up, in each case, and very clearly in the average, to the correlation of two direct arrangements for a given trait. In fact the coefficients are usually a little higher. Very evidently, then, in the beginning of the experiment, before the two categories have been brought together in the consciousness of the observer in any explicit way, the judgment of a negative quality is not the exact antithesis of that of a positive quality. A judgment of dislike, that is to say, is not merely

the reverse aspect of a judgment of preference, but a new kind of judgment, with perhaps different criteria, and certainly with a different outcome. The same must be said of judgments of intelligence and stupidity. The form of expression, the direction or category of the judgment, has a measurable influence on the outcome of that judgment. But as the experiment proceeds and the two categories are both explicitly brought to the consciousness of the observer, and after practise, adaptation and familiarity with the material have played their part, the difference between the two categories tends to fall away, and the form or direction of the judgment no longer influences its outcome.

This tendency is the same as that remarked in the study of the judgments of similarity and difference in the case of handwriting, where it is found that with practise and repetition the two judgments come to resemble each other, and the inverted order for *difference* to agree more closely with the direct order for *similarity*.

This tendency is further shown by the figures in Table IV., in which the correlation of the first two trials of a given observer is compared with the correlation of his last two trials, regardless of the category of judgment concerned. With a single exception the latter coefficient is always higher than the former, the average of the ten observers showing a superiority of 7 per cent.

TABLE IV

Observer	Ell.	Car.	Ste.	Hal.	DeN.	Str.	Bro.	Bar.	Val.	Cas.	Average
First two trials . . . . .	63	79	89	92	73	73	79	68	84	73	77.0
Last two trials . . . . .	67	87	88	93	85	74	87	85	88	90	84.2

TABLE V

## PERSONAL CONSISTENCY COMPARED WITH GENERAL JUDICIAL CAPACITY

Observer	Ell.	Car.	Ste.	Hal.	DeN.	Str.	Bro.	Bar.	Val.	Cas.	Average
Average correlations of I. with II. . . . .	65	83	88	92	79	73	83	76	86	81	80.6
Average correlations of a with A. . . . .	47	51	52	39	51	42	49	47	46	43	46.6

TABLE VI

Ratio of Best to Poorest	Preference	Intelligence	Dislike	Stupidity	Average
Correlation of I. and II. . . . .	96:55	92:71	98:57	89:65	1.51:1.00
Correlation of a with A. . . . .	58:23	59:26	64:27	62:36	2.15:1.00
Average . . . . .					1.83:1.00



TABLE VII

Correlations of			Averages of		
I. and I.:					
Preference .....	80.8	10.6	Subjective judgments .	78.9	10.8
Intelligence .....	82.6	6.0	Objective judgments ..	81.3	6.2
Dislike .....	79.0	11.0	Positive judgments ...	81.7	8.3
Stupidity .....	79.9	6.5	Negative judgments ..	79.4	8.8
a with A:					
Preference .....	50.1	7.7	Subjective judgments .	49.5	8.6
Intelligence .....	37.2	8.4	Objective judgments ..	43.7	8.3
Dislike .....	49.0	9.6	Positive judgments ...	43.7	7.9
Stupidity .....	50.2	8.2	Negative judgments ..	49.6	8.9

The introspection was of little value, consisting for the most part of mere generalization. But where specific criteria were given the presence of the two standards was apparent. For example, Observer Hal.—“I like eyes looking straight at me. I don’t like head or eyes to have unnatural pose, because it looks affected. I can’t abide frowsy hair. I like smiling eyes and mouth and a high forehead.” Here the first two criteria do seem to be opposed—eyes looking straight at one are not usually eyes in an unnatural pose. But other criteria show the two standards. The observer “can’t abide” frowsy hair, but she does not specifically admire smooth coiffures. She likes high foreheads, but expresses no positive dislike for low ones.

Some incidental points brought out in the results are worth noting. In Table V. the personal consistency of each observer is compared with her correlation with the group average. The coefficient (.06) shows that there is absolutely no correlation between the two. This seems to indicate an absence of general judicial capacity.

In Table VI. the ratio of best to poorest is given, and the familiar ratio of about 2:1 found.

Table VII. seems to show that the more subjective judgments of preference and dislike are more variable and uncertain than the more objective ones of intelligence and stupidity. The coefficients are slightly lower on the average and the mean variations are larger. This is true whether personal consistency or judicial capacity is concerned. The coefficients for the negative judgments of dislike and stupidity also show a higher variability than do those of the positive judgments of preference and intelligence.

### SUMMARY

1. Judgments which are grammatically opposite (as preference and dislike, intelligence and stupidity) involve, in the beginning of the experiment, psychological processes and criteria which are not

identical. The form, direction, or category of the judgment exerts a measurable difference on its outcome.

2. As the experiment proceeds the processes and criteria move to a common plane and the two types of judgment resemble each other more closely. This movement to a common plane is apparently the result of repetition, adaptation, and familiarity with the material, and of the fact that the two categories, hitherto implicitly distinct from each other, are now brought explicitly together in the consciousness of the observer.

3. The result of practice and familiarity with the material is to increase the personal consistency of the observer's judgments.

4. Introspection suggests different criteria for judgments which are grammatically or logically only two sides of the same intellectual act.

5. There is seen to be no correlation between personal consistency and agreement with the group average.

6. The ratio of best to poorest, in both these respects, is the familiar one of about 2:1.

7. Subjective judgments (of preference and dislike) are more variable and uncertain than the more objective judgments (of intelligence and stupidity).

8. The coefficients of "negative" judgments (dislike and stupidity) are more variable than those of the "positive" judgments (preference and intelligence).

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## DISCUSSION

### SOMETHING MORE ABOUT INVERSION: A REJOINDER

I AM much obliged to Dr. Karl Schmidt for his critical notice of my article on "Inversion."<sup>1</sup> He has added to the evidence that inversion is practically worthless. For note carefully what his equations prove. From "All  $A$  is  $B$ " he proves that if  $\bar{A}$  exists, and if  $\bar{B}$  exists, then the  $\bar{A}$  which is also  $\bar{B}$  exists. To put it in concrete terms, from "All men are mortal" he proves that if not-men exist and if immortals exist, then not-men who are also immortals exist. The inverse is a simple categorical proposition, "Some not-men are immortal." Dr. Schmidt succeeds only in proving a very complex, doubly-conditioned hypothetical conclusion. This difference between the real inverse and what he actually proves is probably one

<sup>1</sup> This JOURNAL, Vol. IX., page 232. My article is in Vol. IX., page 65.



of those "mere trifles" which symbolic logic glides over so sweetly. But he has no doubt achieved all that the case admits. Given the same problem that he attempted, I do not think any man could do better. That is just the reason why his attempt shows that the task of validating inversion is hopeless. Inversion has been masquerading as an immediate inference, yet it seems to require six equations, to say nothing of some notes, for its proof, or semblance of proof. An elastic sort of *immediate* inference!

I have remarked that it is difficult to find concrete examples of inversion which are not silly. "Inversionists for the most part prudently stick to symbols."<sup>2</sup> Dr. Schmidt is an example of this wise caution; he sticks to symbols. I do not say that he is an example of an inversionist. I am afraid he would repudiate that title, and decline to be classed with the people to whom it properly applies. He is like them only in eschewing concrete reality in the treatment of inversion. It is not irrelevant, therefore, to inquire into the meaning and value of his symbols, and to ask whether it is legitimate to turn our backs on concrete reality. A gentleman with whom I conversed about inversion, himself the author of a text-book of logic,<sup>3</sup> said, "You can't prove anything by examples." But, if we may believe Professor F. C. S. Schiller, you can't prove anything without examples. "Formal Logic in fact *means nothing*."<sup>4</sup> The truth of a proposition lies wholly in its *application*. "The meaning of '*S is P*' thus is strictly *ad hoc*, and depends on its *application to a particular case*."<sup>5</sup> Propositions are somewhat like clothes; they must be tried on. A bland, persuasive shopman says, "This is a fine coat, the very thing you want." I shake my head; I haven't tried it on. And the fit is not all; many things go to make it *my* coat. In like manner propositions must be *fitted* to a specific instance. Trying on, application to the case in hand, is the only way of making sure of their meaning, their truth. But this is not formal logic; very far from it.

Here is a ringing challenge to formal logic to defend its very existence. Much more is symbolic logic, that *ultra-formal* phase of formal logic, put to the proof. The fact that symbols are absolutely empty of relevant meaning may account for some astonishing feats of legerdemain in the "new logic." Meaningless things may be juggled into a semblance of proving one thing just as well as another. This may be also one reason for those discordant notes which sound aloud from the symbolist camp. They all alike fairly run riot in

<sup>2</sup> This JOURNAL, Vol. IX., page 67.

<sup>3</sup> Dr. P. K. Ray.

<sup>4</sup> *Mind*, No. 82, April, 1912, page 246.

<sup>5</sup> *Loc. cit.*, page 248.

"pure form," but they differ widely among themselves. If the "quarrels" of logicians are "amusing," what shall we say of the domestic brawls of that happy family, the symbolists? "Mr. Venn has collected some two dozen ways in which '*a* is *b*' has been put in logical (*i. e.*, symbolic equational) form."<sup>6</sup> Some symbolists soar so far into the blue empyrean of "pure form" that they are really in danger of being lost to mortal ken. Even their own kith and kin advise us not to take them "too seriously." In Browning's "Christmas Eve" he finds the breathing decidedly bad in Zion Chapel, but worse is in store for him; his German professor claps him under the air-pump and takes his breath clean away. So with some of the symbolists; they are quite too ethereal for ordinary mortals. That alleged "contemptuous attitude of the average philosopher towards algebra of logic," of which Dr. Schmidt complains, may be, after all, merely instinctive shrinking from the air-pump. We can not forget the piteous last gasp of that poor little mouse, the victim of our heartless rage for knowledge in student days. Give us a whiff of the vital air of real logic, even if it is not quite "pure."

A grave question as to the soundness of equational logic is this: Is it legitimate to ignore the radical qualitative distinction between mathematical units and logical units? The former are quantitative only; the latter are not merely quantitative, but also qualitative. They *mean* something. Now equational logic rubs off this fine delicate bloom of quality from logical units, leaving them like stale fruit in a shop window, fit only to be reckoned in bulk by the bushel or cart-load.

Even if we concede that symbolic logic can ever make good its own *raison d'être*, what follows as to its bearing on inversion? Merely this: It enables us to prove a far-fetched hypothetical conclusion which has some semblance of the actual categorical inverse. But when all is said and done it will be found that inversion is no more at home in equations than in real logic. Symbolists have really no occasion to use the name. From their point of view it is, as Dr. Schmidt rightly says, "a mere trifle." The calculus of classes flattens out all class relations to one dead level, just as it degrades logical units from their high estate as members of "the quality" to the dead level of mathematical quantitative units. All classes, the positive, the negative, even the mythical "null" class wholly empty of content, are alike in importance; and no one class relation has pre-eminence or distinctive emphasis over another. To single out one of

<sup>6</sup> "Johns Hopkins Studies in Logic," page 24, footnote.

<sup>7</sup> Witness, for instance, Mrs. Ladd-Franklin's remarks about Mr. Bertrand Russell, this JOURNAL, Vol. IX., page 109.



them and call it the inverse, or one inverse from the host of inverses of *A*, *E*, *I*, and *O*, is quite uncalled for and foreign to the whole tenor and spirit of symbolism.

I have shown that inversion is silly and illicit in real logic, and Dr. Schmidt shows that in symbolic logic it is a mere trifle hardly worth notice, and certainly not worth a distinctive name. His discussion and mine together constitute a complete demonstration of the futility of inversion. The ambitious attempt to foist it upon logical science as a new form of immediate inference coordinate with conversion and obversion is doomed to failure.

Dr. Schmidt says that my examples<sup>8</sup> "violate the condition  $B \pm O$ ." This is not true of the first one on that page; and of the others, while it is true, it is not fatal. They are still perfectly sound illustrations of inversion-silliness. As inverses of *E* they are formally correct, and yet they are grossly absurd. Inversion itself is at fault, not my examples of it. Perhaps Dr. Schmidt will be so good as to give us some examples which are not silly. The proof of the pudding is in the eating. Inversion must be tried on, and my examples of trying it on show its abounding capacity for misfits.

The first example (p. 67) illustrates the absurdity of proving immortality from mortality, and it does not violate the condition "*B* exists." Surely we mortals exist if anything does. Is there a life beyond? "Yes," says the inversionist; "I can prove it. All men are mortal, therefore not-men are immortal." But here emerge those pesky "If's," "If not-men exist," "If immortals exist," and so forth. In a conclusion thus hampered with conditions there is small comfort for an anxious soul seeking proofs of immortality.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Principle of Individuality and Value: The Gifford Lectures for 1911.*

B. BOSANQUET. London: The Macmillan Company. 1912. Pp. xxxvii + 409.

The tradition of idealism as a defensible and significant body of truth still lives in English philosophy. The present volume of Gifford lectures must be reckoned among the most vigorous and profound of the writings of that English school of idealism which counts as its leaders Green, the Cairds, and Bradley. Idealism is, in one sense, a tradition. That is to say, certain attitudes, concepts, and experiences have been seized upon in the history of thought, held fast to, and declared to be of prime importance for the interpretation of nature and of life, re-

<sup>8</sup> This JOURNAL, Vol. IX., page 67.

ardless as to what the detailed facts of experience may prove to be. It is because of this that, to the critic, idealism has so often seemed essentially a dogma, in the sense in which none of us approves of dogma. And this is why we are so often assured that idealism is foreign to the empirical temper of the scientific interest which, so we are also assured, is wholly at the mercy of facts of experience as the future shall reveal them to be. Hence, when Mr. Bosanquet says: "I do not conceal my belief that in the main the work has been done, and that what is now needed is to recall and concentrate the modern mind out of its distraction rather than to invent wholly new theoretical conceptions"—when the author says this, we are tempted to say that this sort of philosophy has allied itself with the old dogmas and absolutisms, and is not for such as we.

If, however, a system of philosophy is an interpretation of central, constant, and obvious characteristics of experience which are present from day to day and from age to age, then one may indeed have greater confidence in the work of previous thinkers, provided that their survey is based on "what man recognizes as value when his life is fullest and his soul at its highest stretch" (p. 3). That there are "great and simple facts," obvious things which "depend not on immediacy, but on centrality and dominance," and that the hardest philosophy consists in attempts to interpret such central things—this is emphasized at the outset by Mr. Bosanquet. "The great philosophers, it will be found, are just those who have succeeded in discerning the great and simple things" (p. 6).

One will do well to keep this in mind in dealing with idealism. Idealism is the deliberate and philosophical expression of an attitude to life and experience and reality, an attitude which idealism believes to be rationally justifiable because of one dominant and central characteristic of reality. Mr. Bosanquet's lectures are in substance a commentary on this characteristic of experience which is so central that we may safely build our philosophy upon it. It is what our author well calls the "arduousness of reality," the impossibility of falling back upon any single nucleus of fact or feeling as a stable possession. To discover the truth of things a pilgrim's progress is necessary. Or, stated negatively, one may say that idealism is chiefly a warning against a too confident trust in immediacy. The author especially notes three types of immediacy, three orders of being which as solid immediate data are exploited by much contemporary thought. Radical empiricism and realism have their *fact*, mysticism and irrationalism their *life*, and personal idealism and much popular metaphysics their *self*. "The solid fact or object of perception; the indeterminate living or duration which defies the notional grasp; the isolated personality, impervious to the mind of others, seem all of them to mark arbitrary refuges or timid withdrawals from the movement of the world" (p. 13). But the central and obvious lesson of all experience is the way in which all these apparently solid nuclei become dissolved, share in that "nisus towards a whole, that search for completeness, that remoulding of a cosmos by its own yearning for totality" which constitutes the essence of life, of logic, of art, and of spontaneity.



It is not so much this radical doctrine of flux and thorough mediation which calls forth opposition to idealism as it is the idealist's identification of this life and movement of things with the life and movement of thought. On this issue more than on any other does idealism depend. For the realist, thought is either a replica of things or else for the neo-realist a purely cognitive relation in which neutral things, indifferent to thought, become known together. For Bergson, the irrationalist, thought is a more or less mechanical repetition of identical elements, remote from life and from real activity. For the biological pragmatist thought is but another name for the response of the nervous system to the environment. Mr. Bosanquet is at his best, and, in the opinion of the reviewer, on wholly solid ground when he maintains that typical instances of the work of thought are not to be looked for in decaying sense or in tautological analyses or in any region foreign to the world of active experience. A work of art, a great business organization, the economic life of a great city, the moral life of society—all of these show us what thought is. "The object which thought in the true sense has worked upon is not a relic of decaying sense, but is a living world, analogous to a perception of the beautiful, in which every thought determination adds fresh point and deeper bearing to every element of the whole" (p. 58).

Thus far, the idealism set forth in this volume could not fairly be called "intellectualism." But absolute idealism has gone beyond this distrust of sheer immediacy and this confidence that the best instance of life and continuity and movement towards a whole is to be found in the work of thought. Absolute idealism has made the leap from this discovery of the "nisus towards a whole" as the central character of experience and the resulting rational character of a concrete universal to the well-known doctrines of the absolute. It is a fascinating and tempting step to take. But I suspect that something is likely to happen when this step is taken, which justifies the epithet of "intellectualism" and the feeling that idealism has suffered thereby. What happens seems to be that the very significant concepts of nisus, of activity, of end, of purpose, in short, the moral concepts, are threatened with extinction in absolute idealism.

This can well be seen by a brief consideration of a topic about which Mr. Bosanquet has much to say. His volume contains a vigorous polemic against any teleology or active moral character being attributed to such consciousness as we are familiar with. Some difficulties which idealism invites by so doing can be seen by noting certain expressions used by the author. These expressions are strikingly similar to views about consciousness whose spirit and import are quite the opposite of idealistic. I quote a few of the passages referred to. "The only possible course, as it seems to me, is simply to accept conscious process as the essence of a certain kind of physical process" (p. 179). "Mind, so far as it can be in space, is nervous system; nervous system, focused in the nisus towards unity, which a standing miracle associates with it, is finite mind. . . . There is nothing—no part nor point—in the one that is not in the other" (p. 219). "Mind has nothing positive of its own but the active form of totality; everything positive it draws from Nature" (p. 367). "Every

self is the representative center of an external world" (p. 382). And because of this it follows that "the self which experiences as well as that which is experienced, is content" (p. 323). Now wherein lies the difference between such a view of consciousness as these passages suggest and the theory which in general can be called the biological view of consciousness? For both views, consciousness is wholly *ex post facto*; it expresses and illumines a situation which is to be defined in non-conscious terms as nervous system and organism responding to environment, as, in any case, a fragment of *external* nature. For both views, consciousness is a spectator of achievements in which it, as something unique and active, has had no share. Yet Mr. Bosanquet would undoubtedly be the first to deny that his views about mind are similar to the biological theories advocated by pragmatists and neo-realists. He believes that he is maintaining the position that, compared with the physical and biological world of nervous system and environment, "mind is the more complete and superior system" (p. 218). But if indeed mind is the more complete and superior system, then mind *does*, in some sense, add something of its own. And if "thought is the world builder," and is the "very essence of free activity," if the "ultimate tendency of thought is to constitute a world," then the structure and activity of mind or thought are *not* borrowed from any external system, nor are they the illumination of what is merely a preexisting situation. It is not difficult to see the animus of the account of mind which Mr. Bosanquet gives. He is chiefly concerned to refute the concept of "naked consciousness," or the stream of life, creating determinations apart from sufficient reason." Endow consciousness with active agency, let it contribute anything new, let the mind-world be a richer world than the nature-world in some significant way, and apparently you introduce an unaccountable and capricious factor. You revive the animism of primitive man and the pseudo science of vitalism. Is, now, our choice limited to these two types of idealism,—an absolute idealism where the concept of mind is freed from the concepts of purpose, activity, and achievement, from the ethical concepts, and an animism with its supernatural, active agencies and its harsh dualism? The English idealism represented by Bradley and our present author supposes that it is, and naturally chooses the former in the interests of science, continuity, and intelligence. The result is that idealism gives the impression of ignoring the moral consciousness and the ethical concepts. It is condemned as "intellectualism," and invites by way of reaction every variety of irrationalism and pragmatism.

The truth would seem to be that the lesson to be learned from the distrust of immediacy, the "arduousness of reality," is the truth that the vocation of man's intelligence is a vocation of moral activity, of making facts everywhere transparent to reason, and if this ethical element drops out idealism suffers. And this moral factor inevitably will drop out unless somewhere in consciousness there exists an activity which is autonomous and not the illumination of an external cosmos. But this activity must be defined in such a way—and here we can sympathize entirely with the author—as not to imply the ordinary external and dualistic account



of consciousness which is too often given by defenders of teleology. This is indeed the chief task of constructive idealism—to maintain the moral significance of just that “arduousness of reality” which is so adequately dealt with by Mr. Bosanquet, and yet not to revert to the harsh dualism and crude externality of ordinary vitalism and interactionism.

This criticism need not blind us to the main positive achievement and value of these lectures, which lie in their brilliant and vigorous vindication of the fundamental idealistic attitude, which refuses to build upon any supposed solid immediate, and their vindication of the concreteness and life of thought.

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*La Philosophie de William James.* TH. FLOURNOY. Paris: Saint-Blaise. 1911. Pp. 219.

The mind and heart of the author are equally engaged in the composition of this enthusiastic labor of love. No one could understand James better, nor expound his philosophy more ably. The early pages of personal portraiture will interest students and admirers of the philosopher as much as the more exegetical part. These pages throw valuable light on the philosophy because this is an expression, not merely of the intellect, but of the mind, the whole character, of the philosopher. The portrait is a wonderful harmony of scientist, artist, moralist, lover of his race. We comprehend the dominant note of seriousness in his character in the light of his parentage and childhood influences. Four convictions became the foundation of his character: human freedom, the final reality of evil, the existence of God and the possibility of the salvation of the world, the absolute triumph of good over evil, through the cooperation of man with God.

James's scientific genius received its first great awakening under the influence of Agassiz, and from him James learned reverence for fact, concrete and particular. “The hours I spent with Agassiz so taught me the difference between all possible abstractionists and all lovers in the light of the world's concrete fulness that I have never been able to forget it.”

Whether or not a true philosophy can be a system of doctrine (which such anti-intellectualists as James and Bergson deny), the remarkable excellence and value of this book seem to me to consist in its application of the philosopher's “vision” to a consistent interpretation of all sorts of aspects and departments of experience, expressing them luminously in terms of its own comprehensive principle. What is this vision? It is not, of course, the rejection of monism or absolutism. Much philosophy that James condemns as “intellectualistic” is pluralistic. It is not even his pragmatism. This is an ethical disposition more than a philosophical generalization. James's vision, says Professor Flournoy, is his radical empiricism. James thinks empiricists have not pushed their method to its proper limit, and have consequently fallen, like the rationalists, into vicious abstractionism. “All that is experienced is real; all that is real is experienced”—this formulates the doctrine, though the philosopher

himself abhorred such general propositions. To experience, as James means the term, is to feel, to perceive, to test by trial, to live through. The formula therefore trenchantly distinguishes James's vision from the antipodal Platonic formula: All that is rationalized is real; all that is real is rationalized.

The psychological problem of the unity of consciousness is the starting-point of James's philosophy. His solution of this problem is to criticize the conditions of the problem. These conditions are an aggregate of elements of consciousness—the problem, their synthesis. There is no such problem, says James; for there are no such conditions. Consciousness is no aggregate of elements, but a continuum, in which past, present, and future enter together into the given fact. Our states are not abrupt. The quality even of the thunder-clap depends on that of the silence in which it has its being, without which it would be no thunder-clap. "The continuity, the identity, the unity of our consciousness or of our personality are things immediately and concretely felt, lived, experienced, and consequently real just in the measure in which they are given to us" (p. 74).

Continuity, identity, unity—these are of the formal or relational factors of knowledge, "intellectual categories." But they are data of experience: they are of the same status as the factor of sense quality. The domain of experienced fact includes a certain hanging together of fact in so-called logical relationships, whose nature is just so conceptually ideal as we find it, and no more—that is to say, never absolutely so. There is no more room for the transcendental object than for the ego. The absolute, the unknowable, force, matter, substance, the thing-in-itself—experience knows them no more than it knows the ego. "A sincere philosophy . . . accepts the given reality and sets itself the task only of studying its details and characters; its presence will ever remain an enigmatic fact, alogical, irrational, impenetrable to our thought" (pp. 86, 87).

The radical empiricism of James thus consists of three points: the *postulate* that philosophy can concern itself only with experience: the *observed fact* that the relations of things are matters of particular and direct experience as much as, and no more than, the "terms" related; that ideas and things are of the same stuff, experience: and the *generalization* that the parts of our phenomenal world are continuous with each other; there is no transcendental "cement."

If there is anything empirically obvious it is multiplicity. No wave of the stream of the world-process is quite like any former one, much less identical with it or deducible from it. James was always an enemy of determinism, originally from instinct, since he could take life seriously only as a real struggle, of uncertain issue, not as a farce, of prearranged *dénouement*. Renouvier afforded him a point of departure for a reflective justification of his belief; but this justification remains in effect the appeal to experience. Freedom is a lived experience, an ultimate fact.

Choice is everywhere, and every choice a new modification of the whole of existence. Optimism and pessimism are equally deterministic; either the salvation of the world can not fail, is necessary, or else it is impossible



—in either case, only because the world-process is mechanically determined. Either view is fatal to morality, for one makes effort vain, the other, superfluous. So James's tychism results in meliorism. The world's history is essentially uncertain. Each of us is constantly mending or marring it. "Our moral nature, taken seriously with all its needs—this is the beginning and end of the philosophy of James" (pp. 114, 115).

Now, any conception of the universe, capable of motivating a truly human system of conduct, is theistic. Any atheistic philosophy paralyzes the faculties by destroying our intimate personal relation to the universe. But radical empiricism can yield no metaphysical principle like the God of scholasticism, of such attributes as unity, aseity, perseity, infinity, necessity, immutability, etc. Such attributes are not real, for they are not experienced. Neither can James's God be that of the idealistic pantheist—universal consciousness, the omniscient thinker, the absolute. Such a God were a monster, for one to whom evil is absolutely real. James's God is that of the naïve pietist, the "Higher Presence." He by no means must needs be the "All." He may well be only a part of the universe, if so be he is its most ideal and profound part, and has the requisite affinities with our moral nature.

God, so conceived, James finds given in experience. Sudden conversions, extraordinary bodily and mental cures, are impressive indications of his existence, unaccountable on any other hypothesis. With such a God, we must be coworkers for the prevailing of our ideals. For every man has a certain fundamental disposition toward the universe and life, his way of feeling and acting toward it. This disposition presupposes not knowledge; knowledge conditions the expediency, the apt utility, of conduct, not its general direction. The direction is conditioned by faith, the will to believe, the will that one's ideal shall be reality.

In the *Résumé*, minor opinions of James come in for brief but interesting notice, such as his attitude toward spirit mediumship and immortality, with a tentative cosmogony sketched in the article entitled "Confidences of a Psychological Researcher." There are also a few pages on the relation between James and Bergson. The obvious similarity of their anti-intellectualism and temporalism does not extend to their metaphysics. "Nothing is more opposed than such a vision of things [Bergson's original *élan vital*, a profoundly monistic conception] to that of James: a primordial chaos, without trace of unity, order, harmony, or law," out of which chaos reality progresses toward a state of union and harmony. This is the very inverse of the Bergsonian process, which starts from a real unity and evolves divergently, in indefinitely increasing dispersion of elements.

The author's review<sup>1</sup> of "The Varieties of Religious Experience" is added as an appendix.

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<sup>1</sup> *Revue Philosophique*, Volume LIV., pages 516-527.

*The Desire for Qualities.* STANLEY M. BUGH. London and New York: Henry Frowde. 1911. Pp. 322.

The student of the social sciences is apt to feel a vague dissatisfaction with their abstract character as they are ordinarily presented to him. They give him, to be sure, a sufficiently rational and coherent explanation of social phenomena, but he constantly finds himself asking: "What of it? What do these happy and true generalizations point to in the way of actual control of social forces in the direction that I see to be good and desirable?" In other words, he wants an applied social science, and the opportunity of deducing from its applications what we are apt to call, in a phrase so useful and just that it bids fair soon to degenerate into mere cant, a philosophy of life. It is pleasant therefore to find a psychologist who also feels this need, and is willing to break the ground towards outlining the bearings of the most modern psychological and sociological science on the moulding of the human personality.

In this extraordinarily suggestive little book, "The Desire for Qualities" the author suggests a new science, which he calls directive psychology. This science, by studying and analyzing those more subtle reactions of human personality to social stimuli which the social sciences ignore, will be able to give practical and advisory aid in the formation of some such philosophy of life as he defines to be "a connected theory as to what qualities of personality are worth the trouble necessary for their attainment." He seems justified in assuming, as he has explained in another book,—*"The Direction of Desire"*—that a more frank and general curiosity about the rich variations of human personality, and recognition of the absorbing interest in life which such a curiosity brings, will free introspection and self-consciousness of that morbidity with which false social standards have tainted them. The qualitative psychologist will collect a sort of *memoria technica* of thought and behavior that will enable him to act as expert adviser to those afflicted with the minor ailments of the soul or to those who are living a spiritual life at a low and uninteresting level. He will contrive methods by which the paths of individual improvement may be made easier, discover what ideals are suited to individual temperaments, and, in short, learn the art of conferring psychological benefits. His aim will be the enrichment of personality, and he will study the art of supplying stimulus and of discovering latent capacities of happiness and new potentialities of character by a dispassionate study of the reaction of different types of personality to ideas and ideals, and of ways in which sympathies and affinities can best be awakened and sustained. By helping men to a proper knowledge of their aims and by teaching them how to work most intensively and effectively in attaining them, this qualitative psychology can render large services to men. It can teach them by psychological methods to effect an improvement in their own characters and in those of others and solve the problem of how their desires may be most profitably directed.

This necessarily generalized outline of the theory gives no conception of the vigor and charm of the writer's argument, of his extraordinary in-



sight into human nature, and his grip on the realities of life. The book is full of passages of comment on modern ideals and social standards that are penetrating and original. It is a demonstration that analysis of the qualitative side of life is possible without descending to symbolism or the vagaries of "New Thoughtism." The style has much the same happy combination of scientific validity, personal interest, and grip on the practicalities of common experience that make the works of William James so tremendously appealing. Fortunate indeed is a new branch of social science with such an expositor!

R. S. BOURNE.

COLUMBIA COLLEGE.

### JOURNALS AND NEW BOOKS

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE, Band 25, Heft 3. April, 1912. *Aristophanischer und geschichtlicher Sokrates*—III. (pp. 251–274): H. ROCK. — It is more probable that Aristophanes's caricature "hits off" pretty well the historical Socrates, than that the genial figure portrayed by Plato and Xenophon should have excited the intense animosity of the satirists of the period. *War Heraclit "Empiriker"?* (pp. 275–304): W. NESTLE. — A vigorous rejection of E. Löw's revolutionary efforts to show that in the term Name (*onoma*) Heraclitus defended the empirical standpoint against the rationalistic doctrine centered in the Parminidean concept, *logos*. *Die kosmogonsichen Elemente in der Naturphilosophie des Thales* (pp. 304–331): J. DÖRFLER. — The relation of Thales's doctrine to the theogonies and cosmogonies before and after him, especially to the Orphic tradition. *Philosophiegeschichtliche Arbeit in Polen von Anfang 1910 bis Mitte 1911* (pp. 332–344): J. HALPERN. — Prominence is given to the influence of W. James on Polish philosophy (p. 339). *Jahresbericht: Einige wichtigere Erscheinungen der deutschen Literatur über die Sokratische, Platonische und Aristotelische Philosophie 1905–1908* (pp. 346–356): H. GOMPERZ. — Most space is given to W. Kinkel's *Geschichte der Philosophie*, Zweiter Teil, who is accused of making the Socratic philosophers say what he thinks they should have said. *Rezensionen* (pp. 357–372): W. SCHULTZ, *Dokumente der Gnosis*: B. JORDAN. Guttman, *Kant's Begriff der objectiven Erkenntnis*: B. JORDAN. O. Apelt, *Platon's Dialog Theätet*: R. PHILIPPSON. Th. Ruyssen, *Schopenhauer*: E. BRÉHIER. O. Hamelin, *Le système de Descartes*: E. BRÉHIER. E. Boutroux, *William James*: E. BRÉHIER. *Erklärung, Josef Popper (Lynkeus) betreffend. Die neueste Erscheinungen. Historische Abhandlungen in den Zeitschriften. Zur Besprechung eingegangene Werke.*

REVUE PHILOSOPHIQUE. June, 1912. *Il y a une biologie générale* (pp. 561–582): F. LE DANTEC. — Biology exists as a deductive science, i. e., a science with established principles suitable to furnish bases for reasonings. *La conscience collective et le bien obligatoire* (pp. 583–609): A. BAUER. — Knowledge of the morally good is obtained from observation

of experience. Respect for the rights of others under social conditions is the source of obligations, and their direction is defined by collective reason. *Les états mystiques négatifs* (pp. 610-628): G. TRUC. - Negative mystical states present only partial aspects of our feeling manifestations, and correspond to certain psychological and moral maladies. *Revue générale. Revue générale de philosophie des sciences*: A. REY. *Analyses et comptes rendus*. Rabaud, *Le transformisme et l'expérience*: LE DANTEC. W. MacDougall, *Body and Mind*: G. SELIBER. F. Simiand, *La méthode positive en science économique*: P. F. Dr. P. Sollier, *Morale et moralité*: D. PARODI. F. Le Dantec, *L'égoïsme, seule base de toute société*: G. PALANTE. *Revue des périodiques étrangers*.

Boutroux, E. *The Beyond that is Within and other Addresses*. Translated by J. Nield. London: Duckworth and Company. Pp. xvi + 138. 3s. 6d.

Rabaud, E. *Le Transformisme et l'Expérience*. Paris: Félix Alcan. 1911. Pp. vii + 315. 3.50 francs.

Semon, Richard. *Das Problem der Vererbung "Erworbener Eigenschaften."* Leipzig: Wilhelm Engelmann. 1912. Pp. viii + 203. 3.20 Marks.

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## NOTES AND NEWS

DR. LOTUS D. KAUFMAN, supervisor of the training school of the Eastern Illinois Normal School at Charleston, has been appointed professor of education at the University of Illinois.

PROFESSOR GOMPEREZ, of the University of Vienna, will give four lectures at the Collège de France during the first fortnight of November, on the "Maitres de Platon."

PROFESSOR HENRI PIÉRON has been appointed director of the psychological laboratory at l'Ecole des Hautes Etudes of the Sorbonne, succeeding Professor Alfred Binet.

MR. A. A. BOWMAN, lecturer in logic at Glasgow University, has been appointed professor of philosophy in Princeton University, succeeding Professor J. G. Hibben, recently elected president of that university.

MR. EDGAR A. DOLL has been appointed associate psychologist in the department of research of the Vineland Training School, Vineland, New Jersey.—*Science*.

DR. MELBOURNE S. READ, professor of psychology at Colgate University, has been appointed vice-president of that institution.

PROFESSOR E. C. WILM has been called from Washburn College to the chair of philosophy and psychology at Wells College.

HORATIO W. DRESSER, Ph.D. (Harvard), has been appointed professor of philosophy in Ursinus College.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE NATURE OF CONSCIOUSNESS. I

THE present philosophical situation in America may be characterized by saying that, whereas formerly the subject of our debates was whether or no objects existed independently of consciousness, now the question that exercises us is rather, whether consciousness exists independently of objects. Many writers are found who deny that consciousness exists, except as a relation between objects or a later way of viewing them—objectivists, as perhaps these writers may be named. Other writers maintain the separate reality of consciousness, but in a sense that can only be called dualistic. In the present series of articles<sup>1</sup> I shall attempt to suggest a view which combines the chief points of both these theories; holding, on the one hand, that consciousness is a distinct existence from the object of which we are conscious, and, on the other hand, that it is another object in the same world.

If we are to come to an understanding in this matter, the first essential is to recognize that the term "consciousness" is currently used to denote two entirely different things. When psychologists speak of "consciousness," they mean by the word our feelings, emotions, desires, and sensations, or rather the whole which these at any moment form—something of which it would be absurd to doubt that it is a datum of experience. When logicians or epistemologists use the term, what they refer to is the bare cognizing or being aware—something whose empirical status is so questionable, that, as we have seen, many reputable thinkers deny its existence. In other words, we must learn to distinguish sharply between *FEELING* and *AWARENESS*.

Neither of these current meanings of "consciousness," strange to say, represents the original sense of the word.

1. What this was may be seen by considering the circumstances under which we still, in correct speech, use the phrase "to be conscious." We are always said to be conscious "of" something—which

<sup>1</sup> The first two articles were read as a paper before the Oxford Philosophical Society in May, 1911.

shows that to be conscious is in some way to know. Nevertheless knowing and consciousness are far from being synonymous. I know that two and two make four, but I can not be said to be "conscious of" the fact. We do not speak of ourselves as "conscious of" absent things—of what we remember, conceive, expect. Nor do we say, ordinarily, that we are "conscious of" present material objects, such as the fire in the grate. We *do* say we are "conscious of" a pain, or a desire. Thus it appears to be our feelings, our states of mind, of which we are said to be conscious. Where this might seem not to be the case, further reflection will show that really it is so after all. For instance, when I speak of being "conscious of" the beating of my heart, I use the phrase because it is the sensation rather than the material occurrence to which I refer. Similarly we say, "I was conscious of something going on in the next room," "I was conscious of something strange in his appearance," where the exact nature of the objective fact is imperfectly made out and our attention is therefore drawn to the sensation that serves to reveal it.

These examples show that *we are properly said to be conscious only of our own states of mind*. Consciousness, in the original sense of the word, is not simply the same thing as cognition or awareness, but is a special case of it: it is the awareness, sometimes accompanying cognition, of the states of mind by means of which we cognize. In other words, it is what we are nowadays accustomed, by an objectionable tautology, to call "self-consciousness." It is another name for introspection, or for introspection plus its object.

2. This being so, how comes the term to be currently used for the object minus the introspection?

When modern psychologists began to study the mind in a scientific way, they found the literature of the subject full of references to things which they could not verify in experience, such as the "soul," "faculties," etc. In their effort to limit investigation to the given facts, they were led to use, as a name for these in their entirety, the term "consciousness"—by which they meant that which consciousness, *i. e.*, introspection, reveals. But, not having any definite theory as to the nature of introspection, and being disposed to regard the awareness it involves as an ultimate property of the introspected feelings, they soon lost sight of the fact that introspection is necessary to make "consciousness," and applied this name to the feelings, or rather to the whole which they form. Consciousness thus ceases to be an activity or function, and becomes a substance, a being. It is in this sense that the term is constantly used by contemporary writers, indeed the original sense has almost become obsolete.

A most regrettable feature of this usage is that it seems to as-



cribe to feeling, as part of its essential nature, that function of awareness which, as these articles will tend to show, it has only accidentally and in certain connections; nay more, to fasten upon it a self-awareness which the feeling itself never has, but which is a name we give to awareness of it on the part of a later feeling. But this usage is now so firmly established and well-nigh universal that it seems hopeless to attempt to struggle against it.

3. Still further to increase the confusion, logicians and epistemologists have of late years—apparently through a misunderstanding of the psychologists—taken to using the term “consciousness,” not for awareness of our feelings, nor yet for the feelings, but for the bare function of awareness which feelings sometimes exercise. “Consciousness” in this sense is only another word for cognition—*i. e.*, awareness of an object in that object’s presence; indeed, it were much to be wished that philosophers would desist from using the term in this sense, and use “cognition” instead.

The debate as to whether “consciousness” exists seems to refer exclusively to the bare function of awareness, and even to that conceived in a certain way. But it is certainly not any such bare function that forms the subject-matter of psychology. Logicians and epistemologists, occupied as they are with knowing, seem to have an inadequate place in their systems for the facts of feeling. Even if we grant the current thesis that awareness does not exist except as a relation between objects, we shall have to insist all the more strongly that “consciousness” in the sense of feeling does exist.

Thus our inquiry seems to fall naturally into two parts, in the first of which we must consider feeling, and in the second awareness.

## I. FEELING, OR PSYCHICAL EXISTENCE

My object in this section is to examine whether feeling is an existence; or, to put the question otherwise, whether there are existences which are psychical in their original character. Only in this sense does it seem to me possible to assert the existence of consciousness.

Objectivism, in one of its forms, tells us that psychical facts are artificial products, due to a transformation of experience. What originally exists in experience is simply objects (material objects, one is tempted to understand), and states of mind come about by our taking these objects subsequently in a new set of relations. I shall not stop to argue that in experience the original fact is not simply an object, but an object perceived, so that the psychical side of experience is as original as the physical. The point I wish to make is that, even if only objects, and no perceptions, existed originally, still it would not be possible for any one to hold that the objects

constituted the whole of experience: no one could deny that there were also feelings and volitions, contemporaneous with the objects, and not objective but subjective or psychical in their character. Those who make the difference between the physical and the psychical a difference of two ways of taking the same matter of experience reason as if there were no other kind of experience but that which has to do with physical objects; the "psychical" of which they are giving an account is mere awareness of these objects, not that psychical composed of feelings, desires, and other similar states which the psychologist considers. Yet, even granting their doctrine of awareness, objects, originally, are not the whole of experience, but there is a part of experience that can never be considered as objective or physical, but that is psychical originally.

When altered so as to make room for these necessary facts, the objectivist view changes to the proposition that experience consists of two parts, one part being objects and the other feelings and will. But where, in that case, do perceptions come in? Are there not such things, and, if there are, are they not contemporaneous with the objects perceived? Is it a possible position that one part of the subject-matter of psychology, namely, feelings and will, exists as a portion of experience and is psychical originally, while the other part, namely, perceptions, or, in general, cognitive states, exists originally in the form of objects, and becomes psychical only subsequently, by being taken in a different set of relations? Must we not rather hold that perceptions too exist as psychical originally, and is not this granted, really, in the admission that objects are not merely objects but experiences?

There is another feature of experience, more closely connected with objects than are the feelings and will, which necessitates the same conclusion. This is the *clearness* with which objects are given, or exist for us. A reader gradually dropping asleep is less and less clearly conscious of his book. Here is a character attaching to the objective part of experience, which yet can never be construed as part of the object. We may think to dispose of it as merely a difference in the cognitive function or in the activity of thought; in truth it is primarily a difference in the feelings or sensations by means of which objects are cognized. It belongs, like the feelings and will, not to experience in the sense of that which is perceived, nor yet to experience in the sense of the mere awareness, but to experience in a subjective or psychical sense. When we consider that this character appears to be that by which experience exists (there being no experience when the reader has fallen sound asleep), we see how essentially psychical in its nature experience is, and how false is the notion that it is ever pure object. What is true is merely that



at the first moment only objects are *known*. The view in question is an example of the common fallacy of assuming that only what is known at any moment exists at that moment—of turning the time and manner in which things are known into the time and manner in which they exist.

The construction put in the preceding upon objectivism, or rather upon this particular form of objectivism, represents perhaps a superficial view of its meaning. I can conceive objectivists declining to admit the point for which I have been contending—the existence of subjective elements in experience which are in no sense objects—and attempting to construe the facts in a different way. The notion of elements of experience that are not experienced will seem to them non-empirical and even self-contradictory. They will describe it as a view which, if it were true, could not be known to be true (to which the retort might be made that, if material objects exist when we do not perceive them, this is something that can not be known upon the evidence of experience). And the construction they put upon the facts will be that all the elements of experience are originally objects, but of these objects there are two kinds, physical objects and feelings. In other words, they will admit the existence of feelings and desires so far as they are objects, but not so far as they are supposed to exist in the absence of awareness of them. An experience of which we are not aware—a feeling we do not feel—they will hold to be a monstrosity, a contradiction. To say that all experiences are originally objective is simply to say that they are experienced. And this will seem to these critics to be the only necessary postulate of a philosophy of experience.

With all due respect, I venture to think that this postulate involves an error. You say that experiences are experienced; but what is the meaning or justification of this passive form? Where is the subject or cognitive activity in virtue of which this experience is an object? The argument is, of course, that if a subject existed it would be non-empirical. This, in my opinion, is the inevitable result of putting the *object* in the wrong place: identify the object with experience as an existent—*i. e.*, with the sensuous matter that constitutes the medium for perceiving—and any subject that existed would have to be, so to speak, on this side of experience, that is, outside it, and so non-empirical. Whereas, if the object is on the other side of experience—beyond it, though not out of its cognitive reach—experience itself, considered so far as it is psychical, may be what we mean by the subject.

The only way to decide between the objectivist position and that which I have just indicated will be to undertake an analysis of ex-

perience, with a view to determining the relation between it and its objects.

*Notion of the "Image"*

In analyzing experience, it is important we should take as our starting-point some fact that is perfectly plain and unequivocal. If we ask ourselves what fact of sense-experience is most so, the answer must, I think, be: the *image*. Let me explain what I mean by the image.<sup>2</sup> I mean, in any experience, just so much as is sensibly discoverable and no more. A few examples will make my meaning clear.

Suppose I am looking at the moon in the daytime. The image here is the pale crescent or disc, flat, small, and whitish, which is all that vision actually shows me. If the object is a house and I see one side of it only, the image is a variegated plane, more or less rectangular in shape. If it is a sheet of paper lying before me on a table, the object itself may be square, but the image, as I look down obliquely, is a white surface having the form called a rhomboid. If it is a saucer, the saucer itself is round, but the image is oval.

Now of course, in all these cases, what I *perceive* is not the image, but the moon, the house, the sheet of paper, the saucer. I may even perceive the saucer as round, the sheet of paper as square, though my images are oval and rhomboidal. But it would be quite erroneous to suppose that, because the image is not perceived, it is non-existent. On the contrary, it is the one hold, so to speak, which I have on the object. Even when I am quite absorbed in the perception of the object, the image continues to exist, and, if I retain the same point of view, continues unchanged. It is the only thing in perception which is, as we may say, *open to inspection*.

Indeed, the essential mark of an image is that it is open to inspection. By this of course I do not mean merely visual inspection. The sound of a bell, the fragrance of a flower, the feeling of ice when you touch it, are equally examples of images. These are all things one can sensibly find. If the concept of the image is to have this latitude, it would of course in strictness include pleasures and pains, emotions and desires, which also are accessible to our inner gaze. I wish, however, to restrict the term "image" to those sensible ex-

<sup>2</sup> I regret that I do not see my way to use Messrs. Moore and Russell's term, "sense-datum," though I agree so largely with their philosophy. My reasons are that I do not want to have it taken for granted (1) that the sense-datum is a datum in sense-perception, (2) that it is a datum essentially. After much thought, I can find no better word than M. Bergson's "image." But I do not take for granted, as he at once does, that the image is identical with or a part of the object. In fact, I wish to take nothing for granted at all, and to use the term simply as a designation for a fact.



periences which are employed in cognition, calling the rest merely "feelings."

Here, then, is something about which one can speak with a fair chance of being understood by everybody, whatever his philosophical opinions. One can point out fact after fact about the image, and be sure, so far as they are really facts, of carrying everybody with one. Surely there could be no more useful form of philosophical investigation than submitting our theories, if it were possible, to the test of facts.

### *Immediatism and Mediatism*

But we must ask questions, if we want the facts to answer; and so the first question I would raise is *as to the relation between the image and the object*. What do we mean by the "object"? Do we mean the image—either the single image by itself, or perhaps a whole of which the different images form part? Or do we mean something different?

The view that the object is identical or consubstantial with the image represents a doctrine which I shall call *immediatism*. The image, as compared with an object lying beyond it or cognized by its means, is an immediate fact. The doctrine, then, that this immediate fact is the object, or a part of the object, may be fitly called immediatism. Note that immediatism is an element common to naïve realism and Berkeleian idealism. For, though one of these theories regards the object as a material fact which continues to exist when it is no longer perceived, while the other regards it as a mental fact which exists only so long as it is perceived, both conceive the object as something sensibly given, and mean by it in fact nothing more nor less than the image or a whole composed of images.

Opposed to this doctrine is another, according to which the object is something grasped by means of the image, and either existent beyond it or at least distinct from it, the image being merely a medium or vehicle for its cognition. Thus, in memory and imagination, the object remembered or imagined is evidently distinct from the image by means of which we remember or imagine it. This is the *mediatist* view. Mediatism as such does not involve any decision of the question, whether the object is a real existence or a purely ideal fact. Mediatism is a common element in post-Kantian idealism and in what may be called critical realism. The former conceives the object as an ideal point of reference to which images are referred; material things become mental constructs—or, as Kant put it, the intellect creates nature. By "critical realism" I mean the view that the intellect, or rather, I am afraid we must say, the senses, create the form under which nature appears. The object itself, on this

view, exists beyond the image, being another part of the same world to which the image belongs; but the image brings it before the mind and determines the form under which it shall appear.

*Mediatism must not be confused with what is known as "the representative theory of knowledge,"* or, as I shall briefly call it, representativism. According to the latter, the image is the thing primarily known, it is the immediate object of the mind in sense-perception; and the real object that lies beyond it is known only by inference and representatively. Under these circumstances no legitimate inference would lie to the real object; it could not be known at all. Contrast with this the purport of mediatism. Mediatism does not conceive the image as being an object of knowledge at the moment—I pointed out that, though the image exists, what we perceive is the object: it conceives it solely as the medium or vehicle of knowledge. And while, no doubt, it holds the object to be known mediately, it does not on that account consider it to be known the less directly: for the cognitive relation passes straight from the image, which is the part of the mind concerned in knowing, to the real object. Representativism results from assuming a "soul," "ego," or "consciousness" distinct from the image and contemplating it, or from supposing that the image contemplates itself. In truth the image is not contemplated, but is the part of the mind which enables it to contemplate.

*The issue between immediatism and mediatism seems to me to represent the most fundamental dichotomy in the theory of cognition—one lying deeper than the traditional issue between idealism and realism.*

Now let me point out certain facts about the image that have a bearing on this issue.

As we move to and fro with reference to any object, the image constantly changes, and it changes in a different way according as our motion is in the line connecting us with the object, or lateral. Let us consider the results of lateral motion first.

Suppose I am looking at a square house some distance away. When I am directly in front of the house, my image is square. As I move to the right, the right side of the house becomes higher than the left, and the image changes from a square to a trapezium. It gets more and more trapezoidal the further I go to the right. Pretty soon a new side of the house comes into view, having the shape of a trapezium whose left side is higher than its right. This side grows gradually larger, changes from a trapezium to a square, and then from a square to a trapezium again whose right side is higher than its left. Then it grows smaller and at last disappears, giving place



to a third side, which goes through the same changes. Thus I can pass completely round the house, viewing it in turn from every angle, and all the while my images will have been constantly changing their shape and proportions, even though each side of the house is an exact square.

If I move towards or away from the house, my images change in a different manner. They get smaller and smaller, or else larger and larger. In the latter case, a moment comes when I can no longer see the entire front of the house at once. If I keep on, the images still continue to expand, so to speak, and the part of the front I can see becomes smaller and smaller. At last a point is reached beyond which—though the object is even more truly there—I can get them no longer. Visual images, that is; for I can now get tactile images, through my hands or face coming in contact with the house.

This, so to speak, geometrical variability of the images is paralleled by their variability as respects color. The shade of an object differs accordingly as it is seen in sunlight or in shadow, by daylight or by artificial light. As daylight fades all colors approach nearer and nearer to blackness. Touch seems to be of all senses the least changeable in quality.

Recall now that the images so far mentioned were due solely to seeing and touching the surfaces of objects, and that their solid contents reserve further possibilities of seeing and touching on an unlimited scale. There are also the indefinitely numerous images which we may receive from objects through other senses. Yet, despite this infinite multiplicity and variety of possible images, the object is deemed to be one!

Now I think we may dismiss at once the possibility that any image is *the whole* of the object we perceive through its means. What we have to consider is whether the different images are *parts* of the object. And, if this is to be so, we have evidently got in some way to put them together or combine them. *The images have got to be combined into a whole which shall be the object.*

This is true, whether we give to our immediatism a realistic or an idealistic form. For the naïve realist, evidently all the images which we might get exist whether we get them or not, and coexist with the image actually present as parts of a whole. But, for the naïve idealist, as we might call the Berkeleian, the consequence is just as necessary. Though images, according to him, do not exist when they are not present, they must pass over into the image that is present by physical relations; for the physical world, whether it consist of material or of mental stuff, must have continuity. In short, the idealist must put his world together out of possible images, as the naïve realist

puts his together out of actual ones. For, conceive our senses to be so enlarged that we could take in the entire physical world at once: though consisting of sensation, it would needs be a continuous whole, a panorama. Then the Berkeleian, no less than the naïve realist, is bound to combine the images.

*But can they be combined?* Let us turn again to the foregoing examples, and consider the images first as respects shape. Take the different shapes a thing has when seen from different points of view—square, trapezial in various degrees, with now the right side and now the left side the higher, in the case of the house; round, or oval in various degrees, in that of the saucer: how could images having such contradictory characters possibly be combined? The case is even clearer when we take the different sizes of a thing as seen from different distances: there is no possible way of putting the different-sized images together so as to form the object. Finally, take the different shades of a thing when seen in different lights, and combine them if you can!

The enterprise of combining the images into an object is as if one had a great many photographs of a building, taken from every conceivable angle and at every conceivable distance, and should attempt to construct or reconstruct the building by piecing them together. Evidently the photographs are *views* of the building, not *parts* of it. Each of them represents the building entire. Just so with the images. If you doubt this, imagine yourself in half a dozen places at once and looking from all of them at the building—and ask yourself what you would see.

Even had we chanced to fit all the visual images together, we should not know what to do with the images of other senses. For these, on the hypothesis in question, must be parts of the object too. Sounds, no less than sights, come in the first instance objectively, as events in the physical world. Touches come as the solidity or pressure of objects, and not as mere subjective experiences. Similarly with tastes and smells. If the world is to consist of images, room must be found in it for these images also. But how you are going to join these various images with each other or with the visual ones so as to form a whole, I confess I can not imagine. To me it seems that a world formed out of all actual and possible data of sense would be a monstrosity, a chaos. It is only in the soul that sights, sounds, tastes, smells, and touches get on together harmoniously.

To conclude: the notion that all the different images of a thing which we get at different times could be fitted together in such a way as to form the thing is illusory. *The images are uncombinable.* They could not all coexist simultaneously in space. They are mutually contradictory in the reports they give of the object, and



hence can only succeed each other in time. Empirically that is all they ever do. They pass over into each other as we move towards or away from an object, or at right angles to it. They grow into each other temporally. And, since their empirical relation is a temporal one, the medium in which we must put them together, if we wish to do so, is time, not space. But, in that case, they can not be parts of the object; for the parts of the object coexist in space. In truth the images, taken in the objective way in which we have been taking them thus far, are not parts of the object but aspects or views of it.

One conclusion seems to stand out clearly from our discussion thus far, and that is that idealists are at least so far right, that the image is *an intermittent fact*. For, if the image were not intermittent, all possible images would have to exist at once, and then the difficulty of combining them would return. On the other hand, we have seen that the image can not be identified with the object, and therefore we can not admit idealists to be right in their idealism.

We passed rather lightly over the alternative that what we mean by the object might be the single image; let us consider the facts which make such a view impossible. The single image that has the best claims to be identified with the object is what may be called the "standard image." This is the image that we get when we are close to the object and in the best position for viewing it. When naïve realists and Berkeleians reason about perception, the "object" they have in their mind's eye is, I am convinced, the standard image.

But the hypothesis that the object is identical with the standard image is ruled out by a number of considerations. In the first place, the object may be viewed from many sides, and there are therefore many standard images; and, since the object is one, or its plurality at least not that of the images, the two can not be identical. In the second place, the image changes as we move without the object changing, and therefore, again, the two can not be identical. Even when we get the nearest (visual) image, we recognize that we are still a certain distance away from the object. Vision is by its very nature a cognition of things from without. Touch brings us much closer to the object itself. If objects are to be identified with images, tactile images should be the ones chosen. But even touch remains still on the outside.

In short, so long as we remain spatially separate from the object, we can not get it as an image—get an image, that is, which shall be *it*. If the object is to be an image, it will have to be the image we should have if we could get bodily into it and *be* it, reducing the distance and the difference between ourselves and it to *nil*. Would that be an image, or something like an image? I am

quite prepared to think so. Only, two differences must be pointed out. In the first place, we can not do this; it would involve a complete departure for the conditions of sense-perception. In the second place, if the object is such an image, it is one which, unlike the images we have been considering thus far, exists whether you and I have it or not. That is to say, it is not, like most images that we do not have at this moment, a mere possibility for you and me, but is an actual image in itself. But my plan was to employ the term "image" for the sensible experiences you and I have in perception.

To our query as to the relation between the object and the image, the facts have now returned an unequivocal answer. All attempts to identify the object with the image have failed. The image can not be construed either as the whole or as a part of the object. *The object is quite other than it*—in other words, immediatism has been shown to be untenable, and mediatism in some form to be true. We can not yet say in what form. The object may be a real existence beyond the image. Or it may be only an ideal entity distinct from it. What we are now sure of is that the image is merely a medium for cognizing it.

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## DISCUSSION

### IN RESPONSE TO PROFESSOR MCGILVARY

WITH the editors' kind permission, I shall group together my responses to the three articles which Professor McGilvary has been kind enough to devote of late to my writings.<sup>1</sup> I shall take them in the order of their publication.

1. Regarding my article in which I argued that if the ego-centric predicament marked a ubiquitous fact and so was a true predicament, it left the controversy between the idealist and the realist insoluble and, in fact, meaningless, I should like to say that so far as I know there is nothing in that article which attributes to Professor Perry the belief that it is a true predicament. I had no such intention; it was the situation, not Professor Perry's views, that I was dealing with; and besides I was not sure what his attitude was, as there are things in his writings that could be interpreted both ways. I certainly never thought of arguing that a realist *must* accept the

<sup>1</sup>"Realism and the Ego-Centric Predicament," *Philosophical Review*, May, 1912; "Professor Dewey's Awareness," this JOURNAL, Vol. IX., page 301; and "Professor Dewey's Brief Studies in Realism," this JOURNAL, Vol. IX., page 344.



predicament as real; although I was convinced (and still am) that any realism which regards the self, ego, mind, or subject as necessarily one of two terms of the knowledge relation can not escape the predicament. So far as Professor McGilvary's argument is concerned, *if* the predicament is a predicament, he has fallen into a fallacy which, upon retrospection, I think he will find as amusing as he finds, upon occasion, my logic. He quotes the following from Professor Perry: "The same entity possesses both immanence by virtue of its membership in one class, and also transcendence, by virtue of the fact that it may belong also indefinitely to many classes." In comment, Professor McGilvary adds: "This means that when  $T$  stands in the complex  $TR^o(E)$  it had 'immanence': but when this same  $T$  stands in some other complex  $TR^nT'$ , it has 'transcendence' with respect to the former complex." *If* the predicament is genuine, a moment's reflection will make it obvious that the last formula is not complete. It should read  $TR^nT'R^o(E)$ . Any known relation among things, *if* knowledge involves a relation to an ego, is itself in relation to the ego.<sup>2</sup> That with respect to the subject-matter of knowledge, realism has the advantage over idealism of recognizing the importance of the relations that things sustain to one another was explicitly recognized in my article.<sup>3</sup>

2. In the second article, Professor McGilvary asks me two questions. In reply to his first, I would say that he is right in suggesting that I included "organic inhibitions" within the generic term "organic releases"—a careless way of writing. His second question is not so easily disposed of: namely, "Why are these 'organic releases' called 'the conditions of awareness' rather than awareness itself?" The passage of my own upon which Professor McGilvary bases his question reads as follows: "Of course on the theory I am interested in expounding the so-called action of 'consciousness' means simply the organic releases in the way of behavior which are the conditions of awareness, and also modify its content." Professor McGilvary's

<sup>2</sup> Since the text was written, Professor McGilvary's review of Perry's "Recent Philosophical Tendencies" has appeared (*Philosophical Review*, July, 1912). In this review Professor McGilvary states the point succinctly and vividly in this way: "How can we discount what is *ipso facto* counted in the very act of discounting?" (p. 466). This relieves Professor McGilvary from any imputation of incurring the fallacy mentioned above. But it makes me even more uncertain than before as to just why and how my article fell under his criticism.

<sup>3</sup> "Nevertheless, I do not conceive that the realistic assertion and the idealistic assertion in this dilemma stand on the same level, or have the same value. The fact that objects vary in relation to one another independently of their relation to a 'knower' is a fact, and a fact recognized by all schools." This JOURNAL, Vol. VIII., page 551—the article with which Mr. McGilvary is here dealing.

difficulty is a natural one: the passage should either have expanded or not appeared at all. I was alluding to the views of those who hold that "consciousness" acts directly upon objects. Since my own view appears similar to this doctrine and has, as matter of fact, been identified with it, I threw in the above-quoted passage. My intention was to state that the difference made in objects was made not by a distinct or separate entity or power called consciousness, but by the distinctive type of behavior that involves awareness. The passage as I wrote it is worded with an unfortunate accommodation to the view I was criticizing. What I should have brought out was, first, that "consciousness" is short for conscious or intelligent behavior; and, secondly, that this kind of behavior makes its own distinctive difference in the things involved in its exercise. The unfortunate accommodation to which I refer (and which gives point to Professor McGilvary's query) is the seeming acceptance on my part of a dualism between organic action and awareness of an object. Cancelling this concession and remaining true to my own point of view, the distinction between organic action and the object known is replaced by the distinction of unconscious and purposive behavior with respect to objects. Strictly speaking, accordingly, upon my view the "organic releases" are neither conditions of awareness nor the awareness itself. They are a distinguishable element in intelligent behavior, "awareness" being another distinguishable element. I hope this makes my real meaning clear.

3. I have to confess that I am surprised by Professor McGilvary's last article. It starts by quoting from me (p. 345) a passage in which I state that until the epistemological realists have "considered the main proposition of the pragmatic realists, viz., that knowing is something that happens to things in the natural course of their career, not the sudden introduction of a 'unique' and non-natural type of relation—that to a mind or consciousness—they are hardly in a position to discuss the second and derived pragmatic proposition that, in this natural continuity, things in becoming known undergo a specific and detectable qualitative change." So far the quotation from my article. Then follows immediately this amazing statement of Professor McGilvary. "The realists criticized are guilty, then, of believing that knowing is a sudden introduction of a 'unique' and non-natural relation." I call it amazing because I know of no principles of conversion, obversion, contraposition or any other mode of interpreting a proposition by which the passage quoted is transformable into what Professor McGilvary makes out of it. *Idealists* hold that knowledge is a unique and non-natural relation of things to mind or consciousness, and they make this belief



the basis of the doctrine that things thereby have their seemingly physical qualities changed into psychical ones. This idealistic doctrine has been attributed to pragmatists; at least it has been attributed to me, as possibly Professor McGilvary may recall. That realists are not in a position to consider the actual nature of the pragmatic doctrine that knowing makes a difference in things till they have dissociated the premisses upon which it rests from the premisses upon which the idealistic conclusion rests, may, I think, be stated without being turned into a statement that realists are "guilty" of holding the obnoxious doctrine.

So far as this portion of his article is concerned, it seems to rest upon the supposition that I was hitting at some person or persons, instead of examining a position. In talking about presentative realism, I thought I made it clear that by presentative realism I meant the doctrine that knowledge is presentation of objects, relations, and propositions to a knower, such presentation occurring (according to this kind of realism) both by perception and by thought. I can assure Professor McGilvary (and others, if there be others that need the assurance) that I never supposed that my criticism applied to any except to those to whom, by its terms, it does apply. Mr. McGilvary says: "Mr. Dewey has, in the commendable way so characteristic of him, made his criticisms as impersonal as possible." I could gladly have foregone the compliment if this impersonal examination of a problem had been taken as, in good faith, of the essence of the article. The identification of mind, soul, with the self, the ego, and the conception that knowledge is a relation between the object as one term and the self as the other, are perhaps the most characteristic and permeating traits of the doctrines of modern philosophy. As yet the realists, with two partial exceptions, have not explicitly developed a theory regarding the self—or subject—and its place or lack of place in knowledge. The problem seems to me important enough to repay attention.

In the latter part of Mr. McGilvary's article, there is a point presented which does not depend upon dubious mind-reading of my intentions. In my earlier article I had stated "the very things that, from the standpoint of perception as a natural event, are conditions that account for its happening, are from the standpoint of perception as a case of knowledge, part of the object that ought to be known, but is not." Mr. McGilvary questions the "ought"—questions, in fact, is a mild term. It denotes, according to him, "*a priori* legislation," "sheer dogmatism," "licentious intellectualism." Before doing penance in sackcloth and ashes, I will remark that *ought* sometimes means "ought as a matter of logical conclusion from the

premisses." It was in that sense the ought is used in this passage, so that if I am in error my sins are not of the kind mentioned, but consist of inability to connect premiss and conclusion properly. To go into that matter would involve pretty much a recapitulation of my entire article. I content myself here with pointing out that I was dealing with the doctrine that a seen light is, *ipso facto*, a knowledge (good or bad) of its cause, say an astronomical star, and with the bearing of this doctrine upon the idealistic contention concerning the numerical duplicity of the star and the star as "known" in perception—that is, the immediately visible light. And my point was that if the seen light is *per se* knowledge of the star as a real object, the physical conditions referred to can not be appealed to (this "can not" is intended in a purely logical sense) in explanation of the deficiencies and mistakes of the perceptual knowing, since they are, according to the doctrine, part of the object known by the perception. Mr. McGilvary's illustration regarding a wedding and the events that lead up to it is interesting, but not relevant, as there is no contention, so far as I am aware, that the event called a wedding is, *ipso facto*, a knowledge of that which caused it. It is somewhat "amusing" that the illustration fits perfectly what I said about the adequacy of the naturalistic explanation when applied to the happening of the perception as an event, but has no visible tie of connection with the doctrine that the perception is, *ex officio*, a knowledge of the "real" object that produced it.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*William James and other Essays in the Philosophy of Life.* JOSIAH ROYCE. New York: The Macmillan Company. 1911. Pp. ix + 301.

What survives in any philosophic system is not so much its dialectic adequacy as its temperamental promptings. People do not embrace an *ism* for reason, but become reasonable by embracing an *ism*. A particular formula then becomes a genuine philosophers' stone, whose virtue it is to dissolve the dross of experience in the alembic of argument and to transmute its baser metal into the pure gold without alloy of canon or of system. These observations are commonplaces, I know. But no one can fail to feel keenly the deep and living truth of them who reads this book by Josiah Royce, with its familiar arguments so rejuvenated by the freshness of new contexts and new experience, its somewhat stern but not joyless piety so suffusing every evoking occasion, lifting it by the force of personality from the realm of utterance to the realm of worship, so wide



the vistas caused to cluster about it, so deep the feeling that links them to the center. The book is made up of occasional pieces—an address before a learned society, a commencement audience, an undergraduate religious body, a congress of philosophers, a clerical assembly. The diversity of these groups is striking, but not less so than the unity of the lesson brought to them all, and the harmony and completeness with which occasion is assimilated to doctrine, so much so that the two are not to be separated, and one lives in the other as do the tones of a melody or the words of a sentence. Each piece is, in sum, a complete miniature of the great vision, a fully representative member of the self-representative system.

Admire as one must the esthetic excellence of such an interpenetration of vision with datum, the feeling is none the less inevitable that the admirable thing exists only by the rape of its individuality from the datum. In each instance the thing as it is is made over into the thing as it ought to be, and its intrinsic nature, "fragmentary," perhaps, but for all that something to be envisaged and appraised in and for itself, is absorbed in a "larger view," to be sure, lovely, but death to what enters it. To those who are interested in things as they are this is a defect, but it is a defect shared by all compensatory philosophies, and most philosophy is compensatory. It portrays a cosmos which is more loyal to desire than to perception. Perception shows a highly diversified world distinctly not made for man, inwardly discordant, a changeful flux, wherein life is a struggle to live, and human values are often lost, and when won, even at great cost. Philosophic "reality," on the contrary, from Plato to Royce is unified, harmonious, spiritual, eternally changeless, the very essence of human value, the ultimate and utter satisfaction of human desires. Such a "reality," which is biologically an ideational elaboration of the central goal of all that struggles to maintain itself—that vital equilibrium with a propitious environment which experience is always upsetting—thus designates the perennial excellences which the mind most desires, and becomes the transmuting formula of philosophic and religious reconstruction. So the world is to be thought, and the effort of most thinkers in the history of thought has been *to prove what is empirically not so*—that the world is one, of spiritual substance or spiritually regulated, and secures the eternal conservation of the being and freedom of the human mind. Systems offering such proof are compensatory: they pay to our desires, for the insolvencies of the actual, with promissory notes on the eternal. They respond to human wishes and either ignore the conditions which determine the satisfaction or disappointment of these wishes, or transmute and reconstruct them, designating these actualities as *appearance*, and reserving the eulogium of *reality* for that which is not, but is desired. This latter is then taken to be the secret and all-satisfying heart of existence.

This substitution is at once the pathos and the glory of the mind. It would be interesting, were there space, to trace the historic processes which culminate therein, to exhibit the causes of their persistence, to specify their effect on the progress of free thought. What is here to the purpose, however, is alone the mutative power which makes every act of thought

on the part of a spirit whose force is their force a very miracle of transubstantiation. Though he be just as justice and sympathetic as love, nothing that he touches retains its own contour or nature, nor can. Thus, pragmatism has never had, perhaps, a fairer, more sympathetic or learned critic than Royce. For him, if for anybody, criticism has always meant judgment, not destruction. No one has been more intent than he in conserving whole as much of pragmatic doctrine as might be. And yet—to me, at any rate, all that is distinctive of pragmatism seems to dissolve under his handling and when he is done quite another thing appears bearing its name.

It may be said that this is the general outcome of philosophic argument concerning an opposition, but surely analysis is not transmutation, and again, the same results appear in the papers where pragmatism is not in issue. Take first the discussion of "what is vital in Christianity." It appears that what is vital are the incarnation and the atonement. But the incarnation and the atonement as these are manifest in the mythology and history of Christianity? Not so: the incarnation and the atonement as poetic tropes for fundamental conceptions in the Roycean idealism. "First, God wins perfection through expressing himself in a finite life and triumphing over and through its very finitude. And secondly, our sorrow is God's sorrow. God means to express himself by winning through the very triumph over evil to unity with the perfect life; and therefore our fulfilment, like our existence, is due to the sorrow and triumph of God himself. These two theses express, I believe, what is vital in Christianity" (p. 183). The God here, be it observed, is not the God of the Christians, that is the Roycean absolute. His finite life is not the life of Jesus Christ, it is any and each empirical existence. The sorrow and evil are not those arising through freedom and original sin, they are the absolute inevitable "rule of the fame" of the far nobler Roycean "solution" of the "problem of evil." And the triumph and salvation are not the consequences of man's belief and God's free grace, they are involved inexorably in the absolute's nature. In sum, "what is vital in Christianity" turns out to be not Christian at all.

A still more striking example, because of the more radical inner difference of the mutatives, appears in the commencement address on "Loyalty and Insight." These two views of life are confronted—naturalism with loyalty, which designates anew and significantly Professor Royce's *lebensanschauung*. According to naturalism ideals are alien here on earth: "In no ease . . . does the real world essentially care for or help or encourage [them]." The aim of life is to "be free from superstition, then; and next avoid false hopes" (p. 65). Loyalty, on the other hand, "is founded not upon a decision of nature's supposed mechanism, but upon a study of man's own inner and deeper needs. It is a doctrine about the plan and business of human life." It appears in the light thereof that "the study of science is a very beautiful and human expression of a certain exalted form of loyalty" (p. 83). But now; the study of science is and leads to most often just that decision upon nature's supposed mechanism which is the essence of naturalism, so radically contrasted with



loyalty; its programme is exactly and supremely to be free from superstition and avoid false hopes. What difference, then, between naturalism and idealism? None. But the conclusion contradicts the premise? No. The premise has been altered. Naturalism has not really been meant to be taken as it is in itself. Its very statement has involved reservations and exceptions which, when considered, shall make it over into altogether an idealistic thing. These reservations and exceptions are the ideals of which naturalism is supposed to take no account, "man's own inner and deeper needs." Naturalism gets transmuted into their form and substance and becomes a thing not natural at all.

Of great importance, not more as an example of transmutation than for its bearing on the discussion of pragmatism, is Professor Royce's treatment of time in the present restatement of his well-known views on "immortality." Most of the experiences of life, he there asserts, "unite to show us that the reality of time is possessed especially by its past and future, over against which the present is indeed but vanishing" (p. 268). This is discovered in the act of willing. Therefore time is a function of volition. "In terms . . . of my attitude of will, and only in such terms can I define time, and its regions, distinctions, and reality." By analogy, since I discover hydrogen and oxygen by operating with water, I ought not to be able to define these gases in terms other than water. Such a definition would, however, invert the logical implications of whole with part, and where a complex used to imply its elements the elements would now imply the complex. This is logically inadmissible. And as empirically time is an element in the complex we call volition, and can itself be still further reduced to elements of which the most distinctive is duration, it becomes clear that time can be a function of volition only if the logic of implication is abrogated. The further question may yet be raised as to whether, empirically, the past and future do have superior reality. The experiences of life, I think, unite to deny that they do. But this point may be waived for the present, and inquiry made into the relation between the time in which past and future are more real than present, this "fragmentary" and relative time of actual experience, and that species of time which the absolute alone enjoys—a time in which future and past do not exist as such, but are present. It is to be noted that, though this time is the special privilege of the absolute, our own relative and fragmentary experience does contain prototypes of it. Musical progressions, at least, are experiences in which what had better be called actual duration is more prominent than elsewhere and which somewhat resemble the absolute's time. Why should this species of time be reserved for the absolute, the other attributed to men, and all identified with will, and ultimately with eternity? The answer is: compensation; but its elaboration must be postponed till the criticism of "truth."

Now if such inwardly oppugnant things as Christianity and absolute idealism, absolute idealism and naturalism, duration and eternity, can be thus transfused one into the other, so that all real distinctions get forgotten and lost, how much more facile, then, no matter how cautious and detached the investigator, a transsubstantiation of concepts that have a cer-

tain similarity of content—such as is denoted, for example, by “action,” “deed,” “purpose”—as do pragmatism and Roycean voluntarism. When, moreover, discourse is suffused by deep and commemorative emotion, and the address on “William James and the Philosophy of Life” is so suffused, it is well-nigh inevitable that feeling shall bring together and hold firmly in one glowing vision all things dear and cherished, without respect to how great be their oppugnance otherwise. The thought of William James may thus become indistinguishable from that of Josiah Royce, and I must confess that this is what seems here to have occurred, and that the address appears to me much more effective as history than as interpretation. The alignment of James with Edwards and Emerson, the exposition of his relation to his times, even the somewhat supererogatory defense of James against those who unjustly “confound pragmatism with the cruder worship of efficiency” seem rightly borne out by the facts. But as interpreted, the “Will to Believe” and the whole of James’s philosophy of life gets, as with Boutroux, a very definite twist that makes it over as Royce would have it be, but as it is not. Here are characteristic passages: “Your deeper ideals always depend upon viewing life *in the light of the larger unities that now appear*, upon viewing yourself as a *coworker with the universe* for the attainment of *what no present game of human action can now reveal*” (pp. 38–39). “Moreover, these ethical maxims are here governed, in James’s exposition, by the repeated *recognition of certain essentially absolute truths*, truths that, despite his natural horror of absolutism, he here expounds with a finished dialectic skill. . . . The need of faith in the unseen and the superhuman he founds upon these simple and yet absolutely true principles, principles of the true dialectic of life: First, every great decision of practical life requires faith and has irrevocable consequences, *consequences that belong to the whole great world*, and that therefore have *endless possible importance*. Secondly, since action and belief are thus inseparably bound together, our right to believe depends upon our right as active beings to make decisions. Thirdly, our duty to decide life’s greater issues is determined by the *absolute truth* that, in critical cases, the will to be doubtful and not to decide is itself a decision, and is hence no escape from our responsible moral position. And thus our responsible moral position is *a position that gives us our place in and for all future life*” (pp. 41–42). I have italicized the transforming phrases. They turn the doctrines of James, who had tried absolutism and found it wanting, who was radically an empiricist, an indeterminist, a pluralist, impatient of *alls* and *wholes*, always asserting the externality of relations, into just that non-empirical absolutism he instinctively rejected upon trial and reflectively combatted. Only when these phrases are accepted can he be compared with the absolutists, Fichte and Hegel. Reject them, and you find that he resembles Fichte in those respects in which Fichte was most citizen and least philosopher; you find that what he has in common with Hegel is exactly not the Hegelian *spirit*, but what is characteristic of Hegel, as he himself points out,<sup>1</sup> “merely as a reporter of certain empirical aspects of the actual.” Altogether, I can

<sup>1</sup> “A Pluralistic Universe,” page 100.



not overcome the impression that as this address progresses there is a gradual transmutation of the distinctive ideas of pragmatism into the characteristic conceptions of absolutism. In the end, I find attributed to William James the philosophy of life of Josiah Royce.

In this there is the undeniable appeal of a high pathos. The mind is so inevitably decking whom it loves, even though the beloved could not and will not wear them, with all its preferred supremacies and excellences. Such desire is the universal trait of lovers. Its execution gives recollection something of the flavor and glow of actuality, forges anew the chains which bind earth to eternal good. Though the naked fact were rougher, perhaps, yet nobler to utter, here compensation has a dual right—for to that which the mind inevitably craves is joined that for which the fact itself compels the yearning. In pure discourse, however, many would challenge compensation's place. Yet nowhere does it flourish more or win greater victories, for its nature is to grow by argument and to secure itself by dialectic. Compensatory philosophies, as a rule, play their game with loaded dice, and disingenuously: their answer, as Mr. Jacks boasts, exists prior to their problem: they bet on a sure thing. Now it is not one of the least splendid qualities of Roycean idealism that with respect to it the rule does not altogether hold. Its compensations are demanded with as much frankness as unconsciousness that they are compensation, and the essential begging of excellence and salvation, as well as of the question, appears as a right, not as a trespass.

Nowhere, I think, are the virtues and defects of the system so apparent as in the weighty and important address before the international congress of philosophy at Heidelberg, four years ago, on "The Problem of Truth in the Light of Recent Discussion," and here reprinted. The joining of the issues between pragmatism and absolutism is subtle as well as broad; just, as well as searching, and yet—what is true of the essays examined above is true also of this: the very presuppositions on which the issues are stated render them impossible as between absolutism and its opponent. Absolutism loves pragmatism, and with cannibalistic intensity; it swallows pragmatism whole and sublates in the "larger view."

Analysis—so the fable runs—lays bare three motives in the current descriptions of truth: that derived from biology, with its conception of the survival-value of ideas; that derived from "the longing to be self-possessed and inwardly free," and ramifying into individualism, personal idealism, and irrationalism; that derived from "modern logic" and identical with the Kantian motive "which leads us to seek for clear and exact self-consciousness regarding the principles both of our belief and of our conduct," a motive not altogether properly called intellectualism. These motives appear in realism like Russell's and voluntarism like Fichte's, as well as in the pragmatism of James and the instrumentalism of Dewey. Each and all of them leads to absolute idealism. "Individualism is right in saying, 'I will to credit this or that opinion.' But individualism is wrong in supposing that I can ever be content with my own will in so far as it is merely an individual will. The will to my mind is to all of us nothing but a thirst for complete and conscious self-

possession, for fullness of life. And in terms of this its central motive the will defines the truth that it endlessly seeks as a truth that possesses completeness, totality, self-possession, and therefore absoluteness. The fact that, in our human experience, we never meet with any truths such as completely satisfy our longing for insight, this fact we therefore inevitably interpret, not as any defect in the truth, but as a defect in our present state of knowledge, a limitation due to our present type of individuality. Hence we acknowledge a truth which transcends our individual life" (pp. 235-6). "We can define the truth even of relativism only by asserting that relativism is absolutely true" (p. 237). The course of our daily life even as of dialectic must presuppose this absolutism. For it assumes the past, which transcends all individual experience, and it assumes the minds of other men, which transcend the individual experience of each man. If the truth of assertions about these two assumptions, which can not be verified, consists simply in the fact that such assertions are credited, truth-telling becomes indistinguishable from lying. For truth-telling *pre-supposes*, looks backward, to already existing facts which validate assertions by their mere existence. If not, the pragmatist shares the fate of Epimenides the Cretan, who called all Cretans liars (pp. 225-233), to say nothing of the Psalmist who extended this quality to all men. Withal, "instrumentalism in so far correctly defines the nature which truth possesses in so far as we ever actually verify truth" (p. 224).

The arguments here recapitulated are familiar to all readers of Royce: Pragmatism can not account for past time, other minds, and is self-contradictory. It happens, however, that the pragmatism which so fails is not pragmatism as it is, but pragmatism in the absolutistic version. This version derives from presuppositions which the pragmatist neither acknowledges nor entertains. Of absolutism, however, these are the critical center. They regard the nature of cognition or experience with respect to its volitional-durational character and with respect to its ego-centrality. In Professor Royce's version of absolutism, the analysis of time plays a leading rôle. He concludes, as is well known, that living time, the enduring present, is less real than past or dead time and unborn or future time. But this time itself is only a function of the will, whose operation is reality, and our own wills assume but never experience past and future as such. The result is that they are both real and unreal. This is a contradiction which is sublated by turning past and future into an actual present—the immediate experience of the absolute will, which alone thus possesses "completeness, totality, absoluteness." In it wish, need, and satisfaction are identical. In the finite mind they are different, and the difference is "a limitation due to my present type of individuality." Thirst is a guarantee thus of its own unreality. My thirst guarantees that what will assuage it exists and will assuage it, even though I die of it in the meantime. The upshot of this analysis of time is, then, that the past can never be present to us, but is together with the future present to the absolute, *in actu*. Absolutely, time hasn't a temporal nature at all. It collapses into "eternity," an ordinal simultaneity in space; when



the absolute does experience it as such, he experiences it as duration (*vid. supra*, p. 551).

Now for pragmatism time is as central as for absolutism. But it finds no empirical ground for the superior reality of the past and future over the present. And as for "eternity," that is an empty, negative concept like "not-man." The real duration, which Professor Royce reserves for the absolute, pragmatism observes to be the substance of all experience. *This* it describes *as it flows*, and its flow, as Professor A. W. Moore has long ago shown, without rejoinder, consists of actual transitions from uneasiness and fragmentariness to "completeness, totality," satisfactions, the former leading durationally into the latter as one tone of a melody into another, and each in its turn supplying "conscious self-possession and fulness of life." For pragmatism, furthermore, each and every phase of this process is its own guarantee and is neither logically nor emotionally in need of aid and comfort from without. It is logically what it is, and no more, a matrix to be credited, at the creditor's own risk, as a starting-point for more experience which may or may not *grow* out of it, *indeterminately and freely*, but does not already preexist as its warranty in an absolute mind. Hence, our felt lack of a thing in idea is silent about that thing's existence or non-existence. As substance it is just that felt lack, and no more, capable of working generatively toward the making or the discovery of what is desired. It may fail to do so, and then becomes false; it may succeed, and becomes true, acquires through application or activity a new trait or function, is *verified*. We have Professor Royce's own word that this description of the nature of truth is correct "in so far as we ever actually verify truth." But what would be the "truth" of a *felt lack*, of a guiding idea which didn't guide, if it were *not* verified in some concrete way? Its truth would be *nil*; it would be mere *datum*, an existence having a logically real nature, but neither true nor false. Only if truth and existence be confused is it possible to speak of unverified truth. Such a confusion arises wherever a compensatory absolute experience is invoked to confirm natural experience. To that, since that is empirically generative, the dialectic of a block universe does not apply. Hence, the objection that not we, but the absolute only, can verify the past, falls beside the mark. A past event, even such an event as Newton's mind, may in so far as it perdures be presently known and is presently known. So we know the law of gravitation. Newton's body indeed and his lapsed emotions are, as such, irrecoverable. But they are none the less subjects of predicative propositions, are none the less terms we have *knowledge about*, that gets itself verified in acquaintance with such data as these have continued themselves into, not necessarily, but freely, determining in virtue of their inward nature our present experience of them. This consists in the books Newton wrote, the portraits that were made of him, and so forth. And so long as these are credited *forward*, and the crediting continually and prosperously enriches life, even as doctors' theses, can they be better, more truly known? Professor Royce himself agrees they can not, by us. But do they become any more immediate to us, is the truth *about* them changed for us into the fact *of* them, by declaring them

to be the immediate possession of the absolute, who is still less immediate to us? Such a declaration is as reasonable as an attempt firmly to found a house of cards by building it on a quicksand.

What I have just said about Newton's mind as a past event applies equally to all other minds as presently active. This means, of course, that pragmatism regards minds as being as little private in their essential nature as things; propositions of which they are the subjects, hence, are amenable to verification. Absolutism regards other minds as something essentially private, therefore not amenable to verification and hence subjecting the thinker to the alternative between solipsism and the absolute. As the absolute's mind is *ex hypothesis* least of all subject to verification, the validating effect of that mind is, to say the least, highly questionable. But granting that I believe in the absolute, how am I thereby to be saved from solipsism? Does the alternative offer anything more than solipsism on a large scale as against solipsism on a small? Be this as it may, it can arise only if the purely, the "merely psychological" character of the individual mind be assumed. Pragmatism declares this assumption to involve a dialectical reconstruction of objective empirical data. It declares these data to be found in actual acquaintance with other minds themselves. It finds that a knower first discovers those minds, and only afterwards understands his own in the light of these discoveries. It finds those minds to be highly complicated objective organizations of terms and relations, not simple wills. And finally while it finds that empirically not all the elements in a mind are perceivable with equal facility, any more than are all the elements of the residual world, it exhibits the purely empirical fact that one mind *does* know another and demonstrates *how* this knowledge occurs. What, then, is to be gained by violating the principle of parsimony and invoking, *in addition* to actual verifications of propositions the subjects of which are objects of acquaintance, an utterly *unverifiable* and unknowable absolute mind to validate the knowledge of other minds admitted already to be valid so far as may be?

Altogether, pragmatism seems, thus far, to fall into the toils of absolutism only when it is transmuted into a thing absolutistic from the start. Is there not, however, one instance at least in which pragmatism falls of its own momentum into absolutism, like a meteorite into the sun? Does not pragmatism assert the absolute whenever it affirms a general proposition? Can the truth even of relativism be defined otherwise than absolutely? Impossible, says Professor Royce: and the impossibility arises by the use of the most dread weapon in his dialectical armory. "An absolute truth is one whose denial implies the reassertion of that same truth" (p. 251). We are facing the famous reflexive argument. In the essay it is incarnated in many and elaborate examples, from Epimenides the Cretan, Euclid and his theorem that there is no last prime number, to all the ramifications of the "new logic." Formally it has not, so far as I know, been met. Yet it is curious that so profound and sympathetic a student of symbolic logic as Professor Royce should not long ago have observed its formal impossibility. Logically the reflexive argument is coincident with



the conception which Mr. Bertrand Russell designates as the "class of all classes" and this conception is, according to Mr. Russell's unquestioned analysis, self-contradictory. To choose one term of the contradiction and to call that the valid one is an act purely arbitrary, in no sense a solution of the contradiction. The solution of it, however, destroys the reflexive effect. When, for example, the Psalmist says, "all men are liars," all men formally become liars and not-liars at the same time. When the relativist declares, "There is no absolute truth," truth is thereby rendered both absolute and relative. Mr. Russell's conclusion of his examination of the contradiction is that the *all* type of "formal truth" is not admissible; the *any* and *every* type is. Classes have to be taken as *many*, and when so taken can be logical subjects, but only in propositions of a *different kind* from those in which their terms are subjects. The proposition which applies to the Psalmist himself will be other than that which applies to the Psalmist as a member of the class *men*. As the latter, then, he may well be a liar. In and by himself he may be altogether veracious. So, also, the assertion, "there is no absolute truth," may be in itself "absolute," as a member of the class "truth" relative. The distinctions which lead to this particularism at once destroy the force of the reflexive argument and confirm the distinctly pragmatic reply to it.

This reply points to the fact that the *all* form of being is possible only in a block-universe in which time is unreal. Now empirically the universe is a collection of *eaches*, *i. e.*, of particulars, and time is real. The block-quality appears always in retrospect, for experience grows and *all* implies *more than all*. Reflexion is impossible under such conditions. The judgment in which it is said to occur is a *new fact* in the world, the latest in so far forth. What it regards and designates is not itself, but its predecessors. The *all* it makes use of becomes in this very use less than all. This is why, as Mr. Russell points out, it is subject to predicates of a *different kind* from those applying to its own members. Epistemologically, the reflexive argument rests on a confusion of kinds, namely, of *knowledge of acquaintance* with *knowledge about*, of existence with truth, of the perception of the *datum*, "all truth is relative" with the particular proposition "It is true that all truth is relative." The former is a fact, neither true nor false, but just so much brute being which may or may not perdure. It is the class as many. The latter is not designative, but predicative, it is *knowledge about*, and validates itself, in so far as it can validate itself at all, pragmatically. It may be added that only in the latter form can or does knowledge require validation. An illustration will clinch the argument: Suppose that on entering a room I formulate my perception thus, "There is no one here." According to the reflexive argument I contradict myself, for I deny that I am in the room while I am in it. Yet who, even among absolute idealists, would accuse me of self-stultification? Philosophers, none the less, in strictly similar logical situations make this accusation, and in good faith. Which exhibits again the attitude of pragmatism and of absolutism toward the actual processes of experience, one taking it as it comes, the other making it over.

The upshot is that the reflexive argument, no less than that from the knowledge of the past and the knowledge of one mind by another, is based on premisses which pragmatism points to experience as denying. The empirical data with which it starts must be dealt with alchemically before they can yield the desired results. Premises are made to conform to the wished-for conclusion rather than the conclusion to the premisses. Unsatisfied interests must have their compensatory satisfactions. "Then what I have called the trivialities of mere instrumentalism will appear as what they are—fragmentary hints and transient expressions of the will whose life is universal, whose form is absolute and whose laws are at once those of logic, of ethics, of the unity of experience, and of whatever gives sense to life."

H. M. KALLEN.

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*Die Philosophie der Gegenwart in Deutschland.* (Aus *Natur und Geisteswelt*, Band 41.) OSWALD KÜLPE. Leipzig: Teubner. 1911. Pp. viii + 136.

This little volume has become very popular in Germany. Its title, however, is quite misleading; for it does not deal with present-day philosophy, but only with the philosophy of the past. The philosophers represented in the booklet: Mach, Dühring, Haeckel, Nietzsche, Fechner, Lotze, Hartmann, Wundt, were typical of German thought during the last two decades of the nineteenth century, and they are typical of what German thought of the early twentieth century is *not*. As a history of German philosophy at the end of the nineteenth century, however, Külpe's exposition can be recommended. It is popular, easy reading, and furnishes a good deal of useful knowledge.

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## JOURNALS AND NEW BOOKS

LA CIENCIA TOMISTA. May, 1912. *El feminismo en Alemania* (pp. 181-194): A. G. MENÉNDEZ-REIGADA. — An Account of the Programme and Discussions of the Congress of Women held in Berlin in February, 1912. *El ascetismo de D. Diego de Torres Villaroel* (pp. 195-227): J. DE LAMANO Y BENEITE. — The true character of Torres Villaroel is not generally known. Behind the humorous and sarcastical writer, there was a man imbued with asceticism and heroic charity. *Las Cortes y la Constitución de Cadiz* (pp. 228-247): J. D. GAFO. — The question of the legitimacy of the Cortes and of the Constitution of 1812 has given rise to numerous inconsistencies and contradictions on the part of so notable writers as Strauch, Puigcerver, and especially Rafael Vélaz. *El Filósofo Rancio* (pp. 248-264): G. A. GETINO. — A study of the work and influence of the forerunner of neo-scholasticism in Spain. Francisco Alvarado. *Boletín de Apologética. Boletín de Filosofía. Crónicas científico-sociales. Revista de Revistas. Bibliografía.*



- Binet, Alfred, and Simon, Th. *A Method of Measuring the Development of the Intelligence of Young Children*. Translated by Clara Harrison Town. Lincoln, Ill.: The Courier Company. 1912. Pp. 83. \$1.00.
- De Ruggiero, Guido. *La Filosofia Contemporanea*. Bari, Italy: Gius. Laterza & Figli. 1912. Pp. 485. 6 L.
- Dinsmore, John Wirt. *The Training of Children*. New York: The American Book Company. 1912. Pp. 336.
- Fullerton, George Stuart. *The World We Live In*. New York: The Macmillan Company. 1912. Pp. xi + 293. \$1.50.
- Goddard, Henry Herbert. *The Kallikak Family*. New York: The Macmillan Company. 1912. Pp. xv + 121. \$1.50.

## NOTES AND NEWS

### ALFRED FOUILLÉE

Alfred Fouillée, who died at Lyons on July 16 at the age of seventy-five years, was born at La Pouèze in the Department of Maine-et-Loire. He never attended a university, and was, in respect of his higher studies, self-educated. At the age of thirty, after having acted as schoolmaster in various small provincial schools, he was appointed to a post in the Lycée of Bordeaux, where he very shortly acquired a great reputation as an eloquent teacher of philosophy. In 1879 considerations of health obliged him to abandon teaching as a profession, and he devoted himself to philosophic writing. He published a very large number of books, some of which have not been without considerable influence on modern thought. Among them are "*Liberté et Déterminisme*"; "*Critique des Systèmes de Morale Contemporaine*"; "*L'Avenir de la Métaphysique*"; "*La Psychologie des Idées Forces*"; and "*La Morale des Idées Forces*." The ruling element in Fouillée's philosophical ideas was a reaction against the positivism which reigned in France under the influence of Taine from about 1860 to the close of the last century. As opposed to the positivist school, he denied that the feelings were the sole inspirers of action, and maintained that ideas in their purest form were likewise a force which could and did produce action. His theory of "*l'idée force*" was entirely opposed to determinism, and in this connexion he uttered his famous aphorism, "*La volonté n'est ni déterminée ni indéterminée; elle est déterminante*." He explicitly traversed the theory in both speculative and imaginative literature that character and action are solely or even chiefly the result of circumstances, and that a human life is, as it were, a mere thread in the web of time. He strongly asserted the freedom of the will and its capability of being formed and directed by the influence of ideas.

In later years he devoted himself to the study of sociology, a subject which had always interested him, and he published successively "*Psychologie du Peuple Français*"; "*Esquisse Psychologique des Peuples Européens*"; "*Elements Sociologiques de la Morale*"; and "*Le Socialisme et*

la Sociologie Réformiste." Unlike some contemporary French psychologists—eminent among their number M. Paul Bourget—he was essentially a liberal in politics, since he considered, first, that the diversity of modern opinion due to the extension of education and the complexity of civilization precluded anything like intellectual uniformity; and, secondly, that no man of intellect could be a patriot in a country which prevented him from thinking, speaking, writing, and teaching in accordance with the dictates of his conscience. Liberalism he interpreted, however, as respect for the rights of others, and as the determination to "sacrifice our own passions to the rights of others." He did not follow with any sympathy the dawn of the modern philosophy which calls itself pragmatism. He is said to have expressed his willingness to go back to Plato, but not to Plotinus.

Fouillée was a member of the Académie des Sciences Morales et Politiques, which in 1867 had given its imprimatur to his essays on the philosophy of Plato and of Socrates.

DR. ARNOLD RUGE, editor of *Die Philosophie der Gegenwart* is anxious to secure the cooperation of all students of philosophy in his important undertaking. In order that the work may be established on the firmest possible foundation it is necessary that a number of constant subscribers be secured. These being obtained it will be possible to make an advantageous agreement with the publisher for a number of years, which in turn will allow the present low subscription price to continue. The success of the undertaking should be a matter of concern for all philosophers and this success can be assured if subscribers are secured. The price of the annual is not to exceed \$3.75. Dr. Ruge requests, also, that all writers on philosophical subjects send a brief statement, not exceeding four or five printed lines, of the contents of their philosophical publications during the past and current year. The statement should describe some characteristic feature of the work and should be accompanied by any reviews of it that have appeared in philosophical journals. If the work itself is sent, the whole or a part of the table of contents will be reprinted. Only articles whose philosophical or scientific character is beyond doubt can be included in the pages of the review, but it is hoped that all schools of thought will be represented. Specimen copies which are unsuited for the purposes of the review will be returned to the sender, the others, forming an international collection, will be deposited in the Library of the Philosophical Seminar at Heidelberg. Letters and books should be addressed to Dr. Arnold Ruge, *Die Philosophie der Gegenwart*, Heidelberg, Burgweg 9.

ASSISTANT PROFESSOR G. F. ARPS, who has been acting head of the department of psychology of the University of Illinois during Professor Colvin's sabbatical year, has accepted a position in the department of psychology at the Ohio State University.

MR. JOHN LAIRD, formerly assistant in philosophy to Professor Taylor at St. Andrew's University, has been appointed to the chair of philosophy in Dalhousie University.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE NATURE OF CONSCIOUSNESS. II

IN the preceding article we began a study of the image, or sensible fact in perception, and the conclusions to which we came were: (1) that the image can not be identified with the object; (2) that it is an intermittent fact; (3) that it serves to bring the object before us.

Though the image is not what we mean by the object, yet we treat it as a momentary embodiment of the latter. Our behavior recalls that of a person looking at a photograph, who says, "Yes, this is A. B." In fact, it would be impossible to state the case better than by saying that the image stands for the object as a photograph stands for a person. Only we must remember that nobody ever looks at a photograph. He always looks through the photograph at the person.

Images are thus essentially *aspects* or *views*. In the first place, they show only the outsides of things and omit their solid contents. Secondly, they present objects, not as these are absolutely, but as they appear from the point of view of the body. For each possible position of the body with reference to an object there is a distinct image. Perception has a *terminus a quo*, and not merely a *terminus ad quem*. It springs out from the body as a center, like an arrow from a bow. Images are not adequately conceived until they are seen to be *relative to the body*.

What indeed are those deformations which the front of the house went through, when its right side became higher than its left and its left side higher than its right, what is the oval shape in a saucer that really is round, but an evidence that the body is present in the image, and not merely the object?

Though in general the images can not be fitted together, there is a case where it can be done. If you turn on your heel in a circle without moving from the spot, you get a series of images which are not merely temporally but spatially continuous, an unbroken pano-

rama that returns into itself again. Such a sequence of views could be painted on one canvas, which it would be quite impossible to do with the sequence of views got in going around a mountain. And why is this so? Because, in the former case, the body has not moved. So true is it that the images represent points of view, and are a function not of the object only but also of the body.

Close inspection of visual images reveals in them further traces of this relation to the body. Thus the smallest star we can see is one that can just irritate a terminal element of the retina, perhaps a rod or a cone. Still smaller pencils of light come from invisible stars, but, not being able to stimulate the retina, they obtain no representation among images. Similarly, the total expanse of sky we can take in at one glance corresponds to the total extent of the retina. More sky exists all about it, but, being unable to affect the retina, it can not gain admission to the visual field. Even were our power of vision so enlarged that we could see all round the circle, as perhaps some animals do, still we should look out upon the world from one center and see its objects at a certain distance, and therein the relativity of our image to the body would appear.

Who, as he looked up at the sky, has not seen there minute circles and vaporous films and shooting atoms of light, which were not there at all, but were projections from the internal media of the eye?

*Since, then, the image expresses not so much the object by itself as its relation to the body, it must involve a false abstraction to ignore the body and make the image a pure and unadulterated revelation of the object, as immediatist theories do.*

### *Phenomenism and Psychism*

On the other hand, the image is a revelation of the object; and it is not a revelation of the body. The object, and the object alone, is what it shows us. Thus the image is not a mere compound of objective and bodily factors, but the contributions, if one may so speak, from these two sources enter into it on different terms. And it becomes important for us to specify the nature of this difference—to make clear to ourselves in what way the image is objective, and in what way it is bodily.

We have already partly answered this question in saying that the image is a *revelation* of the object. That is, the image is objective in what it conveys. But what is it in itself, and considered as an existence? Can it be that, considered as an existence, the image is in some sense a bodily fact?

For the image is an existence. It is something which we find, as plainly and indubitably as (some would say even more plainly and



indubitably than) we find the object. When we look at the moon, it is not the same thing as the shining disc, but we discover the disc, as certainly as we discover the moon. The image is something which we find, and then again do not find—in other words, which exists and then ceases to exist. It undergoes changes. There can be no doubt, then, that it is an existence in time. Whether it is also in space is more difficult to determine. It is plainly extended, and has a shape and size, and these things are hard to explain unless it is in space. But it is neither the whole nor a part of the object, and therefore, though it appears to be where the object is, it can not really be there. If it is in space at all, it must be in some other place than that occupied by the object—perhaps in the body, the only other thing to which it has spatial relations.

When I suggest that the image may be bodily or in the body, I do not of course mean that it is material, or that we could observe it there if we knew where to look. I mean, to begin with, that it is closely connected with and has its characters determined by the body—by the body, rather than by the object. We have a term that, in one of its senses, expresses just this; namely, “subjective.” When we speak of a pain as a “subjective” fact, we mean primarily indeed that it is not referred to an external object, but at the same time that it is closely bound up with and has its characters determined by the body. Now my suggestion is that the image, even though it is referred to an object, may, as an existence, be a subjective fact in this sense.

But I would give to the subjectivity of the image a deeper meaning than this. It is easy to show that as existences images are subjective, if by this we merely mean conditioned directly on events within the body; for we have already seen that they contain the body within them invisibly and that they are intermittent facts, the condition for their occurrence being a process in the brain. But the question I would raise is whether images are objective or subjective in their own nature; whether that character of objectivity which seems to belong to them is original and inherent, or adventitious; whether, in a word, they are objective, or only objectified.

Most persons, on hearing this question raised for the first time, will answer without hesitation that images are objective inherently. For they bring objects before us; and how, it will be asked, could they do this if they were not themselves objective? Are not the characters of the image precisely the characters which we attribute to the object, and must they not therefore be objective? The image, in this view, duplicates and makes visible the object, like a garment cut for it by an extraordinarily skilful tailor.

On the other hand, the image clothes the object only as seen from a certain point of view, and from another point of view quite a different image clothes it: in short, the garment is not really on the object, but only put on it by us—a projection of our seeing; where-with the body makes its appearance again. When we recall that color, according to physics, does not exist in objects as such, we realize how subjective this clothing is. And we have seen how even the spatial characters of objects are, at the very least, deformed by the participation of the body.

When one considers the images (visual ones, that is) from the spatial point of view, one can not but be struck by the resemblance between them and those other images which we see on the ground-glass plate of a photographic camera when we look in from behind. The latter exhibit exactly the same deformations, the same variations of shape and size, as the visual images, and in this case the effect is plainly due to the physical process by which the image is projected on the plate, in accordance with the laws of optics. And the eye, physically considered, is just such a camera! Now, in the case of the photographic camera, the images, as existences, are obviously "cameral" or bodily, and belong to the object that cast them only so far as they are, so to speak, reprojected outward. May not the same be the case with the visual images?

At all events we have here two theories pitted against each other, which might be designated as objectivism and subjectivism, but which, to avoid certain misleading suggestions of these terms, I am going to call *phenomenism* and *psychism*. Phenomenism is the view that the image is essentially a phenomenon or appearance, *i. e.*, that its own characters are objective; psychism is the view that it is an existence *sui generis*, presenting an object not essentially, but, so to speak, by accident.

The best way to formulate the issue between these theories is to make it refer to the relations which the image contains. The image is composed of parts which have certain relations between them. Are these relations objective relations, or are they of a different kind? Do they correspond to the relations between the parts of the object, or to those between the parts of the brain-event? Phenomenism is the theory that the relations of the image correspond to those of the object, psychism the theory that they correspond to those of the brain-event. And, as the internal relations of the image are, so presumably will its external relations be—its place and connections in the universe. In the one case these will be indicated for us by the place and connections of the object, in the other case by the place and connections of the brain-event.



The issue between these theories is not less fundamental than that before discussed between immediatism and mediatism—indeed, the two issues are in some sort complements of each other. Phenomenism is a common element in doctrines as remote from each other as dualism and post-Kantian idealism. By “dualism” I mean any view which assumes images to be contemplated by a “soul,” “ego,” or “consciousness” distinct from them; as naïve realism in one of its forms does, and as Berkeleianism does when it says that the *esse* of material things is *percipi* in the passive. But the elimination of this contemplating entity does not necessarily deprive the image of inherent objectivity, as we may see by the examples of post-Kantian idealism and of a theory now widely held that may be called “immediate empiricism,” both of which have naught but images, yet conceive them as essentially objective. A view, on the other hand, which makes the image non-objective and psychic is panpsychism, or the theory of mind-stuff.

Now let us seek to decide this issue by means of facts about the image, as we did the other. The relations of the image include not only spatial but also temporal relations, and, as the case of time is the simpler, I shall take that up first.

Are the temporal relations of the image objective relations—relations, that is, corresponding to those of the object—or do they correspond rather to the temporal relations of the brain-event? An unambiguous answer to this question is given by certain peculiarities of the image which we have not yet noted.

As we move further and further away from an object, the images do not merely grow smaller, but they *come later*. To make this apparent we must take as our example not a thing, but an event. Let it be the discharge of a gun. Every one knows that sound, as we say, takes time to travel; by which is meant that, if the gun is at any distance from us, an appreciable interval elapses between its discharge and our hearing of the report. The sound as an image, in other words, is separated from the sound as an objective event by the exact length of time which it takes for the sound-waves to make their way from the gun to the ear. Yet the sound is not the less on that account heard as an objective event—we project it outward into the physical world, although not backward in time.

Of course, if sounds are later than their objective causes, the same must be true of sights; though the interval between physical event and image in this case will be smaller, in proportion as light travels faster than sound. An instructive case, bringing sensibly home to us this *lateness of the image*, is that in which we both see and hear a

distant event, such as the blowing of a whistle. First we see the puff of steam, and a moment later we hear the sound. Now, if images were in themselves objective—and not simply objectified, or projected—these two events should be perceived at the same instant. But, since the sound-waves lag behind the light-rays, there is a consequent displacement of the images with reference to each other, which should rouse not merely the naïve realist, but every other believer in the inherent objectivity of the images from his dogmatic slumber.<sup>1</sup>

The extreme case of the lateness of the image is seen in the perception of a star. Astronomers tell us that it takes the light of some stars hundreds of years to reach us. The result is that, where a star has been extinguished, we may go on for centuries perceiving an object that no longer exists—and then, perhaps, if we are fortunate, witness an event that happened before the Christian era! But it is merely a question of degree: we are all the while perceiving objects and events that no longer exist, that is, at the instant of our perception of them; indeed, if the present reasonings be correct, we never perceive an object or event that does.

If objects and events are in truth earlier than our perceptions of them, why do we suppose them to be simultaneous? Doubtless for pragmatic reasons. In the first place, the temporal difference is so slight that it does not matter in practice; and, secondly, perception is a faculty designed to serve for immediate action, and therefore showing us, ostensibly, the state things are in at the moment of our perceiving and will still be in when our action takes effect on them. The lateness of perception is a purely academic fact; common sense ignores it, and rightly; it is only the philosopher theorizing about perception who expiates his inattention to the little facts of science by the illusion that the image is really, and not merely intentionally, in the object.

Let us stop here to note an important conclusion that may be drawn from the fact of lateness. This fact permits us to decide between the two theories as to the nature of the object which, as we saw, would be equally mediatist: that the object is an ideal entity, and that it is a real existence—in short, between idealism and realism.

The fact that the image is later than the object suggests, if it does not actually prove, that the object is an existence independent of the image. For, if it were an ideal entity, a mere mental construct formed from the images, we should expect it to have the

<sup>1</sup> My attention was first drawn to the fact of lateness by an article of Professor Montague's, this JOURNAL, Vol. I., page 296.



same time as they; no reason could be given for the compulsion the facts put on us to conceive it as existing anteriorly—indeed, such anterior existence would be an unaccountable anomaly. But, if the object is a real existence and the image an effect which it calls forth, the temporal relation is most naturally explained.

If we decide objects to be real existences, it is of the utmost importance that we should give them a proper nature. The danger, since they lie beyond the image and are merely brought before us by its means, is that we should make them in themselves unknowable. This danger is avoided if we recognize that the image is another existence in the same world with the object, and conclude that the object is fundamentally of the same nature as the image, whatever that nature may prove to be.

Now let us return to the temporal relations of the image. When we see a bell rung, we refer the sound to the bell, and think we experience directly the objective event itself. But suppose a person of a Sunday morning listening to the bells ringing in a score of towers: the sound-waves from the nearer bells reach his ear sooner than the sound-waves from the more distant ones, and the result is that the mass of sound he hears at any one instant represents objective events happening at an earlier and earlier moment, according to the distance the sound-waves have come. In other words, this person does not hear an objective event belonging to any one moment, but hears, and that simultaneously, sounds which objectively are spread back, so to speak, over a considerable portion of the immediate past. That the temporal relations (if there can be said to be such) within the image are not objective relations, is evident.

Or imagine a person looking out at a distant view through a mist or, let us say, a snowstorm that obscures it: the light-rays from the snowflakes come sooner than those from the objects composing the view, and the light-rays from the nearer snowflakes come sooner than those from the more distant ones; so that, again, the total image has relations of simultaneity between its parts which do not correspond to any simultaneities in nature—or, at all events, to any simultaneities between the objects the person sees.

Thus there are in images relations of simultaneity that do not correspond to any simultaneities among objects, but rather to sequences, and relations of sequence where what exists objectively is simultaneity or identity. *The temporal relations of images are not objective relations.* They are objective relations only if the objective relations referred to are those of the brain-event, not those of the object which the images bring before us.

From time let us turn to space, and seek here also to submit the issue between phenomenism and psychism to the test of facts. Are the spatial or quasi-spatial relations between the parts of the image objective relations, or are they of a different kind?

If one looks at a door from an angle of forty-five degrees, the near side of the door appears longer than the far side: though in reality the two are equal. *Sensibly*, as we may say, they are unequal, but *objectively* they are equal. Of the corners of the door two have sensibly the form of acute angles and two the form of obtuse angles: objectively all four are right angles. Here is clear evidence that the spatial relations within the image are not objective relations in our sense.

Possibly the reader may conceive that the two sides of the door are somehow equalized by the fact that we see depth. That is, we are subconsciously aware that one side is further from us than the other side, and, allowing for this, see the two as equal. Doubtless we *think* of them as equal, and even in a sense perceive them as equal, but that does not prevent the two sides, in the very midst of the perception, retaining their sensible inequality. Does the reader question this? He has only to take a book in his hand and hold it up alongside the door. By moving it back and forth he will quickly find a point at which the book and the near side of the door are exactly equal. Let him then transfer the book to the other side of the door (which by hypothesis is seen obliquely). The book will now look longer than this new side of the door, as plainly as before the two were equal. *Nor will he, I think, be able to doubt that the image retains precisely these proportions and relations whether we attend to it or not.*

Careful observation of images thus seems to show that their internal relations are not those of the object, but those of the brain-event, and to confirm the analogy above suggested between them and the images on the plate of a photographic camera. Is this analogy complete? In particular, does it extend to the third dimension—have visual images really no depth, or distance from the eye?

Visual images might of course be subjective facts, that is, not essentially appearances of objects, and yet be tri-dimensional. On the other hand, no better proof of their subjectivity could be given than the demonstration, if it were possible, that they are spread out only in length and breadth, and that depth is not, in the strict sense of the word, seen. Can a case be made out for the view that visual images are, so to speak, flat, like the cameral images, and inside the head, as these are inside the camera?

This view must not be understood in a cruder sense than that in which I desire to maintain it. The proposition is not that one *image*,



say, that of the door, is inside another image, that which I should have of my head if I perceived it; nor yet that one *object*, the door, is inside another object, my head! It is that a certain image, that of the door, or any other image I may chance to have, is always inside a certain object, my head. And this, we now know, signifies that the image, considered as an existence, is a part of the existence which is cognized by means of the image of my head.

True, visual images do not seem to be inside the head; and the proposition that they are there is undeniably a great paradox. They seem for the most part to be much too big, and they seem quite plainly to be outside us. Let us consider separately these two objections, that of their bigness and that of their outness.

1. How, it may be asked, can my image of the side of this room, or my image of a mountain, be inside so small an object as the head? At first sight the disproportion in each of these cases seems immense. A thinker who *identifies* the object with the image has no difficulty in showing the thesis we are discussing to be absurd. A few facts may help to make it appear less so.

The door, as I look at it across the width of the room, seems a much larger object than my outstretched hand; yet, if I hold the latter up beside the door, or, better still, between my eyes and the door, it proves to be as large or larger. A peculiar impression is produced on us when we hold the hand over the door, but in such a way that we can still see the door through the fingers and about the edges: we are brought as it were for the first time into the presence of the real relations of images to each other, and, being unable to divest ourselves at once of the habit of cognizing objects rather than images, are startled at the suggestion of our hand being so enormous.

For the size which objects appear to have is, of course, largely matter of suggestion. And that which is suggested is the size of the object as perceived through the medium of what we have called the "standard image." But, since we may sometimes be in error in our inference of what the standard image will be, a further complication is introduced into the case, as may be seen from the following example. An object viewed through a mist, such as a ship at sea, looks larger than it would if the air were clear. Now the sensible size of the ship at that distance is a constant quantity, and its objective size is a constant quantity; whence it follows that this illusory bigness must be distinguished both from its objective size and from its sensible size—and that there is a third thing which we may call *apparent* size.

Now a little consideration suffices to show that that size of images, which appears to stand in the way of their being inside the head, is

apparent size, and not sensible size. The image of an object which we know to be large seems large, and we can hardly make it seem small—except by the simple and conclusive device of measurement.

Suppose I am looking through a window at a mountain. The mountain looks immensely big, vastly bigger than the window, and consequently the respective images appear to have much the same proportions; and yet the image of the window is plainly larger than that of the mountain, else how could I see the mountain through the window? I may cover them both completely with my hand, the image of which is therefore larger still. Now suppose, while still looking at the mountain, I draw back from the window far enough to take in the whole of the window-frame at once. In that case the image of the window-frame completely surrounds that of the mountain, and is therefore larger; and both are completely surrounded by the frame formed by my eyebrow, nose, and cheek, which therefore is larger still. But this last image is the image of an object *smaller* than the head, in which, according to the thesis we are considering, all these images are contained. The largest image we can possibly have is the image of an object smaller than the head! Surely this disposes of the objection that images can not be inside the head because they are too big.

2. Coming now to the second objection, it will be urged that images can not be inside the head because we see them outside it. Depth, it will be said, is an actual character of our visual images, as much demanding recognition as any of the other characters we have so painstakingly set down. Here is something that differentiates the visual images from the photographic ones, and gives to them an objectivity which the latter do not possess.

It can not be denied that space presents itself to the eye as a homogeneous whole, in which the three dimensions appear at first sight to be entirely on a footing. Visual perception undeniably shows us depth, and not simply length and breadth. The only question is whether this depth is given sensibly, or rather given sensibly in the same way as the other two dimensions are; whether it is a character of the image in every way analogous to length and breadth. Now it will be evident to any one who has considered the matter that, even if all three dimensions come sensibly, the third does not come in quite the same way as the other two. We can always almost, and never quite, see it. And we *oughtn't* to see it—at least if we had but one eye.

The familiar argument about “a line endwise to the eye” has at first sight the air of demonstrating the impossibility of what is nevertheless a fact. But, in its true effect, it simply puts us on the track



of the nature of this fact. That color should be spread out not in two dimensions but in three is indeed an impossibility; and also not a fact. For, in the first place, we see only surfaces, and only surfaces that are turned towards us; and, though these surfaces seem to wind in and out, the least intervening opaque object arrests them. Secondly, although we see the surfaces at a distance, how could we see them if we saw anything, such as distance, between us and them? Shall we say it is seen transparently? If the degree of the transparency be realized, that is another way of saying that it is not seen, that the surfaces are seen *at* it—in other words, of repeating the problem. It seems to follow that distance is not seen. And yet even that, as we shall see, is true only in one sense, and false in another.

In our muscular feelings of accommodation and convergence we have images, accompanying or fused with the visual ones, which partly account for our sense that depth is felt and not simply inferred or thought. But the chief factor is unquestionably binocular disparity. Owing to the different positions of the two eyes, a slightly different picture is presented to each: the right eye sees a little more of the right side of an object, the left eye a little more of the left side; when we look past an object at another which it partly covers, one eye sees a little strip of the far object which is invisible to the other eye. The fact that the visual image results from the combination of two not quite identical retinal impressions shows that there is in the sense of depth an element specifically visual. On the other hand, this element is only a *sign* of depth, and not an actual dimension of the image. It is only a blurring in those parts of the image where the impressions were not identical, the image itself remaining all the while bi-dimensional. It is no more an actual *sense* of depth than is that covering of haze which makes us judge certain objects to be very distant.

Muscular feelings and binocular disparity, then, with differences of faintness and clearness and the other signs of depth cooperating—such are the only data which observation discloses. It is the synthesis of these divers sense-elements—or, more strictly perhaps, the fact that the one image depends on a combination of physiological influences from these different sources—which at once gives rise to the sense of depth, and explains why it is not, after all, wholly homogeneous with sensible length and breadth. To these factors it remains only to add our life-long habit of reacting as if the image were where the object is.

I conclude that there is nothing in the visual image repugnant to the analogy of the images on the plate of a camera, or inconsistent with the view that we have to do with an intra-bodily fact.

Though the foregoing analysis may seem at first sight to have explained depth away, I think the more we live with it and attempt to verify it by observation, the more we shall feel it to be satisfactory and to cover the whole ground. The truth is that depth is a datum of perception, and not an image or dimension of an image. In other words, it is something the mind *grasps* in cognition, not a feeling entering into its structure, as length and breadth do.

And here we come to the fundamental illusion of phenomenism. Observation, in the case we have just analyzed, discloses a whole of elements which, if you take them in their significance—*i. e.*, in what by their function they succeed in bringing before the mind—represent the vision of three dimensions of space; but, if you take them as sensible facts, are only a field of two dimensions with differences of clearness and blurring in the parts, transfused with elements of other senses. *The illusion consists in supposing that what is conveyed is also sensibly or psychologically existent.* It is an illusion that can only be dispelled by knowledge of psychology, and by that more accurate vision of introspective facts which such knowledge makes possible. Unfortunately too many of those who occupy themselves with logic and theory of knowledge are without psychological interests or habits of thought; and the consequence often is that they base their metaphysics on a conception of experience to which experience really gives the lie.

We are now in a position to sum up the results of our study of the image. It has been shown (1) that the image is an existence distinct from the object, (2) that its relations are not those of the object, but rather those of the brain-event. *Now an existence whose relations are not objective, and which is correlated with a brain-event, seems to me to be precisely what we mean by a psychical existence.* In these respects the image agrees with pleasures and pains, emotions and desires, which are psychical existences. This conclusion has simply brought us round to the fact of current psychology: every reader knows that images are treated of by psychologists under the name of *sensations*. In an earlier passage we spoke of images as "open to inspection": this inspection is now seen to be introspection—*images are data of introspection.*

Images or sensations, with pleasures, pains, emotions, and desires, form the whole to which contemporary psychologists refer when they speak of "consciousness." It has been shown that the former of these facts, as much as the latter, are existences, and these existences psychical originally. In this sense, then, the existence of consciousness has been proved.



Throughout this discussion we have abstracted from *awareness*. Whether the states above mentioned, all of them or some of them, possess awareness as an essential property; whether awareness is something that can be introspectively discovered in the same way as images and feelings; whether awareness is an existential fact—these are questions which must be reserved for another article.

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(To be continued.)

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## DISCUSSION

### PROFESSOR PERRY'S PROOFS OF REALISM

IN the essays of its advocates, and especially in Professor Perry's recent and admirable book, "Present Philosophical Tendencies," the new realism has come forward as a militant creed, no longer on the defensive, but eager to show by positive arguments that the realistic view is the only tenable one. All students of philosophy must welcome this earnest endeavor to throw new light on the knotty problems of mind and reality, and to Professor Perry in particular we are all indebted for his clear presentation of the case for realism. The subject is important, and it will therefore not be out of place if I seek here to analyze the arguments on which this case rests. For the sake of brevity, and also in order to have a definite text before us, I shall confine my comments to Professor Perry's recent book.

Professor Perry offers us four proofs of the realistic doctrine. They are: (1) "the Negative Argument" a critique of idealism; (2) "the Argument from the Externality of Relations"; (3) "the Argument from the Distinction between Object and Awareness"; (4) "the Argument from the Nature of Mind." I shall deal only with these four arguments, because the realistic view that mental content is merely a part of the environment (which might at first be considered an additional argument for realism) does not itself bear upon the quest whether reality must be construed idealistically or realistically. In fact, Professor Perry himself says of this theory that "it not only fails to establish realism; but appears even to disprove it by bringing the transcendent directly into mind" (p. 33). The crucial question for realism is, therefore, as Professor Perry points out, not the "theory of immanence" (the view of mind just referred to), but the "theory of independence." This theory

is stated as follows: "It means that things may be, and are, directly experienced *without owing their being or their nature to that circumstance*" (p. 315).

The first proof offered for this view consists in pointing out that idealism rests upon two specious arguments, which Professor Perry entitles "definition by initial predication" or "exclusive particularity," and the "argument from the ego-centric predicament." The first of these is seen in Berkeley's insistence that it is "an evident contradiction" to suppose "that any immediate objects of the senses should exist in an unthinking substance." The tulip which I see is an idea (in Berkeley's sense), and it is contradictory to assert that this or any other object of experience can be exterior to mind. Professor Perry's comment on this view is as follows: "It does not occur to Berkeley, apparently, that a natural body, like a tulip, can belong both to the order of ideas and also to another and independent order. In other words, he assumes that an identical element can belong to only one complex. But, as a matter of fact, such is not the case. The letter *a*, for example, is the second letter of the word 'man,' and also the fifth letter of the word 'mortal'; and it enters into innumerable other words as well. It possesses, in other words, a *multiple* and not an *exclusive* particularity. And the false assumption to the contrary gives rise to a specious argument. For having found an entity, like the tulip, in the mental context, where it is named 'idea,' and having assumed that it can belong to only one context, Berkeley thereupon *defines* it as idea and concludes that it is such exclusively. But this is as though, having found the letter *a* in the word 'man,' one should propose to define it as 'the second letter in the word man' and so to preclude its occurring in any other word" (pp. 127-28).

I can not persuade myself that this criticism fully answers Berkeley. So far as I am aware, no one denies that a thing can enter into several different groups at the same time; but to prove by this that a thing, all of whose characteristics borrow their meaning from experience, may also exist out of all relation to experience seems to me a difficult matter. The illustration of the letter *a* in *man* and *mortal* does not fit the case. Truly the letter *a* may be in several words and remain identical with itself. But tell me that the letter *a* continues to exist *after it has ceased to be a letter of the alphabet*, and I may be unable to refute you, but, I confess, I shall also be unable to put any meaning into your assertion. The color red in no sense experienced, and the letter *a* in no sense a letter of the alphabet, seem to me very much alike. Certainly no idealist can prove that they do not exist; but with equal certainty, no



idealist would try, since it would make no difference to any one whether they existed or not.

These words that I have just used, namely, that "it would make no difference to *any one*," bring us to Professor Perry's second criticism of idealism, and the "ego-centric predicament." The idealist argument based on this predicament, says Professor Perry, "calls attention to a situation that undoubtedly exists, and that is one of the most important and original discoveries that philosophy has made. *No thinker to whom one may appeal is able to mention a thing that is not idea*, for the obvious and simple reason that *in mentioning it he makes it an idea*" (p. 129). This "most important and original discovery" of philosophy, however, turns out, on Professor Perry's analysis, to be merely "a redundant proposition to the effect that every mentioned thing is mentioned—to the effect that every idea, object of knowledge, or experience, is an idea. And a redundant proposition is no proposition at all. The assertion that an idea is an idea conveys no knowledge even about ideas. But what the idealist requires is a proposition to the effect that *everything is an idea*, or that *only ideas exist*. And to derive this proposition directly from the redundancy just formulated, is simply to take advantage of the confusion of mind by which a redundancy is commonly attended" (p. 131).

Professor Perry is probably right in holding that the crux of the whole matter is to be found here in the "ego-centric predicament." For we are in the ego-centric predicament whether we like it or not, and can never get out of it to see what is beyond. Hence no one can ever prove that the realist is wrong in asserting the existence of any number of "neutral entities" (Professor Perry's well-chosen term) beyond experience. The unpleasant question, however, will present itself as to what the realist means by existence. This question of the meaning of "reality" has no terrors for either the idealist or the pragmatist. For them both reality is to be expressed in experience terms. The difference between "real" and "unreal" is that one makes a difference to experience and the other does not. "What is it known as?" was James's crucial question about the nature of anything. If you want to know what reality is, Professor Dewey will tell you to "go to experience and see." Beyond the realm of experience there may be as many "neutral entities" as you like, but if they make no difference to any sentient being they are not reality for us, for themselves, or for any one. In short, it is very hard to see how such neutral and independent entities could ever become a part of any human philosophy. All of which, we shall be told, is only a wearisome rehearsal of the redundancy of the ego-centric predicament. And it is—provided, at least,

that this phrase be taken to indicate the central position which *experience* must have in knowledge. In that sense it would seem that all human philosophy which has meaning for us must be ego-centric, and that realism can never be ultimately intelligible to human beings, however well it may satisfy "neutral entities."

So much for Professor Perry's "negative argument." And however we may feel about it, all will be agreed that it is very far from proving the truth of realism. The realists and Professor Perry, in fact, will frankly agree with this, for the most that the attack on idealism sought to do was to show that realism was *possible*, and that idealism, though possibly true, had not proved itself the *only* tenable doctrine. As Professor Perry himself puts it, "We have thus far done no more than prepare the way for the realistic theory of independence, by refuting the contrary theory, and by denying the charge that the realistic theory is inherently absurd." "The reasons for supposing that there are things that are not known must now be introduced" (pp. 318-319). We must have recourse, in other words, to the three positive arguments for the realistic doctrine.

"The most general argument for realism," we are told, "is an application of the theory of the *external or extrinsic* character of relations." Professor Perry thereupon proceeds to explain clearly, though briefly, the question at issue concerning the *nature of relations in general*. This is not the place to enter into this discussion. I shall simply point out that it will require more than one short paragraph to refute the theory of the *intrinsic* character of relations, and that if realism must wait for the settlement of this subtle logical question, it will be a long while before it comes into its own. For us, however, the interesting thing is the application of the view of extrinsic relations (granted for the sake of the argument) to the question of reality and experience. According to Professor Perry, this application "shows, in the first place, that the content of things is in no case made up of relations beyond themselves. So the content of a thing can not be made up of its relations to consciousness. Of course, the *consciousness of a thing* is made up of the thing and its relation to consciousness. But the thing then contributes its own nature to the conscious complex, and does not derive it therefrom. . . . It follows, in the second place, that whether the relation of a thing to consciousness is a relation of dependence or not, is an empirical question. It is necessary to *examine the relation and see*. In other words, it is impossible to infer dependence simply from the fact of relation" (p. 320).

The idealist will not be altogether without comfort in seeing what "follows in the second place," since misery loves company.



For it is plain enough that the realistic argument is here somewhat of a boomerang. If it is impossible to infer dependence, no more can you infer independence. And if realism be right in maintaining that the thing exists outside of experience, it is hard to see how you can "examine the relation and see" whether the thing is independent or not. The ego-centric predicament puts the realistic "thing" beyond your grasp. In short, it is vain for realism to appeal to experience. If it should seriously try to do so it would give away its case.

The first application quoted above of the theory of external relations in its bearing on our question is more important than the second. If the reader will peruse it again carefully he will see that the theory of relations applies to the question at issue *only on condition that you first admit that things are external to experience*. This is the very point to be proved. Doubtless *if* things exist outside of any and every consciousness and are connected with it by external relations only, then "the content of the thing can not be made up of its relation to consciousness." But if the essential nature of things is experiential, then the "relation" between the "thing" and "experience" is not extrinsic, and the theory of relations has absolutely no application to the question at issue.

Something like this Professor Perry evidently sees for himself, for after doing his best by this second realistic argument, he admits, "The theory of the externality of relations is not sufficient in itself to establish the case for realism. Indeed it is so general in scope as to argue pluralism rather than realism" (p. 320). Hence we are referred to the third argument for realism, which is styled "the Argument from the Distinction between Object and Awareness." This "argument" turns out to be the "contention" of Mr. G. E. Moore that sensation and its object are distinct and quite different things. The idealist might be excused for insisting that the contention is either dogmatic or irrelevant, according as it is interpreted. That it quite fails to go to the root of the matter will, I think, be plain to any one who will consult Mr. Moore's original article.<sup>1</sup> The gist of the argument is, in Professor Perry's words, as follows:

"The object of a sensation is not the sensation itself. In order that a sensation shall be an object, it is necessary to introduce yet another awareness, such as introspection, which is not at all essential to the meaning of the sensation itself. And 'the existence of a table in space [quoting again from Moore] is related to my experience of *it* in precisely the same way as the existence of my own experience is related to my experience of *that*.' In both cases

<sup>1</sup>"The Refutation of Idealism," *Mind*, Vol. XII., pages 442 ff.

awareness is evidently a 'distinct and unique relation,' 'of such a nature that its object, when we are aware of it, is precisely what it would be if we were not aware' " (p. 321).

Professor Perry significantly points out that Mr. Moore does not inform us what "awareness" is. In fact, it is hard to see how Mr. Moore's theory of awareness can be made to fit into Professor Perry's theory of consciousness. But it is much more important to observe that neither Mr. Moore nor Professor Perry has given any reason to prove that the "object of a sensation" is independent of experience. The "distinction between object and awareness" is irrelevant to the issue if it mean simply that when I see the tree, there is something in the tree not identical with my sensation. The majority of idealists would admit this and insist upon it. But from this it does not follow that the tree is independent of *all* experience, even its own. The "argument from the distinction of object and awareness" would, therefore, seem to be either quite irrelevant, or else an attempt to inveigle the unwary idealist out of a harmless admission into a fatal and quite fallacious one. That Professor Perry has no such unfair purpose is plain enough from his final remarks on the argument. For it transpires at last that he too regards it as rather irrelevant and certainly quite useless. Things, he admits, may be altogether dependent on experience, for anything Mr. Moore's argument shows to the contrary. So the third argument for realism goes to join the second, and we are yet without a single positive reason for accepting the realistic view. All, therefore, hangs on argument number 4. I transcribe it in Professor Perry's own words:

"We need to forego dialectics and observe what actually transpires. We find, then, that consciousness is a species of function exercised by an organism. The organism is correlated with an environment from which it evolved and on which it acts. Consciousness is a selective response to a preexisting and independently existing environment. There must be something to be responded to, if there is to be any response. The spacial and temporal distribution of bodies in its field of action, and the more abstract, logical and mathematical relationships which this field contains, determine the possible objects of consciousness. The actual objects of consciousness are selected from this manifold of possibilities in obedience to the various exigencies of life. It follows that the objects selected by any individual responding organism compose an aggregate defined by that relationship. What such an aggregate derives from consciousness will then be its *aggregation and nothing more*" (pp. 322-323).

Obviously, the most important sentence in the above is the one



that reads, "Consciousness is a selective response to a preexisting and *independently existing environment*." If this means simply that nature does not depend altogether on the individual consciousness, it is irrefutable—and irrelevant. If it means that the environment is altogether independent of any experience—that it is not made of experience stuff, is neither object of experience nor center of experience—then indeed the sentence is relevant; but its position in the argument is hard to discover. Is it premise or conclusion? If the latter, what are the premises? If the former, how does the realist come by it? Who has admitted it and how has it been proved? Professor Perry seems to regard it as an *empirical fact*. Before coming to this argument, and with evident reference to it, he has said, "it remains for realism to investigate the precise nature of the relation of things to consciousness, to discover whether or no this is a relation of dependence. And this is now a question of fact, like the question of the relation of the tides to the moon." What, then, are the experimental or observed "facts" on which realism bases its contention? The "theory of immanence" will here do us no good, for, in the first place, that is only a theory, and in the second, its sponsor has admitted that it "not only fails to establish 'realism,' but appears even to disprove it." The truth seems to be that "it *still* remains for realism" to furnish us with any facts that tend to prove the complete independence of things from all experience. And, as I have indicated in another connection, it will probably so "remain" for a long time. For it is hard to see how observation can ever lead us to the unobservable, or how experience can ever prove the unexperienced and inexperienceable. The truth is, we are all in the ego-centric predicament, no matter how little we like it—the realist along with the rest of us—and if we are ever to get out of it and prove the existence of "neutral entities" in an "independently existing environment," it will not do to "forsake dialectics and observe what actually transpires." "What actually transpires," at any rate when observable, is not in the "independently existing environment." Observation will do the realist very little good, and he had much better stick to "dialectics." There is, however, one way by which "neutral entities" may be secured more easily than even by dialectics; and that is by begging them at the start. I do not need to recommend this to the realists.

This paper is not meant as a vindication of idealism. Idealism has troubles of its own—no one can read Professor Perry's admirable book without realizing it. For some reasons I should like to be a realist, and I am sure there are many others who feel with me in this. We looked to the rise of the new realism with anticipation and joy, hoping for some deliverer from the bonds of Berkeley.

Most of us do not yet feel that deliverance has come. The realists have, indeed, fought a good fight, but in our opinion they need all the help they can get from the kindly critic. Sometimes it is well for us to see our arguments as others see them. I may say, therefore, in all candor, that this paper is intended as a humble contribution toward the new realism.<sup>2</sup>

JAMES BISSETT PRATT.

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### EXPLICIT PRIMITIVES AGAIN: A REPLY TO PROFESSOR FITE

I am indebted to Professor Fite for a very vigorous onslaught<sup>1</sup> upon my paper on "Foundations of Philosophy: Explicit Primitives";<sup>2</sup> I say indebted, because nothing conduces so much to making your views thoroughly understood as to have them violently attacked. I perceive that I must have been very obscure in this article, for Professor Fite has, if I mistake not, in some important points, quite misconceived my meaning; in others, I venture to think that he is somewhat in error.

For instance, when I use the term "explicit primitives" as a shorter form for the phrase "terms or propositions which are explicitly admitted as indefinables or indemonstrables" (since all time would not suffice to define everything, nor to prove everything)—that is, as *primitive* terms or propositions—I am far from meaning that the *signification* of the term, for instance, has been made *explicit*. What I mean is just the reverse—you *can not* set forth explicitly the meaning of *every* term, hence some must be taken for granted. Take the first definition of your treatise or your discuss-

<sup>1</sup> This paper was written before the publication of "The New Realism" by the six "platform realists." In this book, Professor Perry again takes up the question of independence in a closely reasoned and admirable argument. The argument shows that reality need not be dependent on knowledge in the sense of standing to it in the whole-part relation or the exclusive causation relation, or of implying or being exclusively implied by it. The type of idealism which I have had in mind in the preceding paper would affirm none of these relations, but would simply raise the question whether the real can be conceived in any other than experience terms. In other words, if it must assert a relation between reality and experience, it would choose the *relation of identity*. Against this view (which seems to me the vital thing in Berkeley), Professor Perry's discussion in "The New Realism" is as unpersuasive as is his argument in "Recent Philosophical Tendencies."

<sup>1</sup> This JOURNAL, Vol. IX., page 155.

<sup>2</sup> This JOURNAL, Vol. VIII., page 708.



sion—provided that has logical sequence at all—the *definiendum* of your definition can not itself be defined, otherwise that first would not be first. It is well known to the logician that you can not, in one and the same treatise, define matter in terms of energy and energy in terms of matter. The two sentences which I quote from Clerk-Maxwell as an instance of a violation of this rule may, indeed, both, if they are true statements, *give information*, but they do not *both* answer the requirements of the definition. My simple rule is that all those terms which you decide to forego the defining of you must, for the convenience of the reader, make a list of at the beginning—you must not introduce them surreptitiously, you must set them out *explicitly* as primitive. When in the phrase “explicitly primitive terms, etc.,” I decide to use primitive as a noun, explicit necessarily becomes an adjective. But Professor Fite says (p. 155): “Briefly, my position would be that when a term has been made *explicit*, it is then a party to a comparison and is thus involved in a relation to another term.” But that is exactly what an “explicit primitive” is not. Hence it has not been shown that the phrase involves “a contradiction in terms.” I deny that I ought to fall under the same condemnation as Professor Fite’s students who insist upon it that in philosophy everything must be defined, when my very thesis is that not everything *can* be defined.

It is not to be denied, of course, that, in general, the terms (objects of thought) which constitute the subject-matter of your treatise or discussion will be far richer in meaning, will have a far greater number of marks attached to them, at the end of your work than at the beginning. It is true that we are far better acquainted with the character of Major Pendennis after reading Thackeray’s novel than before, but this fact has nothing to do with his definition. “To say quite definitely” (meaning very fully) “who, after all, the Major was” is not at all the same thing as to define him. It would be absurd to say that we are not far better “acquainted with” (to use Bertrand Russell’s term) parallel lines at the end of our reading of Euclid than at the beginning, but it does not follow that we shall have to change our definition of parallel lines. A term has been properly defined when such a congeries of its marks has been given as is sufficient to enable you to determine whether any freshly presented object will fall under this same head or not. It is not the function of the *definition* of a term to give all of its marks. Owing to the existence of Natural Kinds<sup>3</sup> in this world of ours (the world of thoughts as well as of things) a limited number of marks will in general suffice to entail all the rest. “The character Thackeray

<sup>3</sup> See “On Natural Kinds,” F. and C. L. Franklin, *Mind*, Vol. XIII. 1888.

was writing about at a given moment" would be a perfectly good *definition* of Major Pendennis, though it would give us very little information about him.

My paper on "Explicit Primitives" was written in haste and for a special purpose—after the appearance of the "Program of the Six Realists" and in time to serve as a brief prolegomenon to the proposed discussion at Cambridge last January. In that Program (as Professor Royce has since pointed out at much greater length) there are many concepts and propositions<sup>4</sup> laid down implicitly as basis for the proposed discussion which are very far from being such as any non-realist could admit to be legitimate. If these had been explicitly set forth, this inadmissibility, it seemed to me, would have been quite apparent. I say in my paper (p. 711) that the makers of the program must have intended the discussion to be carried on solely among the neo-realists themselves. However, the appearance of my remarks in this JOURNAL prior to the meeting turned out to be unavailing, for I could not detect that they had been read by any of the participants in the discussion. (My contention was, of course, an old story to Professor Royce.)

But despite brevity, I should have thought it to be apparent that my subject of discourse was not the field of knowledge in general—discursive and of miscellaneous provenance—but merely any closed field of deductive, or chiefly deductive, reasoning. The proposed discussion, to which my paper was particularly *à propos*, was of this kind. I say: "It is, however [though I find them objectionable and question-begging], an immense advance in philosophical discussion to find definitions and postulates prepared beforehand." The discussion was to be prevented from being discursive, it was expected to *flow from* the definitions and postulates, which had been sent out beforehand to the members of the Association.

In view of all this, I am much surprised to find Professor Fite saying (as if it had any bearing on my article), "In a *system of thought*, no feature is necessarily prior to any other." Surely in any *system of deductive* thought, premises are necessarily prior to conclusions. If we are considering simply some miscellaneous collection of thoughts, not a system, the collection may be, it is true, without priority among its members. Your thoughts may happen to be all logically disconnected, to be all, so far as they are universal propositions, simple inductions, with no common terms giving rise to pairs of premises. They will be thoughts, none the less (a thought is best defined as an asserted relation between terms), but they will not constitute a system of thought. There is no system of thought

<sup>4</sup>For instance, "physical objects," that "different persons exist," etc.



without interrelations. There is no "system" of thought which does not contain at least some deductive reasoning. But deductive reasoning is non-symmetrical—unless, indeed, it is conducted in terms of the Antilogism (the Inconsistent Triad, as Professor Royce calls it), which, like the simple proposition "no *a* is *b*," is purely symmetrical, destitute of right-and-leftness.<sup>5</sup> This is, in fact, exactly such "a circular system of logic, a substitute for the rectilinear system of Aristotle," as Professor Fite says that he should be at a loss to invent.<sup>6</sup> But, in general, premises entail conclusions, and a conclusion does not entail its premises—the belief that it does is what I have called<sup>7</sup> the fallacy of the extended or of the compound Wrong Conversion—it is the same thing in propositions that ordinary wrong conversion is in terms. This is the simple fallacy upon which the doctrine of pragmatism is built up, and I am astonished to find Professor Fite adopting it as his own. We have need of a new term here—I propose the term (to be used in a technical sense) Confirmatory Evidence. If you have devised an hypothesis, and if you have been able to deduce (with the aid of second premises) a great many consequences from it, and if these consequences all turn out to be in conformity to fact, then you may be said to have strong *confirmatory evidence* of your hypothesis, but you can never reach proof in this way—and not even hypothetically. So if you start with an induction—if it yields you many consequences, and they turn out, upon testing, to be all true, you have gained additional probability for your original belief, but you have not proved it.

It happens that in some deductive systems, notably in logic and mathematics—and it is quite a curious fact—you come upon certain theorems which are "logically equivalent" to one or another of your chosen primitive propositions—either can be proved from the other (of course, with the aid of other axioms and theorems)—*p*, etc., involves *q*, *but also q*, etc., involves *p*. Whenever this occurs, it is matter of taste, of one's feeling for harmony, or beauty of development, whether one shall or shall not substitute this *q* for the *p* originally chosen as primitive.<sup>8</sup> When this occurs, one may rewrite one's first chapter many times after finishing one's book—as many times as one's esthetic instincts demand. This never occurs in physics—in that science the game-aspect is not yet sufficiently in

<sup>5</sup> See my paper on "The Implication," in the forthcoming number of the *Philosophical Review*.

<sup>6</sup> See Schroeder, "Algebra der Logik," § 43.

<sup>7</sup> *Loc. cit.*

<sup>8</sup> When a theorem, *q*, is of this kind, Peano indicates that fact by the letters Pp in the margin—"possible primitive."

evidence—in spite of the fact that it has already become enormously deductive. We are told that a certain principle which was first Avogadro's happy guess, then Avogadro's rule, then Avogadro's hypothesis, and then Avogadro's law, is now a deduction from a great general dynamical theorem which applies to other things as well as to gases—the law of equipartition of energy.

The order of composition of a treatise, or of any piece of reasoning, is seldom the order in which it is finally presented to the reader. There is, for instance, not the slightest reason to suppose that when Euclid invented his geometry he first thought of his axioms and then deduced from them all his consequences. He doubtless set down first the well-known facts of geometry, and then let his imagination search about for more and more primitive propositions from which they could all be syllogistically deduced, until he could no farther backward go. This searching was an act of invention. But having got his best "first principles," he set down, for his reader, all his conclusions—his vast Sorites—in orderly form. He might have written a purely inductive treatise on geometry—in that case he would have saved himself all this toilsome labor of the reasoning mind. Any deductive system of thought is a sort of a game. One is not in search of knowledge simply—one is engaged in the task of seeing from how small a number of primitive premises all known-to-be-true propositions can be syllogistically deduced. The chief difficulty in overcoming the young person's instinctive dislike to geometry is in getting him or her to appreciate this little joke. "Do you have to *prove* every little thing like that?" said a recalcitrant student once in class. Young children do not reason (though I have plenty of experience to show that they can, upon occasion), because they have few universal propositions at their command, and in such as they have, "common terms" are either not present or not noticed.

The doctrine of coherence has, of course, an important rôle to play in logic, though not in the limited field of the hypothetico-deductive sciences. But my doctrine of *histurgy* I regard as better representative of the real nature of the validity of science (or knowledge) than the ordinary doctrine of coherence.<sup>9</sup> By coherence I take its advocates to mean<sup>10</sup> that no inconsistencies or contradictions arise in the course of knowledge—that we come upon no pairs of propositions like "no *a* is *b*" and "some *a* is *b*," which are mutually contradictory. But by the doctrine of *histurgy*, while I include such cases of incoherence as this, I mean to cover much more than simply these abstract, logical, inconsistencies, which seldom arise. Knowl-

<sup>9</sup> See "Epistemology for the Logician," *Verhandlungen des III. Internationalen Kongresses für Philosophie, Heidelberg, 1908*.

<sup>10</sup> Bertrand Russell, "The Problems of Philosophy," 1912.



edge starts with inductions, which are based upon facts. After many of these have been accumulated, it will happen that certain pairs of them contain a common term, in such a form that they are capable of constituting the premises of a valid syllogism. We draw the conclusion, and this conclusion we then submit to the test of fact, simple experiment, or, if they are applicable, refined laboratory methods. If, in a given case, the conclusion turns out to be true, the system has received, to this degree, confirmatory evidence. Thus the closely interwoven tissue of knowledge (hence the name, *histurgy*) is like a tree of many interlacing branches, which, though it may be for long stretches deductive, and abstract, is nevertheless, as a whole, constantly sending down shoots (like the banyan tree) into the solid ground of fact, and hence deriving incalculably strong support. It can appropriate to philosophical use that sentiment of Wordsworth which the journal *Nature* has taken for its device:

“ To the solid ground  
Of Nature trusts the mind that builds for aye.”

CHRISTINE LADD-FRANKLIN.

COLUMBIA UNIVERSITY.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The New History: Essays Illustrating the Modern Historical Outlook.*  
JAMES HARVEY ROBINSON. New York: The Macmillan Company.  
1912.

It is probably not possible for an orientalist to review without favorable bias these charming essays in the interest of a larger and ever-growing outlook, both for the function of history and the method of writing it. That the arena of history was the scene of operation for a larger and more complicated array of forces than those included in the conventional list of categories set up by the majority of historians hitherto, is a fact which is inevitably forced upon the consciousness of the open-minded orientalist, especially if he be in any adequate degree historically minded. In order to discern anything at all of the career of man during long ages in the early east, the historian must often deal exclusively with *material* documents as contrasted with *written* sources. He sets up categories and works them through, which the traditional historical method does not employ, or with which it is even unacquainted. For him flint tools and copper implements are milestones stretching far back into past æons and often marking the course of the human career when all other sources fail. In the writer's student days in Germany we used to state apologetically that it was possible to write only “*Culturgeschichte*” in the field of early oriental history.

It is therefore very welcome to me to find this method proclaimed as

really the proper method in all fields of historical writing. With a commanding range of example and analogy, with constant literary charm and convincing logic, Professor Robinson urges that the *career of man as a whole* is the legitimate subject of history, as contrasted with a too exclusive attention to organization and institutions, or the cataloguing of wearisome series of events, all analogous in character, in a realm of little significance in explaining the general progress or logical sequence of events, where one or two examples might have served equally well as typical of the whole class of such events.

Your reviewer is unable to do full justice to the range of materials, with which the author's position is buttressed and supported, and to the supplementary contentions involved in his general position. While it is a position toward which there has been a distinctly noticeable drift among leading historians for some time, as evinced for example in the treatise on general anthropology introducing Meyer's "*Geschichte des Altertums*," historians, as a whole, and notably in the writing of text-books, have been lamentably slow in discerning and appropriating the new method and point of view. *Educationally* there can be no question as to the value and the ultimate triumph of what Professor Robinson well calls the "new history." Your reviewer is also convinced of its *scientific* value. The old categories as traditionally employed are quite insufficient to disclose the slow fusion of races and peoples, of religions and even of institutions, a process which, when discerned, at once obliterates the sharply drawn artificial lines of demarcation between periods and peoples as we find them in the current histories. The so-called fall of Rome, as employed by Professor Robinson, is a convincing example of this fact. Similarly when the early history of the eastern Mediterranean has been adequately written on the basis of the whole life of man, there will be disclosed to us a gradual interpenetration of eastern and western life, of early Oriental and Ægean civilization, to which the interfusion of Roman and German in the fifth century furnishes a perfect analogy. As the author notes, it is chiefly the anthropologist who has demonstrated how much of so-called paganism has survived even in modern Christianity, and how utterly unable is a new religion completely to displace an old one. This is a fact of first-class historical importance. The last ten years have disclosed how the fabric of modern life in Palestine is tintured through and through with pre-Moslem, pre-Christian, and, indeed, far earlier ancient Semitic customs and beliefs. The tenacity of such things has hardly as yet been suspected by the modern historian. A winter in Bordighera, on the Italian Riviera close to the French frontier, disclosed to the present writer, in the market-place of this old town, such Arabic words as "*rub'a*," for "quarter," "*kufiya*," for a "headcloth," and some others, although it is a thousand years since the Saracen outposts were driven back from these regions after Charles le Martel's victory. Such words have no literary existence, but have survived in folk custom and the jargon of the market-place for a millennium. The tenacity of life displayed by such things as these is a historical fact of the highest importance, because it demonstrates the possibly early origin of many elements of human life still



surviving in modern times. The fact allies itself with the psychological kinship between man and the animals as disclosed in the study of animal psychology, discussed by Professor Robinson, and suggests the little suspected remoteness of the origin of much in the life of the modern man.

The writer can only reiterate his complete sympathy with the point of view for which Professor Robinson contends in this little volume, and express the hope, as well as the belief, that the book will contribute substantially toward the employment of a historical method of more generous scope and larger outlook on life.

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UNIVERSITY OF CHICAGO.

## JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. May, 1912.

*Remarques sur la philosophie de Rousseau* (pp. 265-274): E. BOUTROUX. - Rousseau's philosophy represents the history of humanity in three stages: (1) a state of nature, ruled by instinct; (2) a social state, corrupt, with feeling subordinated to intelligence; (3) a political and moral state of regeneration. Its weakness lies in the barrier erected between the political and the social life. *Rousseau et la religion* (pp. 275-293): H. HÖFFDING. - Rousseau's chief merit is in bringing the problem of religion into close relation to the problem of civilization in general. *Les idées religieuses de Rousseau* (pp. 295-320): D. PARODI. - A study of the part religious ideas played in Rousseau's life, and their positive content in relation to his voluntarism. *Les idées politiques de Rousseau* (pp. 320-341): B. BOSANQUET. - Exposition of Rousseau's influence, not from the point of view of his own time, which was hostile to him, but from the point of view of a later time which had accepted him. *Rousseau et le Socialisme* (pp. 341-352): C. BOUGLÉ. - Study of the degree and sense in which Rousseau could be called the forerunner of socialism as it stands to-day. *Les deux tendances de Rousseau* (pp. 353-369): M. BOURGUIN. - The man of passion and imagination as opposed to the implacable logician. *Les idées politiques et sociales de J. J. Rousseau* (pp. 371-381): J. JAURÈS. - A general sketch of Rousseau's political and social conceptions. *Notion et portée de la "Volonté générale" chez J. J. Rousseau* (pp. 383-389): R. STAMMLER. - Rousseau as a pioneer in investigating the idea of law and determining the legitimacy of political life. *Rousseau et la conception fonctionnelle de l'enfance* (pp. 391-416): E. CLAPARÈDE. - Modern psychology is increasing the value of Rousseau's theory of education, and the end is not yet, for we are just beginning to appreciate its profound and vital significance. *Quelques mots sur la querelle de Hume et de Rousseau* (pp. 417-428): L. LÉVY-BRÜHL. - A biographical study. *Rousseau et Kant* (pp. 429-439): V. DELBOS. - Rousseau's influence on Kant, especially in ethical conceptions. *Rousseau, Goethe et Schiller* (pp. 441-460): J. BENRUBI. - In combating the hypocrisies of an intellectualistic civilization, and in their strife for the inner ennobling of individual and social life, Goethe and Schiller continue the work of Rousseau. *Rousseau*

*et Tolstoi* (pp. 461-482): G. DWELSCHAUVERS. — A picture of a very close literary and philosophical influence. *Supplément*.

Ellwood, Charles A. *Sociology in its Psychological Aspects*. New York: D. Appleton and Company. 1912. Pp. xiv + 417.

Ruge, Dr. Arnold. *Die Philosophie der Gegenwart*. Vol. II. Heidelberg: Weiss'sche Universitäts Buchhandlung. 1912. Pp. 306. 15 M.

## NOTES AND NEWS

### LETTER FROM PROFESSOR DE LAGUNA

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

Mrs. C. L. Franklin, in a private letter, has complained that, in my recent paper on *Opposition and the Syllogism*, while I gave her credit for the method of reduction employed, I did not credit her with the triadic formula:

— [(S. P). — (S. — M). — (P. M)].

I had learned the formula from another source, and was ignorant of its authorship.

Very respectfully yours,

BRYN MAWR COLLEGE,  
September 26.

THEODORE DE LAGUNA.

DR. MADISON BENTLEY, assistant professor of psychology at Cornell University, has been called to the chair of psychology at the University of Illinois. Dr. H. P. Weld, of Clark University, is to be assistant professor of psychology at Cornell.

DR. W. F. BOOK, professor of psychology and philosophy at Leland Stanford University, has accepted a professorship of educational psychology at Indiana University, succeeding Dean W. A. Jessup, who goes to the University of Iowa.

PROFESSOR WILLISTON S. HOUGH, dean of the Teachers College and professor of philosophy at the George Washington University, died suddenly on September 18, at the age of fifty-two years.

PROFESSOR T. GOMPEREZ, of the University of Vienna, has recently died at the age of eighty years. He was distinguished by his studies in philology and philosophy.

MR. WILLIAM McDUGALL, Wilde reader in mental philosophy at Oxford, has been made an extraordinary fellow of Corpus Cristi College.

RUDOLF PINTNER, M.A. (Edinburgh), Ph.D. (Leipzig), has been appointed professor of psychology and education at Toledo University.

LOTUS D. COFFMAN (Ph.D. Columbia, 1911) has been appointed to a professorship of education in the University of Illinois.

DR. GEORGE SANTAYANA, professor of philosophy at Harvard University, has resigned.

DR. R. A. TSANOFF has been appointed instructor in philosophy at Clark University.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE NATURE OF CONSCIOUSNESS. III

IN the two preceding articles it has been shown that the image, or sensuous fact in perception, is a psychic existence, and that it is the medium of cognition, that is, the part of the mind concerned in cognizing. In other words, proof has been given of the existence of "consciousness" in the sense in which it means *feeling*. We pass now to the second branch of our subject, "consciousness" in the sense of *awareness*. The question is, How does the image enable us to cognize or be aware? What is awareness, and what does it involve?

#### II. THE MECHANISM OF AWARENESS

Awareness may be defined as the mere experiencing or thinking *of* a thing, apart from any thought *about* it. It is bare "knowledge of acquaintance," perceptual and conceptual. It is the function by which the mind *has to do with* an object, has an object before or *present to* it—"presentation."

Thus it is necessary to conceive awareness in such a way as, on the one hand, to include thinking *of* absent things, or representation, and, on the other hand, to exclude thinking *about* things, *i. e.*, interpretation, or "thought" in the proper sense. Of course we can think *about* some things only by thinking *of* others, and, in so far, awareness enters even into thinking-about.

In conceiving representation we must beware of falling into the fallacy of representativism, referred to in a previous article. Though in sense-perception our awareness of the object is obviously direct, we are apt to suppose that in memory, for instance, this is not the case, but that what we are immediately aware of is a mental image or duplicate of the object, which only stands for it. This, however, is an error. Memory has as directly to do with its object as presentation proper. The mental image, which is undeniably necessary, is not the object of the awareness, but its vehicle or medium—the part of the mind concerned in remembering; and from

this the relation of knowing goes straight to the remembered fact itself. *What is copied or duplicated in memory is not the object, but the knowing activity—representation is re-presentation*, presentation in fainter form in the absence of the object that originally evoked the cognition.

Representation is evidently derivative from presentation proper—we never should think of things in their absence if we had not experienced their presence. Awareness of a present object is perhaps best called *cognition*. Of this there are two forms: sense-perception and introspection. Cognition, or, to call it by its epistemological name, experience, is the function in which knowledge (knowledge of facts at least) is acquired—in the one case knowledge of physical facts, in the other case knowledge of feelings.

Of the two forms of cognition, introspection is at present far the less clear to us, since we do not at all know what is the medium of the awareness; whereas, in the case of sense-perception, we know that it is the image. We had better, therefore, content ourselves here with analyzing awareness as exemplified in sense-perception.

On the threshold a difficulty meets us. All actual sense-perception is a compound of cognition with "thought"—that is, with interpretation by means of representations (or at least by means of habits that past experience has left behind). To get awareness in the pure state, we must separate this thought-element out; and this can be done only by an ideal abstraction. Moreover, a school of philosophers exists who define awareness as thinking-about—this may be called *the post-Kantian definition of awareness*—and we must settle our scores with them before we can proceed.

According to these philosophers, sense-experience without thought would be mere sensation, not knowing. We are aware of a thing only so far as we conceive it; in other words, only awareness of a thing *as being this or that* is allowed to be awareness. Thus, to be aware of a color, *e. g.*, red, it is not sufficient to see it, but you must think of it as different from green and blue, or as called red, or as in a certain place; without which it would be "nothing for us as thinking beings." This is cruel to the lower animals, who presumably are without the power of thought, yet who look at things and act very much as if they were aware of them. The bird who eyes me from his cage is in a true sense aware of me, even though he can not think. Might not things be "nothing for us as thinking beings," and yet something for us as percipient beings?

The post-Kantian view finds expression in the current formula that "all knowing is judgment." What this really means is that no knowing is simple apprehension or cognition. It follows as a conse-



quence from the post-Kantian denial of things in themselves, since without an independent object there is nothing to be cognized, and hence no such function as cognition. We, conversely, who recognize an independent object, must also recognize a function of cognition or awareness distinct from thought.

No sane person would underrate the immense importance of thought. Without it not only would there be no such thing as science, but we should not even be able to profit by our experiences or to carry anything away from them; so that, in so far as experience means a learning and not simply a momentary awareness, thought is indeed essential to its possibility. Without thought sense-perception would be a mere dumb staring at the subject, with, no doubt, correct instinctive responses to it, but without any accession of wisdom.

This admitted, we must insist with firmness that thought is a superstructure erected upon perception, and that perception is independent of it and does not necessarily involve any admixture of thought. When Kant says that sense and thought are both necessary to experience, his "sense" is not mere sensation, but sensory awareness, cognition. We must be aware of an object before we can relate it to other things according to the categories. Cognition is prior to thought both epistemologically and logically.

Logicians recognize this when they distinguish simple apprehension from judgment and make it something which judgment presupposes. How, indeed, could we think *about* a thing unless we first thought *of* or perceived it? The attempt to explain perception by thinking-about is a hysteron-proteron, completely reversing the true relations of cognition and thought.

Thinking about a thing perceived must take place by means of representations additional to the image that conveys the thing. But these representations are themselves presentations of other things; we must apprehend the predicate, as well as apprehend the subject, before we can judge. Presentation, then, can not be explained by means of judgment, but judgment must be explained by means of presentation.

In these observations my assumption has been that the "judgment" referred to is an *explicit* one—the "thought" an actual element of consciousness distinct from images (or possibly fused with them). If the judgment meant is only implicit, I answer that an implicit judgment is no actual judgment at all, but only the behaving as if you were prepared to make one. Doubtless in cognizing an object we imply by our conduct the object's existence, but judgment in that sense is quite a different thing from judgment in the sense of predication.

Since, then, epistemologically, "thought" presupposes cognition, and since logically it involves several awarenesses, not only that of the subject, but also that of the predicate and of the relation between them, I think we may safely put this function on one side, even though we have to do so by an abstraction, and analyze awareness as if it were entirely unaccompanied by thought.

What is it for us to be aware of a physical object—wherein consists presentation of it?

We know from the preceding articles that the first requisite is an image. The mere existence of the object, then, is not in itself a being presented, but presentation is a distinct and additional fact, contingent on the rise of an image. On the other hand, the mere presence of the image is not in itself a presentation of the corresponding object. For image and object are distinct facts, and there is nothing in the image considered by itself which points to or announces an object. Introspection reveals no awareness in the image. When we scrutinize the image introspectively, we find it to be simply a form of feeling; and, if there is any awareness present, it is our awareness of it, not its awareness of the object. True, when we scrutinize the image thus we are no longer sense-perceiving, and the image has passed from a subjective to an objective position; but there is no reason to suppose that in this passage it has changed its nature, or that introspection does not show us correctly what it was. It follows that that which makes the image aware, or us aware by means of it, must be sought outside its own being.

But not in another simultaneous element of consciousness. The other element most likely to serve the turn would be "thought"—say, thought of the image as referring to an object—but thought, as we have seen, is simply other awareness, awareness of other objects, and therefore can not be used to explain awareness itself. If, on the other hand, we were tempted to look to a hypothetical centre of consciousness, other than all images and thoughts, a sort of eye of the mind, as the locus of this awareness, the difficulty would be that it could only explain awareness of the image, whereas what we have to explain is awareness of the object. The real eye of the mind, or part of the mind that perceives, is the image itself, and awareness must be a relation passing from it to the object—as we see when we consider that in sense-perception the image is not, so to speak, in the line of vision, or an object of awareness, at all.

*Can it be that the relation in which awareness consists falls outside the mind—that awareness is not, strictly speaking, a psychical fact, or property of the mind considered as an existence?*



In order to explain the mechanism of awareness, we need two premises, one of them distinctly stated and the other implied in the preceding articles: (1) that the objects of sense-perception are real existences, (2) that these existences are not only in time, but also in space, or in an order symbolized to us by space.

1. We saw that realism follows from the *lateness* of the image. If the object were merely a sort of composite picture formed out of images or a concept of their permanent possibility, we should expect it to be assigned to the same moment of time as the image. It would be impossible to understand the constraint the facts put on us to refer it to an earlier moment—indeed, this peculiarity in the facts would appear an unaccountable anomaly. Whereas, if the object is a real existence, and the image an effect which it calls forth, their temporal relation is the most natural thing in the world.

The reluctance of philosophers to admit that the object causes our perception of it has been due in part to a confusion between the appearance which the object presents in sense-perception, and the image by means of which this appearance is presented. The object does not cause the *appearance*: for the appearance is the object as it appears, and the object can not be causally related to itself even as it appears. What the object causes is the image by means of which it appears; and this, being another existence in the same world with the object, can perfectly well be causally related to it.

The proof of realism I offer, then, is that no other view affords a satisfactory explanation of the temporal gap between object and image. I do not, of course, mean that the idealist can not *state* the facts in terms of his theory—can not say that the object, besides being referred outward, is also (at least as soon as we learn of these peculiar facts) referred backward, and yet, for all that, is purely ideal. No detail of perceptual experience would be different on this hypothesis from what it would be on the hypothesis that the object is real: *in pure logic* the two hypotheses are exactly on a par. But not *in science*. The realistic hypothesis gives an intelligible explanation of the time-gap, the idealistic hypothesis gives none. Not only so, but the latter makes such an explanation, quite plainly, forever impossible. Now we may admit for argument's sake that the time-gap *might* conceivably be an ultimate fact, which we must accept without explanation; but, in science and philosophy, it is a legitimate ground for preferring an hypothesis that it absorbs anomalous facts and brings them into intelligible connection with others, and the simplest hypothesis that systematizes all the facts is considered true.

Idealists might with a better grace point to the logical purity and adequacy of their doctrine if they would apply it consistently all

round—for instance, to memory, expectation, and knowledge of other minds. Is there any idealistic reader who is prepared to deny, quite generally, that things can exist independently of our minds and yet be known?

A more colorable objection to independent things in sense-perception is the difficulty of assigning to them a nature. Idealists maintain that the kind of existence best known to us, indeed the only kind we can really conceive, is psychical. Hence they urge that realism involves dualism. Some idealists even consider that, if real things be assumed beyond our states of mind, the states become unreal by comparison. Either all reality lies beyond us, or none does: such is the only alternative they seem able to conceive.

But if, as we saw, the image is an existence, a portion of reality, there is evidently an intermediate possibility: namely, that what lies beyond us is only *the rest of reality*—in other words, that in cognition reality is, so to speak, bisected, far the greater part of it lying beyond, but not the particular part that cognizes. Here is an hypothesis that would have great advantages, since, in the first place, it does away with dualism. If we consider, secondly, that the image is a psychical fact, we shall see that the other point of the idealists, viz., that the only existence conceivable is psychical, is in a fair way to have justice done it. For, granting that the psychical is the existence best known to us—that is, known most nearly as it is; if it be true, as has been shown, that we know objects only through the medium of images, so that what they are in themselves remains more or less problematic; there is nothing to prevent our supposing that, in themselves, they are of the same nature as images and feelings: especially as these latter appear to have been evolved out of them.

Such panpsychism can not be denied to be an exceedingly economical hypothesis, since at a single stroke it achieves monism both with regard to the arrangement of reality and with regard to its nature. As to the former, note that the bisection in cognition is, so to speak, movable: now it is one image that is on this side the line permitting us to cognize one object, now it is another image permitting us to cognize another object; and, since each image is a part of the world, it is itself an object which in its turn is capable of being cognized through the medium of some other image. Thus there is no part of the world that is not capable of being cognized, in the way in which sense-perception gives us cognition of objects. Add to this that we have introspection, enabling us to cognize in a more intimate way our own images just after they have occurred.

The drawback (if it really be one) of the hypothesis is that it obliges us to some extent to materialize the psychical—to conceive,



on the one hand, that psychical facts are capable of appearing under a physical form, and, on the other hand, that all physical facts are appearances of the psychical.

It is not necessary, however, to the following explanation of awareness to assume that the realities which appear as inanimate objects are psychical in their nature. It is sufficient to assume that they are other existences in the same world with the image.

2. Realistic theories vary greatly in the amount of information they suppose sense-perception to give us about the object—in the degree, that is, in which they consider the object to resemble the form under which it appears to us. Kant's "things in themselves," for instance, are neither in time nor in space, so that everything perception tells us about them (if it can be said to be about them!) is wrong. We are forbidden any such agnostic view of our own real things by the nature of the argument used to prove them. Since this argument was the time-gap, we are committed to conceiving them as at least in time. The object is an existence at an earlier time than that of the brain-event.

If we follow out this line of thought further, we shall see that they must be assumed to be also in space, or in something that appears as space. For the time-gap is greater in proportion as the object is more distant from us; it is greatest of all in the case of such a very distant object as a star. Now, time being real, what is this interval of real time needed for, except precisely to enable the light-rays to traverse the space intervening between the object and us? This space, then, must be as real as the time. That, in itself, it is just like what it appears to be, we need not assume.

A conclusion not essentially different from this may be urged on other grounds. If you deny that space is real, you can not mean to shrink simultaneous reality together into a point, or a distinctionless unity. Room must be found at least for the difference between individual minds; so far as isolated centres or fields of experience exist, and they certainly exist in vast numbers, reality must be plural, it must consist of separate if connected parts. Furthermore, so far as many distinct thoughts and feelings coexist within each centre or field, reality must be still further divided up. Even recognizing only individual minds, then, reality consists of an immense number of simultaneous parts.

But these parts, surely, are not without relation—they form an order. Very great differences exist in the ease with which one part of reality is able to affect, or produce changes in, other parts of reality. For instance, I can excite a feeling in a person at my side by merely touching or speaking to him: whereas to a person across the ocean I must send a cablegram or a letter, which may take days.

We can hardly consider the case without recognizing that there are in reality, so to speak, *paths by which the causal influence finds its way about*. These paths, these relations of nearness and remoteness, nextness and non-nextness with respect to influence, correspond exactly to the spatial relations between perceived things; so that, even if we deny reality to be in space, we shall have to admit a quasi-spatial order of its parts which will not be so very different. If any reader, then, rejects real space, I beg him to substitute for it this quasi-spatial order or these paths of influence: and they will serve equally well as a basis for the explanation of awareness I am going to give.

At the outset, I want to declare in the most explicit way that it does not enter into my plan to question that we *are* aware of the object. I accept awareness as a fact. If any one expects my theory of awareness to deny that awareness is a fact, he will be disappointed.

Let me point out, however, just what this declaration does, and what it does not, involve. On any theory of awareness, that of which we are aware is the object, and the object alone. You can not, without vitiating the logical purity of the object, introduce into the conception of it any taint of subjectivity or flavor of the cognizing process. Logic is the science which tells us how to think with perfect correctness about the things we cognize. And logic must insist that what we cognize is exclusively objects and relations between objects. *Logically*, then, awareness is a function which takes us to the object: awareness can not be recognized at all without admitting self-transcendence in a logical sense.

This, however, must not be taken to mean that the report cognition gives us about the object is necessarily authoritative and final. It only means (1) that sense-perception really reaches the object and brings it before us; (2) that its report deserves confidence so long as it is self-consistent and not contradicted by information derived from other sources. That there are limits to the trustworthiness, or rather to the adequacy, of sense-perception is shown by the existence of "secondary" qualities.

If realism is true, we are in an entirely different position in accounting for awareness from what we should be on the idealistic hypothesis.

1. For, in that case, besides the object and the image there is also *the body*. The body is real, it exists during cognition, it is another object than the one perceived, and an object lying closer to us. Indeed, on our view it surrounds the image—the image is, as it were, at its centre.



2. With the body come also the sense-organs. The image is not merely in a general way an effect of the object, but it is an effect produced through the medium of the sense-organs.

3. Then there is the other side of the matter: the image enables the body, by means of the motor apparatus, to react on or towards the object. It would be a serious omission, in our quest of the secret of awareness, to overlook this motor function of the image, from which we have thus far abstracted. The image would not exist at all if it were not for its rôle of enabling the body to adjust itself to the object.

4. Thus, quite independently of awareness, the image is connected with the object by what we may call *afferent and efferent relations*. We are apt to conceive the problem as if we had simply the image, swinging *in vacuo*, on the one side and the object on the other, and had then to account for the image cognizing the object; but this in reality is an illusion, it involves an abstraction: the image (if we are right that it is in the brain, or even if it is only correlated with a brain-event) is held in position towards the object by a set of definite physical relations. So far from being *in vacuo*, it exists (either as itself located, or through correlation) at a perfectly definite point in the world, next to some things and not next to others, able to be acted on by and to react to the things in its immediate neighborhood and not other things. It is like a gun which, held by a certain person and pointed in a certain direction, must if it goes off hit a certain object.

These things being so, *why need we in accounting for awareness admit any self-transcendence except the logical one?* Why need we assume the undoubted logical self-transcendence to be incarnated in a psychological power, other than feeling, and of the nature of a mysterious intuition?

Two possible conceptions of the psychology of awareness stand opposed to each other.

The one is the popular conception, the conception we all find ourselves possessing as a result of our every-day contact with the facts. On this view, all the color and variety lie in the object, and awareness is a pale, diaphanous something, the mere mental grasp, so to speak, which we have on this color and variety—something which, like a lens, brings the object better before us in proportion as it is itself transparent and invisible. This conception may be called *intuitionism*. A distinctive mark of it is that it makes awareness an ultimate fact (awareness conceived psychologically, I mean—logically awareness is indeed ultimate), incapable of resolution into anything simpler.

The other conception is that to which our whole exposition has been tending, and I would designate it as *projectionism*.<sup>1</sup> This view also puts the color and variety in the object in the double sense (1) that in cognition they appear as qualities of the object, and (2) that they bring before us real characteristics of it, which vary as they vary; but, considered as existences, it puts them in the image or subject, from which it conceives them to be projected much as the beams of a searchlight are projected upon a distant ship—or, to use a more accurate simile, as blue spectacles shed their color upon the object seen through them.

Projectionism differs from intuitionism in assuming nothing ultimate or incapable of analysis. It assumes, in fact, nothing but the afferent causal relations by which the image was called forth, such resemblance or correspondence as actually exists between it and the object, and the efferent causal relations by which adjustment to the object is effected. Self-transcendence it looks upon as purely logical.

Let me try to reply to certain objections that are likely to be felt.

1. It will be said that the existential connections just mentioned in no way account for the cognitive character of the image, or serve to communicate a cognitive character to it. They fall outside its being, are unfelt by it, and, so far as it is concerned, are as good as non-existent. No matter what other things surround it in the world, a non-cognitive feeling remains a non-cognitive feeling still.

Of course it does, I reply; but my contention is precisely that a cognitive state is, in itself considered, a non-cognitive feeling. The critic would be more likely to see in this proposition a correct account of experience if he would not look at the feeling or image abstractly, but consider the *cortège* of other feelings in the midst of which it comes. Actually each image is a brief momentary state, occurring in the midst of others and succeeded by others still; and the different images, besides their merely psychological simultaneity and succession, are related to each other as they must be in view of the fact that they are effects of surrounding objects. All this, it is true, is unknown to the images; nevertheless there is method in the way they come. Again, the images do not merely in fact evoke bodily reactions, but these reactions in their turn contribute feelings, namely, kinesthetic ones, that are likewise in methodic relation to each other and to the images. Finally, these various images and feelings sue-

<sup>1</sup>The sources to which I am indebted for this conception are Professor James's article on "The Function of Cognition," in *Mind* for 1885, pages 27-44, reprinted in his posthumous "Essays in Radical Empiricism," and Professor Miller's article on "The Confusion of Function and Content in Mental Analysis," in *Psychological Review* for 1895.



ceed each other in a train *all the members of which are accessible to memory*; and this accessibility to memory introduces among them a certain unity, in so far as we can at any moment pass in thought from one to any other, by moving backward or forward along the line.

In this I am simply pointing out undeniable facts about the sequence of our feelings—facts that are so, whether the (so to speak) intelligible connection between our feelings is to be found in them, or lies outside them. The possibility therefore exists that the thread on which our feelings (so far as they are cognitive) are strung is an external one; that we never can understand their performances unless we take account of their external relations.

In a word, feelings need not be intelligent in themselves, provided they follow one another in an intelligent order. The functions they discharge will then communicate to our life as a whole as much intelligence as we feel it to possess.

But this, it will be said, at least assumes memory, as a real faculty of contemplating or cognizing feelings. Not at all, I answer; memorial knowing is presumably explicable on just the same principles as perceptive knowing. And introspection is, in my opinion, simply a form of memory.

2. It may be objected that I have not explained how the image, which according to the theory is in the brain, or at least the quality of the image, comes to be found in the object—have not justified, in other words, the metaphor of *projection*.

The reader will recall that in sense-perception, as we saw in an earlier article, our attention, as is shown both by our overt acts and by our sensory accommodations, *is occupied exclusively with the object*. The different colors, shapes, and sizes of images operate in us solely as incitements to different kinds of behavior towards objects. Or, to put it otherwise, that in the image which guides our action and thought is solely what has come through to it of the object: it is only so far as the image has the object's shape rather than a shape of its own, the object's size rather than a size of its own, and so far as its color can be safely treated as the color of the object, that it affects our conduct and thinking at all. But this is to say, almost in so many words, that the image is taken as being where it is not and what it is not—that it is projected into the object.

And this, I believe, is the real truth of the matter; by the unanimous voice of all our reactive tendencies the image is pronounced to be in, if not actually to be, the object.

The projection of the image is, above all, a conferring of depth. This, as we saw, is not, as such, a character of the image. How can an image not possessing depth acquire it? The answer is now plain.

By prompting us to act as if the object, with which alone we have to do, were at a certain point. To direct our action thus, the image must of course itself have certain characters: one image will prompt one movement and therefore show us an object at one distance, another image another; or the same image coming in different settings may have different motor and perceptual effects. It is always the image taken with its motor promptings that explains what we perceive.

Such, then, is projection—a rooted habit of seeing the object in the guise of the image, and yet where the image is not.

This account of awareness touches modern psychology at three points.

1. It rehabilitates the notion of "eccentric projection." Physiologists, assuming in perhaps too naïve a sense that sensations were in the brain, spoke of a process by which they or their qualities were transferred to objects outside the body. Psychological critics retorted that this was mythology: sensations are not first in the brain, and then moved out; what is in the brain is only their physical concomitants, but the sensible qualities are from the outset discovered in objects; as for the sensations, they are not in any place at all. To criticize the physiologists thus was to take in a literal sense what had been meant in a metaphorical—or, rather, to take in an existential sense what had been meant in a logical. The place where in sense-perception the qualities appear to us to be is in the object; that is true. But the place where they *are*, together with the psychic existences of which they are primarily qualities, we have shown is in the brain. Their escape from the brain and installation in objects can only be explained by a sort of logical or intentional projection: by the fact that from the outset we take them only as signs, and ignore their existence in any other character—just as the practised reader never once thinks of the letters.

The physiologists seem to me to have been entirely in the right. Their conception needs only to be taken in its true logical sense, to furnish the key to the nature of awareness.

2. Modern psychologists have, I think, largely given up belief in a "third conscious element," and explain will as a complex of feelings and sensations, with or without anticipatory ideas. The older psychology of course recognized, side by side with cognitions and affections, a class of conations, the essence of which was a conscious exercise of power. We now know (a) that there are no such things as "feelings of innervation," accompanying the outgoing nerve-current; (b) that all psychic states are dynamic, or tend to produce motor effects, in like degree, and that our feeling of our own activity, so far



as it is something over and above this motor tendency, is due to sensations from muscles, joints, etc., apprizing us that the motor effects have already been produced.

Now will, in the older conception of it, was one of the two instances of the mind's power of self-transcendence, the other being cognition; and the modern theory of will amounts to the denial of any such self-transcendence *as a psychological fact*. It was inevitable that the one instance of psychological self-transcendence remaining should meet with a similar explanation. Projectionism and the modern theory of will agree in principle, and stand or fall together.

3. Another modern theory to which our hypothesis stands in close relation is the "James-Lange" theory of emotion. A little reflection will show that projectionism is simply the application of the essential principle of this theory to cognition. For there are bodily effects characteristic of cognition, just as much as of emotion: *e. g.*, incipient discharges into the muscles expressing the motor tendency of the state in question, continued accommodation of the sense-organs for attending properly, etc. These effects give rise by "return wave" to sensations, which communicate to the cognitive state its special coloring. Hence, just as James could say, by an excusable hyperbole, "We are angry because we clench our fists, we are ashamed because we blush," so the projectionist may maintain that we cognize because we attend and react.

Consider a cat, intent upon a mouse-hole from which certain exciting noises have come. Must we conceive that the cat's *psyche*, so far as expectant of the mouse, is endowed with a miraculous power of self-transcendence, not reducible to images or feelings, and not explicable by evolution? Is it not simpler to say that, when a certain image evokes movements of crouching and watching with the accompanying feelings, the cat *ipso facto* is aware; in short, that she expects the mouse because she crouches and waits for it?

Like emotion, cognition has its origin in instinct. An instinctive act differs from a merely reflex one in that it involves the intervention of consciousness, *i. e.*, of psychic states; for instance, the bird must have certain feelings and see certain objects in order to be prompted to build her nest, the chick must see on the ground a grain-like object in order to be prompted to peck at it, etc. Many such activities take place with entire perfection at birth. This must mean that ready-made nerve-connections pass from the visual centres to the motor tracts, so that on the very first occasion on which the object is seen it produces, not a mere sensation, but a perception. A sensation which automatically incites a reaction to the object that called it

forth, in such wise that there is a virtual judgment of the object's presence, is a perception.

In mature beings often no actual reaction is evoked, yet we can not doubt that there has been a perception. This may be because the act was inhibited by other instinctive stimuli operating at the same moment. It would be wrong, obviously, to make an actual reaction necessary to a cognition. What is necessary is rather that the nerve-connections should exist in virtue of which the reaction is possible. And, just as we must thus exclude the efferent causal relations so far as signifying any actual occurrence, so we must exclude the afferent ones considered as actual facts (though both are throughout *implied*, *i. e.*, as existing in some cases): what makes the image cognitive is neither the fact that it has been called forth by the object, nor the fact that it enables us to react to the object; but the fact that, standing at the point in the world where it does, and being what it is, it is the fit instrument for guiding our adjustments to the object—because it is the sign within our minds of what the object is. And, when I add that it really serves as such a sign, that through it our minds are so directed upon the object as never once to think of the sign itself, this is only another way of saying that the image does really bring the object before us.

Let those who are tempted to believe in a psychological self-transcendence make clear to themselves that the image functions in all ways *as if* it were aware: and then ask themselves whether such functioning-as-if does not make their own hypothesis idle.

In the foregoing we have considered projectionism only in its application to sense-perception. I have not room to explain how it would apply to other forms of presentation, such as memory, thought, etc., but must content myself with suggesting that the application could be made.

In conclusion, the reader may be put on his guard against two misconceptions.

1. Though I explain awareness by the practical function of the image, I do not regard it as consisting in that practical function. It has been pointed out that no actual reaction need take place, and that all that is necessary is that the image should be of such a character as to make the right reaction possible. Projectionism does not, then, resolve awareness into action, but only into a peculiar relation between existences which is the condition of action.

2. If any one chooses to say that this relation between existences is not itself awareness, and that the only thing that deserves that name is the logical self-transcendence which is thereby made possible—in a word, the fact of appearance, as such—I have no objection



to this terminology. Only the critic may be reminded that the appearance is *of* the extra-bodily object *to* the intra-bodily subject, and so itself a relation between existences, even if not an existential relation.

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## DISCUSSION

### MR. MUSCIO'S CRITICISM OF MISS CALKINS'S REPLY TO THE REALIST

I HAVE just read with great interest Mr. Muscio's able and clearly written criticism<sup>1</sup> on my paper, "The Idealist to the Realist."<sup>2</sup> Muscio's statement, mainly in my own words, of my argument may be summarized as follows: "What is asserted is that the 'idealist discovers by examination of objects—he does not (as the realist accuses) assume—that both sense qualities and relations are mental.' Hence the question arises: What does Miss Calkins mean by 'mental'? The answer to this question is best seen from the treatment of sensible qualities. . . . The 'idealist' we are told, 'rests his case . . . on the *results* of direct observation coupled with the inability of any observer to make an unchallengeable assertion about sense qualities save in the terms of idealism. To be more explicit: The idealist demands that his opponent describe any immediately perceived sense object in such wise that his description can not be disputed. The realist describes an object as, let us say, yellow, rough, and cold. But somebody may deny the yellowness, the roughness, or the coldness; and this throws the realist back on what he directly observes, what he knows with incontrovertible and undeniable certainty, namely, that *he is at this moment having a complex experience* described by the terms yellowness, coldness, and the like (an experience which he does not give himself). This statement, and only this, nobody can challenge.' "

Mr. Muscio's criticisms are two:

I. It is impossible to "describe" sense qualities for they are elemental, incommunicable (p. 324).

II. Miss Calkins uses the term "mental" ambiguously, meaning by mental sometimes (1) the "incommunicable" (p. 324), sometimes (2) "that which is like me" (p. 325). Now, the sense-quality is in truth (1) incommunicable, but is not on this account "mental."

<sup>1</sup> This JOURNAL, Vol. IX., pages 321-327.

<sup>2</sup> *Ibid.*, VIII., pages 449-458. In the passage which follows, the sentences in single quotation marks are from this paper.

And (2) in the second and admissible sense of mental, yellow is not mental, that is to say, it is not true that yellow "thinks, feels, wills, acts" as I do (p. 325).

Upon these criticisms I have the following comment to make: I entirely agree with Mr. Museio that it is impossible to describe a sense-element. But the quotation from my paper makes it clear that I apply the term "describe" to the sense-object, or sense-complex, not to the sense-quality. I speak of making assertions about qualities and of "describing" objects, or things, by enumeration of their qualities. Mr. Museio's criticism is here based on a misreading of my statement. But this is a minor point and need not detain us.

Far more important is Mr. Museio's distinction between (1) "mental" in the sense in which yellow may be called mental and (2) "mental" meaning "like me"—a difference which, as he rightly notes, my paper, "The Idealist to the Realist," ignores. My reason for leaving so important a distinction out of account was the fact that I was strictly limited to fifteen minutes in the delivery of the paper, and that it overran its predestined bounds in its published form. I offer this, however, as explanation, not as excuse, for Mr. Museio's criticism more than half inclines me to believe that I might better have withheld a partial statement of my view. The present brief discussion is mainly an attempt to make good the former omission.

I agree with Mr. Museio in the belief that the basal meaning of "mental" is "like me." To be mental is, ultimately, to be a self. The form of idealism which I uphold is, in other words, personal idealism,—the doctrine that the universe is constituted by inter-related selves, not phenomenalist idealism, the Humian doctrine that things and selves alike are resolvable into series of mental "contents," impressions, and ideas. In what sense then can I call "yellow" mental, since (as my critic rightly insists) yellow does not, like a self, "think" or "feel." I answer: yellow is mental in the subordinate sense of being an "aspect" or "partial experience" of a self. The only unchallengeable assertion about yellow is that it is a *way in which I, a self, am conscious*. Mr. Museio accordingly mutilates reality when he says that yellow is mental only in the sense of being incommunicable. For yellow is not merely incommunicable: it is the incommunicable experience of a self. The conception is in truth through and through personal: the "communicated" is experience shared with and by a self, and the "uncommunicated" is that experience which a self does not share.

To summarize this reply to Mr. Museio: I agree with him that the term "mental" is used in two senses in my paper, and (2) that a



sense quality is not mental in the sense of being a self. But I insist that a sense quality is mental, or ideal, in a genuinely idealistic sense, that is, as aspect or "content" of a self. Thus "yellow" is a certain experience which a self has (or which selves have); just as any relation (whether knowledge, or dependence, or influence) ultimately is a self-in-its-relating,—a self as knowing, depending, or acting. And again I ask Mr. Muscio and the other critics of idealism to make any other unchallengeable assertions about sense-qualities.

I realize that the "unchallengeableness" of these statements will not give pause to those neo-realists who regard the indisputableness of an assertion as a possibly insignificant character of it.<sup>3</sup> This indifference to a self-evident truth is perhaps to be explained by the fact that the neo-realists, adhering as they do to the philosophy of "primordial common sense" (excepting only in their highly uncommon explanations of illusion), enter on the business of philosophy with a very respectable stock in trade of unchallenged (*not* of unchallengeable!) assumptions. But thinkers who have divested themselves of this hereditary capital and who have to make their way in the world of speculation without such helpful presuppositions as the "knower"<sup>4</sup> and the "known world," with its "evident composition,"<sup>4</sup> can not afford to throw away even insignificant certainties. They hold that however unimportant the unchallengeable in itself, the character of being unchallengeable is of utmost significance in the philosophical search for truth.

Of course, my argument in its present form has led only to a solipsistic type of personal idealism. The first stage of the argument against non-idealism does, in truth, lead to a temporarily solipsistic conclusion. The way out of solipsism, through a recognition of the implication of the passivity and receptiveness of my experience, I have indicated briefly in the article under discussion and more at length elsewhere.<sup>5</sup>

Mr. Muscio concludes his very temperately written article with the rather extravagant observation that "the hypothesis that the objects of knowledge are mental will have to find some definite, relevant, and logical support if it is to be more than a mere forgotten fantasy." The remark is the more surprising in that Mr. Muscio has just admitted that it "is doubtless true that 'realistic' writers have little positive doctrine." He defends the realist, however, as a "clearer away of much rubbish." Waiving the question whether or not the realist has yet, as a fact, cleared away the "rubbish" of

<sup>3</sup> Cf. "The New Realism," 1912, pages 19–20.

<sup>4</sup> *Ibid.*, pages 34–35.

<sup>5</sup> "The Persistent Problems of Philosophy," *passim*. Cf. p. 411.

idealism, I am loath to agree with Mr. Muscio's implication that demolishment is all that may be demanded of philosophical thinkers..

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Treatment of Personality by Locke, Berkeley and Hume: A Study in the Interests of Ethical Theory of an Aspect of the Dialectic of English Empiricisms.* JAY WILLIAM HUDSON. University of Missouri Studies. Philosophy and Education Series. Vol. I., No. 1.

Consideration of fundamental ethical conceptions leads Professor Hudson to look upon them as essentially predicates of personality. Used abstractly such terms lose their significance. Witness the many arguments concerning freedom. The true question at issue, it should always be borne in mind, is that of the free person. This personal reference of ethical conceptions points to the view that the logically validating ground of all such terms is to be found in a finally self-sustaining doctrine of the person. That is to say, ethics presupposes the reality of the ethical person. The true question that the moralist must answer, stated in terms reminiscent of Kant, is, How is the ethical person possible? Owing to the interdependence of all ethical conceptions, Professor Hudson feels justified in looking at the subject from a restricted aspect. What is the nature of a free person? If we go no further than the domain of natural science, no such person can exist; science denies autonomy to persons. But Kant, so we are reminded with interesting conviction, has demonstrated that science itself presupposes the *a priori knower*. Whatever else may be said of an ethical person, he is essentially the *a priori knower*. The prime object of this study is to show that any attempt to establish any other theory of personality ends in self-refutation. The particular attempt considered is English empiricism. To let the author speak for himself:

"To summarize in one sentence, our threefold task is: to present the treatment of personality by Locke, Berkeley and Hume, especially with reference to the place of the *a priori* in that treatment, with the subsidiary aim of showing by a sort of illustrative dialectic, in each case and together, the necessity of the *a priori* for any personality such as they tried to guarantee, and such as is adequate for ethics. Thus our aim is plainly a restricted one. The working out of a total ethics or metaphysics is the least of the intention. The most that can be essayed is to indicate one logical condition which such a total view must observe—the logical condition of rational self-activity, in the sense of *a priori cognition*."

While Locke is interested primarily in the limitation of human knowledge, he has much to say in regard to personality. He is intuitively certain of his own existence, but this certainty is not for him what it was for Descartes, a logical first principle. Though the implication of his treatment may not always uphold it, the essay is pervaded with dualistic



presuppositions from beginning to end; experience seems to uphold the existence of both mind and body. Thought, however, is not a substance; it "inheres" in spiritual substance. The real nature of the soul is not, for Locke, such an important consideration, which leads Professor Hudson to suspect that he did not truly understand the task that he had in hand. Thinking and willing are peculiar to the soul; existence, duration, and motion are shared with matter. Identity of the self is needful to guarantee accountability, but this is not necessarily identity of substance; it is rather a continued consciousness distinct from substance. This has the advantage of taking accountability out of the uncertain field of metaphysics, and after all it is the conscious person that is accountable. Locke's treatment of freedom is viewed as quite inadequate, though there are now and then hints at a true view of the subject. The person is not autonomous, but the will is determined by "uneasiness."

Locke is not always consistent; in his works are "found the hints of many schools." It is an open question what his denial of innate ideas means. Bent upon giving experience its place in his text, he is blinded to the fact that he is stating only a partial truth. He loses sight of the *a priori* in cognition. Such seems to be the explanation of what he did. But even so, an examination of what he wrote will show that he made definite assumptions that committed him to the *a priori* in cognition, had he followed these assumptions out logically. Locke's "active" mind, not always admitted by students of his; the use of such expressions as "operations," "innate faculties," "innate powers"; the resting of all knowledge on "self-evident propositions," and other items, not unknown to those who defend the view that Locke was a mentalist, all go to show that by the denial of innate ideas Locke does not mean just what is often thought, and that he makes place for intellectual necessity in his theory of knowledge. Witness, too, what he has to say of complex ideas and relations, and his assumption of the causal principle. And yet when brought squarely face to face with such questions as the nature of perception, judgment, and consequently of the *a priori* in cognition, regarding them as beyond the ken of man, he uniformly refuses to inquire into their nature. He could not have done so intelligently. So, too, he has no conception of eternalism. Eternity is merely a mode of duration along with hours and days. The *supra-temporal* has no meaning for him. Even God is in time. This follows from his failure to apprehend what it means to be a rational, self-active person, which in turn follows from his inconsistent position upon the question of innate ideas.

Yet Locke had a practical hold upon ethics. He was not blind to the inconsistency between creationism and genuine human freedom. Man must be free if possible under God, "though he saw not the way of it." He believed in the meaning and worth of persons more deeply than the limits of his philosophy will allow. He had faith in a rational universe; practical certainty was sufficient for our limited faculties. This is not surprising when we remember the limits that he set to his own inquiry. His function was to tell us *what* to know, not *why*; this was left to Kant.

Berkeley, the logical heir of Locke, rises above his master's difficulties

with substance by means of well-known arguments, declaring that the *esse* of all things, save mind, is *percipi*. Minds, or spirits, are simple, undivided, active, thinking, and willing beings; they exist in time, but are not imobile as with Locke. The ordered world of experience is not due to these, but to God. For this reason it is but natural that Professor Hudson should find fault with his treatment of freedom. Personal identity is a continuous consciousness, as with Locke, but it is more than this, it is substantial. While Berkeley's achievements as an idealist, in so far as he eliminated matter, had great promise and really marked an advance in the direction of true idealism, on the whole the results fall short of what one has a right to expect. Indeed he is more of an empiricist than Locke. He nowhere faces the question of the *a priori* in cognition. His minds are not constitutive of reality; this being so, he can afford no guarantee for ethical personality. His conception of the person is inadequate. His refuge should have been rational self-activity, implications of which are found throughout his works. He did not understand as did Locke that creationism is inconsistent with ethics. Had he proved his God, it would have been at the expense of his persons. Still we have made progress in Berkeley; idealism has been born in the land of a stranger. The doctrine must be transferred from these empiristic surroundings if it is to survive. The need of this step is made quite evident by another British writer, Hume.

The center and import of the work of Hume is essentially a critique of personality rather than of causality, as has been taught heretofore; this is his great contribution to thought. As substance is neither idea nor impression, the conception is meaningless. That inference of the mind, known as the self, in so far as considered continuous, exists by a trick of the mind, only in our imagination. Morals are merely *mores*. But does not experience presuppose a self? This is adequate excuse for Hume to plead the right to be a skeptic, for he could not see that this constituted a dialectical refutation of empiricism, his greatest service to thought. Berkeley was not qualified to judge where Locke's premises led, except with respect to substance, just as Locke did not know that the real hidden name for limited knowledge was science. Hume made all clear. But while doing this, he could not know that the self-refuting experience was calling out for something more than a mere self; he did not know that the demand was for the *a priori* cognizing self. Light broke upon the world of thought in the immortal Kant. Then it was that Hume's "customary" coherence was supplanted by "intellectual" coherence; *combination* supersedes mere *addition*, and experience comes to have an interpretable meaning.

The results of his study are gratifying to Professor Hudson. The efforts on the part of English writers to vindicate the spirit must never be regarded as futile. Aside from Locke's emphasis upon certitude and Berkeley's discovery of the real as spirits and their ideas, both of which Professor Hudson regards as steps in the right direction, the grand result may be easily summed up. "A self-refuting empiricism" can neither guarantee nor refute the self. "Deeply seen—the whole progress from



Locke to Hume is the progress in empiricism's self-dissolution"—at least so far as the interests of personality is concerned. But this was necessary; only upon such dissolution could Kant build.

The last chapter of Professor Hudson's study is devoted to "suggestions for reconstruction." While he is unwilling in the present study "to attempt such a metaphysical superstructure as would give a complete doctrine of ethical personality upon the logical foundation dialectically revealed to be necessary," he can not "refrain from appending a few remarks announcing the general outlines." His idealism is unique enough to call for an epitome.

"That the person knows *a priori*, and what the person supremely knows purely as such an *a priori* knower—these are to give us the vindication, the only vindication there is, of an ethical world." There is no freedom in the world of efficient causation. The *a priori* knower, however, as the source of necessity in nature, can not be determined by it. The freedom thus guaranteed is not negative, but is the positive, active legislation of the self over its own world. The self is not a process, but the source of processes; uncreated, supra-temporal, eternal, free. Such a person can know and form necessary judgments otherwise impossible. Without such a *a priori* support for knowledge, even a rational world could not be fathomed, and there would be no basis for moral responsibility. The known moral ideal of the rational person must arise out of his rational nature as such. The fact that he knows it means that he knows it as his own creation; its "ought" is autonomous. Such an ideal is within demands; that it is recognizable witnesses to this. The freedom of a rational person precludes monism, whether spiritual or material—self-activity must not be lost in its ground. Thinking is the one self-sustaining thing in the universe and as ultimately real "is a *a priori* in the deepest sense of that term," furnishing the "*conditions not only of all knowing, but of all that can be known.*" I am such a self-active thinking, but only in so far as I recognize other persons; I think identity in terms of difference. The "I" thinks itself in terms of non-*this*-ego, and not in terms of utter non-ego. That I think myself, know myself, only in terms of others is just what I, as an *a priori* knower, know. This judgment is at the basis of all knowledge and is "the basal import of all logical judgment as such." The position here outlined calls for a statement of the relation of the ego to the categories, which really involves a new proof of the categories, but Professor Hudson foregoes such an undertaking at this time. A person may be defined as "*a self-active, self-defining, and so self-differentiating intelligence.*" The genus of self-definition is self-active rationality; the difference is precisely the difference in approximation toward complete rationality, the perfect of which there can be but one. For one to define himself and thus freely be himself "is to recognize others as equally real, and *freely to define a perfect self, an Ideal, as the mandatory goal of all changing experience; this in truth is the creation of a self, which a priori, constitutes and thus controls his own experience.*" Thus values are introduced into the world

and the world becomes a world of progress. The supreme cause becomes the final cause, the "moral ideal." Thus we, in our search for a free person, have come upon the ethical person that demands and guarantees not only freedom, but all ethical conceptions—we have come upon the Ideal Person, a world of obliged persons, a world of values expressed in terms of right and wrong. But this has not given us a multi-verse, but a universe made *one* by final, not by efficient, causation.

Epistemology has led us into the very heart of ethics.

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*An Outline of Individual Study.* DR. E. E. PARTRIDGE. New York: Sturges and Walton. 1910.

Dr. Partridge's work on "Individual Study" is taking a well-deserved place in the hands of teachers of child study. The work opens with an inspirational as well as a scientific discussion of theories underlying the study of individual characters and of the history of the movement which has steadily progressed from child study to a study of the child. In the words of the author the book is "intended to serve a practical and introductory rather than a scientific purpose," to serve rather as "a first guide in the study of individuals." The nature of individuality and the scientific study of it are secondary to the more practical purpose of enabling the student to "observe individuals more intelligently and systematically, and thus be better able to understand and serve them." The material of the book comprises what the author has repeatedly given in normal school classes with the growing conviction that "some such work is the best psychology and pedagogy for these classes." The charge is made that "most so-called general psychology, even the most elementary, fails to affect the practical life of the teacher." The author's experience convinces him that it is "better to lead to psychology from practical questions that arise in actual teaching or observing children than to try to apply psychology in advance to the work of teaching." This is the "case method" which has been found so efficient in the training of physicians and lawyers. Dr. Partridge would apply the same theory in the training of teachers. The only general psychology recommended to precede this study of individuals is genetic psychology with a view to giving the teacher-to-be the proper point of view.

Individuality is identified with the general problem of biological variability. It is recognized, however, that the individual is more than a collection of variables, that he is "a unique whole, in which the parts are balanced in just such a way as to make this particular individual." Two people might appear identical in analysis and very unlike when appreciated as wholes, or two who were similar in general appearance might appear quite dissimilar in the cold analysis of facts. There are mental traits and physical traits and another group which arises from the fact that an individual may be regarded as a series of events, "some of which seem to be mysterious dispensations of providence, or the result of



fortuitous combinations of circumstances." It thus appears that the study of individuality involves problems of variation, of psychology, of ethics, of sociology, and of other hereditary and environmental influences. It is to supply this need for a "better knowledge of individuals and better methods of studying them" that this book is written. Part I. is devoted to a consideration of the sciences on which individuality is based and the "attitude of mind one must take in considering how and why people differ from each other."

Part II. gives practical directions for the study of individuals. The best types for practise study of individuality in children are found between the ages of eight and twelve, and fifty children, occupied in somewhat similar school work, is a sufficiently large group to begin with. To be sure, it is pointed out that much larger numbers must be considered before generalized conclusions can be drawn, and that the "practical limitations of the school" will preclude definite standards, but still under these conditions an application of the simple mathematical methods of Boaz, Pearson, and Spearman may make results illuminating.

Specific directions and recommendations are given for determining individual differences in health, in body-characteristics, in movements (both observational and experimental), in such mental traits as emotional life, instincts, interest, senses and perception, memory association, as well as in "free activity of the mind," and in purposive thinking. This constitutes the most important part of the book. It presents the best tests known in the literature with additions and comments by the author. Recommendations are concrete and in many cases simplified to suit the beginner. The effort is to give too much rather than too little detail. In many cases tables of averages are copied from other works so that the book serves as a ready handbook and the student without an efficient library will be less handicapped than usual.

Part III. of the book opens with a detailed account of the individual differences noticed by the author in two twin boys in a community containing only the simplest primitive elements of social life. The children had never been separated a day in their lives, so they had the same environment, in the gross aspects at least, as well as similar heredities. The boys were so-called identical twins. Neighbors who had known them all their lives could not distinguish them. A teacher experienced difficulty after a year's association, and even the mother was sometimes confused. Despite these similar characters it is remarkable how the system of tests which Dr. Partridge gives in Part II. of this book revealed characteristic differences which had been unsuspected by any one before, but which were clearly evident when they were pointed out. It even appeared that the faults were opposite, calling for very different treatment in correcting them. In the same way the learning processes showed marked differences, necessitating clear distinctions in their training. These more subtle differences in the mental type were concealed below physical masks whose differences consisted mainly of a different

distribution of freckles on the nose and three eighths of an inch difference in height.

The book closes with a classification of individuals into types of normal, precocious, stupid, and morally deficient. Individual characters, both physiological and psychological, also combine to form certain mixed types, showing that the problem of determining types is an extremely complex one necessitating the detailed schematization elaborated in the main body of the book.

The Reviewer's reaction to the book is that it is eminently worth while, particularly when the course of study is somewhat limited. Where the study of the individual is outlined, the text constitutes the entire course in child study. Where psychology and child study are given as prerequisites to higher study it would seem that something less liable to become superficial would be a safer requirement. In the hands of the teacher-in-service the book is invaluable. The reviewer clearly recalls his own desire to carry on systematic child study when in public school work and his inability to find specific directions for definitizing the work. Such a book as Dr. Partridge's would have filled a need keenly felt at that time. The use of the book as a text in normal-school classes would have the effect of placing it as a handbook for teachers in service, thus encouraging that systematic study of child nature which would make for growth of the young teacher and tend to neutralize some of the retardation factors inherent in the profession.

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*The Classical Psychologists.* Compiled by BENJAMIN RAND. Boston: The Houghton Mifflin Company. 1912. Pp. xii + 726.

This is a companion volume in the field of psychology to Rand's compilations of "The Classical Moralists" and the "Modern Classical Philosophers," and consists of a series of "original texts containing fundamental theories of the classical psychologists" from Anaxagoras to Wundt. Forty-three men are represented: fourteen of the selections are very brief (less than ten pages in length), and only three—Aristotle, James, and Wundt—receive as much as forty pages apiece. Several selections are here translated into English for the first time, namely, those from Beneke, Drobisch, Maine de Biran, Fechner, Hering, Stumpf, Lange, and the shorter selections from Gregory of Nyssa, Wolff, Bonnet, Weber, and Helmholtz.

"The study of psychology as pursued to-day in several important divisions might suggest the desirability of a work of recent material from these various domains. An historical volume of the character of this book was, however, deemed not only more in harmony with the other works of the author's series, but also as much more necessary for the use of students before entering upon investigations in special fields." "Such a work, it is hoped, may prove adapted for colleges and universities as a text-book of reading accompanying courses of lectures in general psychology" (p. v).



The choice of the texts has evidently been made with competent care and is probably as successful as could be expected in such a difficult work of selective compilation. The limits of the volume have, of course, made the omission of some important authors inevitable; but, to notice one among the moderns, it will seem strange to many that a work which includes the selection from Stumpf should contain nothing whatever from Freud.

It seems improbable that this volume will find a place as a college textbook, not because of any failure to select its contents judiciously, but because college courses can hardly afford to give so much time to the historical side of psychology. This book needs ample supplementary material from lectures; it does not seem adapted to be read in connection with a course of lectures in general psychology; and a course devoted wholly to the history of psychology is impracticable in most colleges, however necessary for the postgraduate student.

A good many people, who find no resting-place in their own thinking on philosophical questions, do find a deep interest and satisfaction in the definite history of philosophy. Similarly a good many have, for instance, some acquaintance with a structural psychology that does its business with fictitious "elements"; with a functional psychology that can not establish any efficacy of the mental upon the physical; with a general animal psychology that can not even assign any sure criterion for the presence of consciousness; and they do not observe that professional psychologists are remarkably efficient masters of their own minds or of other men's. If these students still can not escape the fascination of the evident problems that psychologists, since the time of the Greeks, have attempted to solve, such a book as Rand's will be welcome to them. But it seems that the limited time of the college student had better be given to present methods and current problems. Rand's book will be valuable in colleges for reference, but hardly as a text.

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## JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. July, 1912. *Further Experiments on the Inhibition of Sensation* (pp. 345-369): EDMUND JACOBSON. — Odor sensations are not lessened by a simultaneous sound stimulation either in the ordinary attentive or relaxed attitudes. By strong concentration on the sound the odor sensation suffered some inhibition. This increased attention consists of representative and other processes associated with it and are called "adducient processes." *Why Kant is Passing* (pp. 370-426): G. STANLEY HALL. — Kantianism is an antiquated system of philosophy that hinders the work of the world to-day. Kant made some contributions in his time, but is cumbersome and practically useless in modern thought, because scientific facts are more able to maintain themselves. *Prolegomena to a Study of Introspection* (pp. 427-448):

E. B. TITCHENER.—Introspection is an important means in acquiring psychological knowledge. In the laboratory it must be distinguished from "moralizing common sense" and rationalizing philosophy. Introspection is a scientific part of descriptive psychology. *Description of a Rotary Campimeter* (pp. 448-453): C. E. FERREE. *A Remark on the Legibility of Printed Types* (pp. 454-456): F. M. URBAN.—Some suggestions for making mathematical tables more legible. *A List of the Writings of James Ward* (pp. 457-460): E. B. TITCHENER and W. S. FOSTER. *The Discrimination of Articulate Sounds by Cats* (pp. 461-463): W. T. SHEPHERD.—Cats are able to discriminate articulate sounds. *Book Reviews* (pp. 464-478). G. C. Ferrari, *Le emozioni e la vita del subcosciente*: THEODATE L. SMITH. Emily S. Hamblen, *Friedrich Nietzsche and His New Gospel*: R. R. GURLEY. W. Hellpach, *Die geopsychischen: Wetter, Klima und Landschaft in ihrem Einfluss auf das Seelenleben*. H. H. Horne, *Free Will and Human Responsibility*: G. CAMPBELL. Dr. James Devon, *The Criminal and the Community*: MIRIAM VAN WATERS. Edward Westermarck, *The Origin and Development of the Moral Ideas*. E. Claparède, *La psychologie animale de Charles Bonnet*. S. C. Earle, *The Theory and Practise of Technical Writing*: E. B. T. Rudolph Eucken, *Life's Basis and Life's Ideal: the Fundamentals of a New Philosophy of Life*. R. B. Perry, *Present Philosophical Tendencies*. J. Royce, *William James and Other Essays on the Philosophy of Life*. G. Santayana, *Three Philosophical Poets: Lucretius, Dante, and Goethe*. W. D. Scott, *Increasing Human Efficiency in Business*. H. W. Dresser, *Human Efficiency: A Psychological Study of Modern Problems*. E. N. Henderson, *A Text-book in the Principals of Education*. J. A. MacVannel, *Outline of a Course in the Philosophy of Education*. N. Kostyleff, *La crise de la psychologie expérimentale: le present et l'avenir*: E. B. T. *Book Notes* (pp. 479-484). Yves Delage and Marie Goldsmith, *The Theories of Evolution*. A. T. Shearman, *The Scope of Formal Logic*. P. G. Buekers, *Die Abstammungslehre: eine gemeinverständliche Darstellung und kritische Übersicht der verschiedenen Theorien mit besonderer Berücksichtigung der Mutationstheorie*. Narziss Ach, *Über den Willensakt und das Temperament*. August Messer, *Empfindung und Denken*. W. Hellpach, *Die Grenzwissenschaften der Psychologie*. Shepherd Ivory Franz, *Handbook of Mental Examination Methods*. August Gallinger, *Das Problem der objectiven Möglichkeit: eine Bedeutungsanalyse*. Henry J. Watt, *The Economy and Training of Memory*. Hermann Cohen, *Logik der reinen Erkenntnis*. Vernon Lee and Anstruther-Thomson, *Beauty, Ugliness, and Other Studies in Psychological Esthetics*. W. Wirth, *Psychophysik*. J. A. Angell, *Chapters from Modern Psychology*. Adolph Busse, *Aristoteles über die Seele*. Abbe Jean Delacroix, *Ascétiques et mystiques*. F. L. Wells, *Fatigue*. J. Mourly Vold, *Ueber den Traum: experimental-psychologische Untersuchungen*. W. Ament, *Die Seele des Kindes*. Arthur Kronfeld, *Ueber die psychologischen Theorien Freuds und verwandte Anschauungen, Systematik und kritische Erörterung*. Ray Madding McConnell, *Criminal Responsibility and Social Constraint*. Archibald



Church and Frederick Peterson, *Nervous and Mental Diseases*. Jean Dawson, *The Biology of Physa*. William Patten, *The Evolution of Vertebrates and their Kin*. W. L. H. Duckworth, *Prehistoric Man*. Charles Arthur Mercier, *A New Logic*. Alexandre Movran, *Syphilomanie et syphilophobie*. M. Guechot, *La formation directe du raisonnement chez l'enfant*. Emile Lauviere, *Edgar Poe*. Thomas Mainhardt, *Die nervösen Augstefühle*. Jean Farrand, *Les localisations cérébrales: esquisse médicale et psychologique*.

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## NOTES AND NEWS

### THE AMERICAN PHILOSOPHICAL ASSOCIATION

THE Twelfth Annual Meeting of the American Philosophical Association will be held at Columbia University on December 26, 27, and 28, under the presidency of Professor Frank Thilly. Members are requested to send to the secretary, E. G. Spaulding, Princeton, N. J., before December 1, titles of papers which they wish to read at this meeting. Further details regarding the meeting will be sent to members of the association in a circular letter.

The Committee on Discussion reports the following topic for the general discussion: Agreement in Philosophy: *Is a continuous progress towards unanimity among philosophers on the more fundamental philosophical issues*

- (a) Desirable?
- (b) Attainable?

#### I. If not attainable:

1. What are the impediments to agreement in philosophy?
2. Should it be deemed the essential function of philosophy to serve as a means for expressing the reactions upon reality of different types of temperament?
3. What is the purpose of philosophical argumentation and discussion?

4. What, from this point of view, is the place and value of the study of the history of philosophy?

II. If agreement is attainable:

1. Upon what significant issue has it already been attained?
2. How is the failure to reach a greater measure of agreement in the past to be explained?
3. Is the study of the history of philosophy indispensable as a means towards the attainment of agreement?
4. What methods for the systematization of philosophical inquiry, or for organized cooperation in philosophizing, would help towards this end?
5. Are discussions of specific problems, with preliminary analyses and definitions, after the general manner of last year's discussion in this association, serviceable towards this end?

ARTHUR O. LOVEJOY.

DICKINSON S. MILLER.

WILLIAM P. MONTAGUE.

EDWARD G. SPAULDING.

FRANK THILLY.

FREDERICK J. E. WOODBRIDGE.

The committee publishes the report in order that other members of the association than the leaders of the discussion may have the opportunity to prepare their contributions to the general discussion of the question stated.

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THE Decms lectures at the New York University will be given this year by Professor Rudolph Eucken, of the University of Jena, visiting professor at Harvard University. The lectures, which are six in number, will probably be given in February or March, the general subject being "The Fundamental Principles of Ethics with special Consideration of the Religious Problems.

THE proof of Professor H. M. Kallen's review of Royce's "William James and other Essays in the Philosophy of Life," which appeared in the JOURNAL for September 26, was unfortunately sent to press before the author was able to correct it.

CARL P. BOCK has been made assistant in experimental psychology at the University of Missouri to fill the vacancy created by the resignation of A. P. Weiss, who has accepted an instructorship in Ohio State University.

AN International Congress of Comparative Pathology has been organized by the Société de Pathologie Comparée, to be held in Paris this month. The subject for discussion will range over the entire field of pathology.

PROFESSOR GEORGE H. PALMER, Alford professor of natural religion, moral philosophy and civil polity, will be the Harvard exchange professor with the four western colleges, Knox, Grinnell, Colorado, and Beloit.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE KINDS OF POETRY

THE many attempts in the last quarter-century to describe or define literary *genres* have assumed in poetry some such evolution as can be demonstrated in geology or anatomy. Literary scholarship has chiefly taught itself to see in the drama a development from the religious rites of Greece or of the Middle Age, to hear in the lyric thin echoes of Lesbos or Provence, and to suspect behind these beginnings, as behind the Homeric epic, lost tracts of primitive poetry that reach to the earliest mutterings of the race. To this understanding of poetry and its career the anthropologists, beyond their intention, have been most friendly; their gatherings of folk-song from races or tribes all but incoherent, furnish oblique evidence for the scholar's guess after forgotten poetic origins, much as the surviving monkey witnesses to kindred aspects in our parentage. The study of the beginnings of poetry is now usually supposed to call for the same kind of deduction and induction from fossils and belated survivals as the study of the origin of the horse. Is it too presumptuous to suggest that in this whole drift of literary research there is confusion of ideas?

In the first place, you can not follow the track of anything that changes until you have some minimum of definition or standard or guide to assure you that from change to change you are still following one thing, and not discovering something new. If this generalization is sweeping, at least it can hardly be disputed by the historians of literary *genres*, who have all in some measure assumed and acted upon it. But so far as literature is concerned it does not seem too sweeping. Before you can inquire into the lowliest phases of life you must assume, as a scientist, what every man instinctively feels, that life under all its appearances is one thing. To uncover the history of any kind of poetry, you must carry along with you an image, a definition, of what you would identify. Yet the lyric, the drama, the epic, are still after much discussion undefined, and students of literature are become so reconciled to the unscientific slip-

periness of their terminology that they expect no one to mean any specific thing by "lyric" or "drama"; they merely try to discover, in each use of each term, the user's idiosyncrasy, the unconscious mark of himself or his breeding. Or, if they feel the need of taming this chaos, they put their hope in those histories of *genres*, already mentioned, which are supposed to describe if not define. Yet until there is first a definition of what is eternally lyrical, eternally dramatic, how can they know the evolution of lyric or drama?

Such a definition—in the second place—is indispensable not merely to any logical inquiry into evolution, but much more to any fair statement of what men in general think poetry is. In our ordinary thought we conceive of poetry just as we conceive of life itself, as subject to no development whatever. Things either have existed or they have not; the utterances of the race, similarly, have been either poetry or not poetry. It is no contradiction of this view that what to one age seems poetic is often unpoetic to the next; for in every such case it is not the poetry, but the language, the medium of it, which time has rendered obsolete. Nor does materialistic science present any obstacle to this instinctive selection of the eternal and universal in life and poetry. Indeed, the more materialistic our explanation of life and the more anatomical our account of poetry, the less importance will the evolution of either have in comparison with its permanent aspects. If consciousness is but a fortunate conjunction and behavior of atoms, how wonderful that the myriad different combinations of atoms should have a consciousness in common and should understand each other. If poetry is but an accident of syllables, a fortunate stirring of connotations, emotional and mental, how extraordinary that we should agree that some connotations are poetic and others not! To be sure, life and poetry do appear in degrees and variations; but to say quantitatively that a man is barely alive or that a piece is almost poetry does not in the least affect the qualitative distinction we all make between living and dead, poetic and unpoetic.

Yet, though the evolutionary historian has not shared this view of poetry as an unchanging function of an unchanging life, it will not do to say, even to imply, that he has contributed nothing to our knowledge. He has only failed to add to our knowledge of poetry. He has made clearer some aspect of the form, the meter, the imagery—what in a large sense we may call the language—of poetry; and in this field his method is practicable, since language does undergo evolution, and its relation to poetry is only secondary though indispensable, like the relation of the body to life. To take a ready illustration, the accounts of the development of the drama are for the most part studies of the expression of drama—studies of language,



in the large sense—of the number of actors, the shape of the stage, the conditions of presentation; or, more subtly, studies of theme, of reversals of fortune and combat with fate. In every such case the preliminary definition which determined the evolution was based not on the drama, but on the expression of it, or on its subject-matter. Drama is that which can be acted, postulates one historian, and then goes trailing the drama with this lantern, though perhaps he would not agree that everything actable is dramatic. Tragedy, begins the more subtle scholar, taking his cue from Aristotle, is that kind of drama which deals with a tragic incident, a destructive or painful action, such as death or agony or wounds. Yet the Tale of Troy furnishes as apt subject-matter for the lyric or the epic as for the drama, of which the scholar told us tragedy is a kind. And even if he hedges himself round with all these postulates at once, and says that tragedy deals with such and such subject-matter and must be actable, we still can see how the Tale of Troy might be staged and yet turn out to be a lyric after all. The scholar has simply failed to put something in his definition that would make certain the dramatic quality of his tragedy. Illustrations from other kinds of poetry are as easily cited. He who traces a literary *genre* like the elegy, let us say, and determines what is an elegy by some metrical characteristic, is really chronicling the use of that meter—just as the scientist who would write the history of man by showing the evolution of his anatomy, really traces only the history of his anatomy. That language, the whole dress of poetry, is as necessary to it as the body is to the phenomenon of life, justifies any amount of study upon it, but it should not be confused with the study of poetry.

Even if poetry were subject to evolution, it would be wise to study it in its latest development. The significance of life is not in the lowest cell, but in the soul of the most spiritual man; and if we are interested in defining the oak, why turn our back upon it, to draw conclusions from an acorn? But it is time to distinguish between language, which has an evolutionary career, and poetry, which has not. The English tongue has evolved since Shakespeare's day, but poetry is just what it was. Kill off every horse in the world, and you destroy the species. Kill off every known and suspected poet, and there will be as many as ever after a generation or two. If the language were destroyed, ages would be needed to evolve another; but poetry, being a constant function of life, is rooted as it were perpendicularly in every moment of consciousness, and not horizontally, trailing back long feelers into mist-hidden swamps of primitiveness.

It is the aim of this paper to see what progress can be made toward defining poetic *genres* by throwing overboard all idea of

evolution and considering poetry as an invariable function of life. In one sense, all poetry is of one kind, and is easily described. Ordinarily the emotions aroused by experience are used up in the further process of living. The poet differs from his fellows only in the greater power of his emotions, in the greater imperativeness of his intuitions, whereby it is easier for him to express them in words than to consume them in life. The stimulus that enters the poet's nature and comes out as epical or dramatic or lyrical expression, enters equally the nature of ordinary man and is consumed in lyrical or epic or dramatic living. However theoretical or dogmatic this parallel may seem, in practise it is recognized by all men. A poet's temperament prescribes into which of the three *genres* his work shall fall; and similarly the temperament of average men prescribes whether they shall live in the present, or in the past, or in the future. In these three eternal ways of meeting experience, it is believed, are to be found the definitions of the lyric, the drama, and the epic. The qualities to which we give the names "lyrical," "dramatic," "epic," are no less normal and fundamental than these three apprehensions of life—as simply a present moment, or as a present moment in which the past is reaped, or as a present moment in which the future is promised.

We are accustomed to say that the lyric expresses emotion, with or without an admixture of intellectual content; the emotion is the essential. Emotion, however, is the nearest intimation we have of the present moment. A man may act, and not realize that he has done so until afterwards, but he can not have an emotion until he feels it. Yet vivid as is the response to immediate experience in the lyric, it is also as transitory as time itself—the lyrical is the most evanescent attitude toward life; and as all feeling tends to subside after the exciting cause is removed, so the lyric is the representation of a changed and dying feeling. Because the emotion is involuntary, its career in the poet's spirit will be to a degree a revelation of his character, and in that revelation some glimpse of his past and future will be involved; but the emphasis will remain upon the sense of the present, and from this flow the lyrical qualities—the immediate emotion and its subsiding.

This transitory nature of feeling has troubled both poets and critics, as the passing of time troubles every meditative spirit, who would make eternal the high moments of life. In the lyric to fix the most fleeting emotion has seemed imperative, but how? Many a poet has been disposed to let the emotion subside into a broad generalized frame of mind—into a reflection or a prophecy—and so rescue a permanent lesson from the sinking mood. But whether this disposition tactfully insinuates itself, as in Wordsworth, or bluntly



obtrudes, as in Longfellow, the suspicion grows upon the reader that it is a defect of art; the poet's reflection, or whatever else he gets from his emotion, is likely to be personal and peculiar—more and more so as time separates him from his audience, for ages differ in their conventional thoughts more than in their feelings.

Recognizing this difficulty, criticism has never agreed with the poets that the eternity of the lyric should be provided for in the end of it, in the more intellectual part; rather, theorists of literature have formulated a platitude that the lyric is great by virtue of elemental, universal emotion. This would seem to be, however, a reading of history into a prudent recipe for fame. Unless it is an affectation, the lyric renders an emotion truly felt, and this sincerity of intuition appears to be all that the poet can be expected to care about. So far as his fame is concerned, the greatness of his poem will depend upon the number of men who share his emotion. That he ought not to take thought overmuch, nor choose between emotions even if he could, seems proved by the very large number of lyrists who have come to their own through the belated sympathy of a new age, to which they would never have appealed had they consulted contemporary preferences in their emotions. And even if the lyric poet has missed fame by the singularity of his reactions to experience, his work is still recognized as lyrical if it have the attitude that responds to life always as a rapturous present moment.

In its unconscious revelation of character, every lyric suggests a momentum of previous conduct, choices made, habits formed; and to the extent of this implication of the past, a lyric is a kind of drama. The difference between them is only a shifting of emphasis. Every drama is in a high sense lyrical, for it must be imagined as happening in the present; and every character in it, supposed to be living in the present, is a lyrical character. But the emphasis of the whole is upon the past. That the drama is the exhibition of human will is true only so far as it exhibits a harvested past, character returning upon itself in the guise of fate; for if a person in a play should will something inconsistent with his known past, or if some trick of fortune should release him from his past, the play would not satisfy the dramatic sense. That situation is dramatic which brings men suddenly to account, and he who has the eye for drama sees in life a perpetual judgment day. It is not a matter of analysis, nor of training, but of temperament, and therefore the young Shakespeare, when he writes a sonnet-sequence, manages to write a drama, and later, when the structure of his plays seems premeditated or elaborated, the complexity can be accounted for by the dramatic sense through which he apprehends life. There are

two plots in the "Merchant of Venice"; how clever Shakespeare was, say the commentators, to join both in one play. But given the character of Antonio, the merchant, and Shakespeare would have been forced to invent the equivalents of those two plots, if he had not laid hands on them. For Antonio is a moody creature, extravagant in his generosity, careless and reckless in his prejudices. He is a contradiction of himself, and his life, viewed dramatically, must show the simultaneous reaping of his good and bad acts. His insulting bravado with Shylock gets him into danger, but his loan to Bassanio, the generosity bound up with the insult and the bravado, brings Portia to his aid; and when the two streams of fate balance, he becomes again what he was before—moody and contradictory.

To say that Shakespeare constructed this consistency is to forget that without such consistency one can not conceive of life as the accomplishment of the past. The secret of this harmony of form is not in Shakespeare's craft, but in his intuition. Nor need we attribute to the Greek dramatist any particular theory of heredity, if in the *Œdipus* story the past that is reaped extends over two generations. His parents grasped at opportunity at all costs, and *Œdipus* inherits their impulsiveness, their inability to consider. To be sure he is indifferent to the identity of the old man he killed on the highway, and he risks his life to share the throne of a queen whom he does not know and has never seen. But only his father would so forget his royalty as to quarrel on the highway with a young vagabond, and only his mother would promise herself indifferently to whoever should answer the Sphinx. It is the same character in all three, and the fault is alike ruinous to all.

The fact that all three characters submit, as it were, to the same judgment day and are punished for the same fault, suggests the observation in passing, that the dramatic point of view tends to unify life at any given moment by discovering in it a homogeneous past. Just as the student of anatomy sees the passers-by as skeletons, and as the journalist who investigates graft comes to attribute every defect of government to peevishness, so the dramatist, studying the past as reaped by one person in his play, is likely to attribute a similar past to other characters. This duplication of theme is so familiar as hardly to need illustration. "Twelfth Night," a love story, shows all its characters except the clown to be in some stage of love; "Measure for Measure," similarly, exhibits the degrees of the fear of death in various natures; and "King Lear" studies life as a problem of filial relations. The significant thing is that this economy of situation and theme is not a matter of choice or craft with the dramatist, any more than the observation of men as skeletons is economy of point of view with the anatomist; it lies rather



in the method or means of perception—in the dissective eye, and in the dramatic sense.

The immediate effect, however, of any play read or seen, is less logical, less rigidly consistent, because of the lyrical element—the emphasis of the present moment in all the characters. If the story is to be of value as proving the past, the persons must all speak and act conscious only of the present, without suspicion that they are terms in a demonstration. That is, they must act and speak lyrically. Each present moment, as it passes through the reader's or the spectator's mind, will be interesting in proportion to its emotional intensity, which is furnished partly by the lines, partly by the acting, partly by the situation. These all are lyrical elements. Situation has nothing to do with the dramatic sense, except as it affords character an opportunity to display itself; it looks to the present, and sometimes to the future, but never to the past. How unconscious of the past the acting must be, has just been suggested. The lines may be very lyrical, as in "*Romeo and Juliet*," without much glancing at the dramatic drift, or they may be capable of a double meaning, lyrical to the speaker and dramatic to his hearers, as in "*Macbeth*."

The kind of character or emotion revealed in the lyric, we saw, has been thought to have a bearing upon its probable fame. It is obvious, however, that drama may be judged either by the kind of emotion, the kind of character exhibited—from the standpoint of the actor—or by the extent to which the reaping of the past is felt. It is a common enough phenomenon of stage history that the popular favor often leans to the lyrical side, and many a play dramatically bad succeeds because it contains some character lyrically good. But if the play gives a strong enough sense of the past, that is, if the characters are consistent with their own history, they may be lyrically what they please; they must in any case appeal less upon the virtue of their emotions than upon the justice of their fate. An audience will permit the lyric to express only such emotions as they at the moment understand, but in the drama they will accept the emotion tentatively until they see what is to become of it. Satan cursing God in a lyric will not please the pious, who yet would be delighted to see him in a drama cursing God and getting punished for it.

The drama has one other lyrical effect, in the general emotional tone it conveys. This tone is serious in proportion as the work is felt to be a reaping of the past; every judgment day is serious, even if we are acquitted. Therefore there is no clear line to be drawn between tragedy and comedy, for different men and different ages will disagree as to what is serious; nor is there any essential differ-

ence between tragedy and comedy, since a mere change of opinion as to what is serious so easily converts one into the other. The occasion of laughter or merriment in the play is from the lyrical part—from the speech or the situation or the acting—and we enjoy it for the passing moment; but every comedy which is really dramatic becomes serious with time, as men more highly value the sacredness of human nature. Beatrice and Benedick amuse us while they are joking or while others trick them, and Petruchio's behavior at his wedding is funny while we hear of it, but in so far as we care about those characters, such episodes grieve our sense of the dignity of life. The difference, then, that at first sight appears between comedy and tragedy depends upon nothing but whether we care so little for the characters that laughter is adequate armor against the judgments they unconsciously pronounce upon themselves, or whether we require a nobler kind of fortitude.

The lyric is closer to the drama than to the epic, and there are fewer epics than either lyrics or dramas. The reason is probably that a sense of the future—the ability to see life as a prospect of destiny—is far rarer than a sense of the past, to say nothing of the immediate sense of the present, and it seems to have always something of the miraculous in it. If each moment can be seen as a harvest of previous moments, there is every logical reason why the interest of the present should be the future it promises; but only men of unusual faith have risen to this logic, and even they felt the promise of destiny more as a gift from a superior being than as a consequence of the present. Indeed, where the promise reveals itself to a nature of great optimism, it often takes the form of strong contrast with things as they are, and the lyrical and the epical moods in the poem are almost miraculously contradictory. Æneas is humanly weak, his expedition but a frail band to make certain the destiny of Rome; the poet intends us to set the lyrical mood of the hero—regret, reluctance, even terror—over against the majesty of the imperial doom he served. It is a contrast, not a consequence; or if a consequence, then too much a thing of wonder for the logic of normal man.

A more superficial reason has usually been given for the small number of epics in literature, especially for the total disappearance of the *genre* in modern times. It is said that every epic must have a plot in heaven, working itself out in human fortunes on earth, because the epic exhibits divine will, as the drama exhibits the will of man; and since we no longer have a well-peopled anthropomorphic heaven, we can no longer show the gods plotting there. But to say that the epic exhibits divine will is only to say that it gives the sense of destiny, the feeling of guidance to an end. Why can not men



express such a feeling without a scene on Olympus? The gods and goddesses of the old epics were but part of the language with which the epic feeling was expressed; they are no more essential to the rendering of that sense than the kings and queens of the old plays are essential to the drama. If only we had an epic to express, we could make the language for it. But, say the historians, the epic has always dealt with a world crisis, involving a higher and a lower civilization; how can we have this large kind of poetry again until we have another great crisis? If the historian be American, he often concludes by wondering why the Civil War, so easily comparable to that of Troy, never found its Homer. Yet these explanations, and the description of the epic implied in them, are not sufficiently searching. The world crisis which is clear enough now in the *Æneid* was probably not clear until Vergil made it so, and whether he believed in the mythology and the heaven he wrote of, made no difference poetically to him, and makes none to us. The essence of the epic is that attitude toward life which sees in the moment a destined future. Without this attitude, no epic is possible.

If literature is now barren of this kind of poetry, may it not be because this age, in spite of much theorizing, has no confidence as to what its destiny may be? It is not that we have lost the gods. If we no longer have Milton's celestial personages and geography, we have the idea of evolution, which ought to give the strongest possible conviction of our future. But evolution, whether in the hands of the literary historian or in those of the scientist, has been exclusively occupied in clarifying and reinforcing our sense of the past; it has not even suggested whither we are bound. No wonder that its chief service has been to the drama, which with a new, scientific confidence now shows us the inevitability of one moment upon the next, the sins of the fathers visited mathematically upon the children; no wonder that with this rejuvenated day of judgment perpetually before us, our drama is dark and tragic, and deals, however wholesomely, with our worse selves. The beast we were, constantly returns to bear witness against the man we think we are.

Exactly what sort of epic we shall have when science becomes once more prospective and hopeful it is hardly worth while to guess, but the permanent traits of the *genre* are fairly clear. Just as the lyric enters into the drama, so the drama enters into epic; for a sense of destiny involves some guidance out of the past and the present, the direction of to-morrow being found as it were by the two points of to-day and yesterday. To the ancient mind all this meant simply the will of the gods, within such limits as the gods were free; therefore a drama was enacted in heaven reaping the past of the divinities, and that harvest became on earth man's fate.

To state it another way, man would be most devout, most ready to attribute his future to the past of the gods, at those moments of history when he felt himself in a world-current of destiny. Tasso and Milton felt such prophetic influences, though they substituted the Christian heaven and divinities for the pagan. And however the future poet creates new imagery or modifies the old, he will keep unchanged the soul of the epic—the prospect of the race; and in this prospect will remain, if only in a diffused state, a dramatic consciousness of the past from which it grew.

The lyric also enters into the epic, not only as it is included in the heavenly drama, but throughout the poem—most obviously in the character of the hero, upon whom the will of the gods falls. Here again the poem may be judged by the lyric impression—by the behavior of the hero. Such a standard, however, leaves us disappointed with most epics. For it is to the poet's advantage to minimize the strength of the hero and magnify his obedience, in order that the power of destiny on him may seem irresistible; otherwise the poet may find he has written not epic but drama. It is best rather to judge a poem by the quality that distinguishes its *genre*. The test of the epic attitude is in the consistency of its sense of an inexorable future—which is quite apart from its lyrical excellences.

Finally, the epic, like the drama, has a total lyric aspect, as naturally hopeful as the sense of the past is naturally serious. No matter how somber the incidents or the situation, they are in the epic but opportunities for the display of destiny; every moment promises a new beginning. For an epic to be pessimistic is a paradox, and indicates a confusion in the poet's view of life.

If these definitions of the kinds of poetry are just, they would seem to open for the student of literature, if he so desires, a new field besides that of language in which to apply the principle of evolution. The changes that can be traced in literary history are changes not of poetry nor of its kinds, but of the spiritual ideals, the social conventions and proprieties, the political conditions, which at any given time are as it were the raw material of literature; and in this material some principle of evolution may perhaps be found. For example, the history of English drama, if drama is the sense of the past called to judgment, should study the changes in the English conception of what is a test of character. The Elizabethan stage dealt with situations of great adventure—with murders, shipwrecks, plots, and surprises; whereas the modern play usually prefers a test of character taken from an ordered, quiet life. Evidently there has been a change in the English ideal of success and failure. It will not do to assume that the nature of drama has changed, nor even that the process of time has made the modern play more dramatic;



"Lear" and "Macbeth" and "Othello" hold their own by any definitions. But it is illuminating to remember that the successful man, in the Renaissance ideal, was one who could cope with every public or private emergency. It was not enough that he should be morally good—a beggar might be that; but he—and the women as well—must have the varied efficiency of gentlefolk born to a career. Viola, Portia, Orlando meet emergencies with success; Hamlet and Othello do not. The modern playwright, however, would be most unlikely to represent any of these excellent persons as tragic victims, because the modern ideal of success is a matter of living, as it were on the defensive, not by rising to extraordinary accomplishment, but by avoiding such errors as later may embarrass us; our typical tragedy shows some weakness overtaking us in the very routine of our existence. Between this idea of failure and the Elizabethan, there is a change that can not be understood without the historian's help; and there are similar changes, calling for similar help, in the crude material that has gone into lyrics and epics. If the study of these changes is not specifically the study of poetry, at least it is the study of man's way of accounting for himself to himself—not an ignoble study; and its effect would be to show the kinship of poetry with life, by illuminating man's eternal effort to restate life so that it will satisfy him, and the eternal moods through which the eternal effort is made.

JOHN ERSKINE.

COLUMBIA UNIVERSITY.

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## DISCUSSION

### "PRESENT PHILOSOPHICAL TENDENCIES"<sup>1</sup>

#### I. THE CRITIQUE OF NATURALISM

IT is not primarily a philosophical *History of Our Own Times* that Professor Perry has undertaken to present, in this substantial volume;<sup>2</sup> and it is not chiefly as an interpretation of contemporary tendencies that I shall here discuss it. It is, as he himself observes in his preface, more as critic than as historian, that he has written; and it is, in fact, most of all as constructive philosopher. He has

<sup>1</sup> Owing to the length and thoroughness of this review it has been published as a discussion. Professor Lovejoy is in no wise responsible for the classification.

<sup>2</sup> "Present Philosophical Tendencies: A Critical Survey of Naturalism, Idealism, Pragmatism, and Realism, together with a Synopsis of the Philosophy of William James," by Ralph Barton Perry. Longmans, Green, & Co. 1912. Pp. xv + 383.

accordingly disclaimed the responsibilities of the exegete of other men's teachings, deeming it "to be more important to discover whether certain current views were true or false than to discuss with painstaking nicety the question of their attribution." And his interest in current views is largely that of a writer desirous of expounding his own doctrine more clearly and justifying it more completely by means of a reasoned presentation of its relations of partial sympathy and partial antagonism to certain other typical doctrines concerning the special problems which appeal to him. The scope and arrangement of the book are clearly determined by this constructive purpose. The four principal tendencies with which it deals—naturalism, idealism, pragmatism, realism—all have definite logical relations to Perry's own position with respect to three specific issues: (1) to *Weltanschauungslehre* or, in a broad sense of the word, the philosophy of religion; (2) to the epistemological and metaphysical question about the "nature" of reality and its dependence on, or independence of, cognition; and (3) to the question whether reality conforms to the requirements of logic and is truly to be apprehended through logical thought,—i. e., to the controversy over "anti-intellectualism." These three issues, rather than the four tendencies, might, with some advantage, have furnished the chief rubrics of the volume. For, in very rough outline, Perry's main contentions are that "naturalism," though often conjoined with correct views upon the second and third questions, is unsatisfactory as an answer to the first question; that idealism in all its forms is an erroneous answer to the second question, though it is an error which has been largely inspired by a reaction against the errors of naturalism; that pragmatism is a faulty answer to the third question, though it represents a legitimate criticism upon certain errors of both naturalism and idealism; and that the true philosophy is to be found in a realistic metaphysics which avoids the mistakes of naturalism by a recognition of the significant rôle of conscious volition and "moral causality" in the world, yet avoids the excesses of pragmatic voluntarism by maintaining, with the idealists, "the validity and irreducibility of logical and moral science," even while it agrees with the pragmatists in asserting the "practical and empirical character of the knowledge process and the presumptively pluralistic constitution of the universe" (p. 272).

It is with the reasonings leading to certain of these positive conclusions that I should like to come to close quarters. Yet I should be doing the book a grave injustice if I did not, before proceeding to this examination, emphasize the importance and value of the piece of work which Professor Perry has done purely on its historical side.



While he brings to the task a wide acquaintance with most of the important phases of contemporary reflection, it is especially the recent developments and the contemporary situation in Anglo-American philosophy that he has essayed to portray. And it was high time that this should be undertaken. Many things of great interest, and some things of real moment, have been occurring among us these last two decades; yet there have been very few attempts hitherto made to give a comprehensive and interpretative account of these new movements—and no attempt, I think, which has achieved so high a degree of success as the present one. In spite of his doctrinal preoccupations Perry has produced an extremely illuminating review of the philosophical tendencies of our time in the English-speaking world; and in doing so he has rendered a service for which all students of contemporary thought must be grateful. His general plan of treatment I can myself, for reasons which it would take too long to explain, not regard as the ideal one; there are some serious omissions and oversights; and there are, of course, some interpretations to which it would be possible to take exception, if the author had not himself professed comparative indifference upon this point. But, in so far as it attempts to be a history, the book has the essential merit of being a genuinely philosophical history. It deals—in spite of the somewhat misleading prominence given to the four principal “isms”—with the reasons, the logical (and sometimes the alogical) motives that lead contemporary philosophers to their diverse conclusions, and not merely with the resultant systems as accomplished facts. These more fundamental motives, the dialectical elements out of which philosophic compounds are formed, the author has in many cases very instructively generalized and separated from the non-essential forms and the accidental concomitants which they happen to have in the doctrines of this or that individual philosopher. And his analysis of the complicated interlacings or cross-workings of these motives is often singularly penetrating. I can not forbear to add that the book perpetuates the tradition of felicity and distinction of English style which has been honorably characteristic of Harvard philosophers.

In one part of the book, at least, Perry assumes those definite responsibilities of the exegete which he has elsewhere disclaimed; and on this some relatively detailed comment is perhaps in order. By his appended summary of James's doctrines, Perry seems to me to have done a substantial service both to the reputation and influence of that master and to the study of contemporary philosophy. For James's thought had a good deal more coherency, and the various parts of his reflection more of definite interconnectedness,

than has commonly been recognized, more, indeed, than James himself ever paused to point out. Much of this Perry has exhibited in a highly illuminating manner; to not a few readers, I doubt not, this appendix will give a clearer and more correct understanding of James's philosophical position than they have ever gained from reading James's own writings. This may seem a singular thing to say in the case of a writer so notable as James was for concreteness and effectiveness in exposition. But the truth is that James was by no means a good expounder of his own philosophy *as a whole*, except for such readers as had the patience to do what Perry has here done for them: to compare one passage with another, to put two partially contradictory utterances together and extract from them the residuum of positive affirmation, to take from one volume the clauses intended to qualify the propositions in another volume, to make explicit certain logical relations implied, but not fully drawn out. The result of this process, to be sure, is not exactly a faithful psychological picture of the mind of James. Upon many questions James's thought was to the end characterized by uncertainties, confusions, tendencies towards now one solution and now another; and he was not wont to remember all his other, and perhaps counterbalancing, ideas, when his presentation of the idea for which he was at the moment concerned was in full course. His thought, in short, was in process and partly in oscillation, and his expression was unguarded and sometimes inconsistent; while Perry's synopsis reduces the thought to a single and arrested doctrine, and the expression to a relatively precise and balanced formulation. But if what we get thereby is not always identifiable with James's teaching, it still is in a certain real sense James's philosophy; the pieces of the picture are his handiwork, and the way in which they ought in the nature of the case to be fitted together was pretty well indicated by their contours. Especially good is the section on James's theory of knowledge; none who wish to understand the pragmatism of the original pragmatist should fail to read the pages in which Perry sets this forth, using, as it was very needful to do, the polemical statement in "The Meaning of Truth" to give greater precision to the constructive statement in "Pragmatism."

There are, however, some omissions and misapprehensions in the account of James's doctrine which perhaps were not inevitable consequences even of the attempt to convert it from a flux into "static concepts." The interesting fact that James, "radical empiricist" though he called himself, was never unequivocally an empiricist in the traditional sense, never held that all ideas are derived from sense-experience and that *a priori* knowledge is non-existent, is not<sup>3</sup>

<sup>3</sup> The fact is, however, indirectly intimated elsewhere in the volume (p. 206).



clearly indicated. That it is a fact seems to be shown by the last chapter of the "Psychology" taken together with "Pragmatism" (pp. 210-211). James's anti-intellectualism in "A Pluralistic Universe" went beyond that which Perry sets forth (pp. 366-368). It did not merely declare that the "perceptual flux" contains more than any concept ever contains, and that some of its most characteristic attributes can never be conveyed in conceptual form; it closely approached, and, indeed, clearly implied, the assertion that the flux is not subject to the requirements of logic, that in it everything is "already in the fullest sense its hegelian 'own other.'" This, though James was averse from putting the matter so baldly, clearly implied that reality when conceptualized may involve insoluble antinomies and *intellectually* irreconcilable contradictions; and that, accordingly, you can not argue merely from the "conceptual" self-contradictoriness of the notion of a thing to the unreality of the thing. But in "Some Problems of Philosophy" this position was abandoned, a definite solution of the antinomies was offered, and James's unwillingness to "stomach logical contradiction" was expressly given as his reason for adopting certain important metaphysical conclusions. Since Perry's purpose was to present James's doctrine in its final form rather than in its transitional stages, the omission of the former phase of James's anti-intellectualism was, no doubt, justifiable. But it does not seem certain that Perry has realized that this particular fluctuation occurred; and, in consequence, his citations from "A Pluralistic Universe" are sometimes *mal à propos*. For example, he gives the following as representing a view of James's: "The same mind may know the same thing at different times. The different pulses of one consciousness may thus overlap and interpenetrate. And where these pulses are successive the persistence of these common factors, marginal in one and focal in the next, gives to consciousness its peculiar connectedness and continuity." Now, as used by James, the second of these sentences is not at all synonymous with the first; and his whole notion of the "interpenetration of the pulses of consciousness," in "A Pluralistic Universe" is something far more paradoxical than Perry's summary here even hints. On the other hand, in "Some Problems" James did not hold that the pulses of consciousness are either interpenetrative or, in the mathematical sense, continuous; he there emphatically insists that they are discrete.<sup>4</sup>

Again, no account of James's philosophy can be complete which does not emphasize the fact that, next to its pluralism, its distin-

<sup>4</sup>I discuss this subject at length in *The Philosophical Review*, September, 1912.

guishing feature was a radical temporalism,—that, indeed, James's pluralism had temporalism as its form. By this I mean not only that James affirmed the irreducibly temporal nature of reality, but also that he was characteristically prone to think in terms of time-relations—than which few modes of thinking are rarer among philosophers. Meaning, for example, signified to him the reference of a concrete event at one moment to another such event at another moment. Truth was likewise defined, not as a relation of correspondence between a thought and a simultaneous or an undated object, nor yet as a conformity with some timeless validity, but as a special sort of inter-temporal relation. So throughout James's psychology, epistemology, metaphysics, and philosophy of religion runs a peculiarly temporalistic habit of mind. Now, Perry by no means neglects to note this trait. But he seems to me hardly to insist upon it sufficiently; and in any case, he fails to observe how greatly James was preoccupied with certain special problems of temporalism. Two of these were to James peculiarly important and engrossing: the question concerning the actual nature of time-perception, and the question about the bearing of a temporalist ontology upon one's view of the relation of logic to reality. Into this region of James's reflection Perry does not appear to me to have penetrated deeply. All these, however, are minor limitations in an unusually clarifying exposition.

Since, however, Perry's chief concern is to establish definite conclusions upon the three problems mentioned, it behooves the reviewer also to deal with the book chiefly as an attempt at constructive philosophical reasoning rather than as an historical study. Of the three problems, I shall take the space to discuss Perry's treatment only of the first two, *i. e.*, his philosophy of religion and his argument for realism. For these appear to me to be the parts of the book about which there is most left for the reviewer to say. The section dealing with the third problem,—*i. e.*, the examination of pragmatism and anti-intellectualism—is, I think, much the best thing in the volume; most of it seems to me so acute and so sane and judicious that I am afraid that any extended comment which I might make upon it would prove but a tiresome reiteration of admiration and assent.

It should be obvious that the first two problems ought by no means to be confused; yet it can not be said that Perry has succeeded in focusing the two separately and distinctly. An answer to the ontological question concerning the relation of reality to consciousness is no answer to the religious question concerning the conformity of reality to our ideals of value. The controversy over realism deals with a purely theoretical issue which may be and should be,



though it often has not been, dealt with in an entirely disinterested and cold-blooded manner. Metaphysical idealism does not as such imply, and can never by itself alone be made to establish, an optimistic view of the universe; realism does not as such imply a pessimistic one. Unfortunately, Perry has adopted a terminology which tends not only to obscure this distinction, but actually to merge the two issues. While he primarily means by idealism and realism the metaphysical doctrines ordinarily so designated, in several passages he flatly identifies the one with an optimistic view about the relation of worth to reality, the other with abstention from optimism. Idealism, he tells us (p. 38), is a form of romanticism (a word which surely has already enough meanings to answer for without acquiring a brand-new one); and "romanticism" signifies "a philosophy in which the spiritual ground or center of things is . . . accepted by an act of faith, in which the motive of religious belief is allowed to dominate" (p. 36). Thus idealism is the theory which professes to guarantee "the eternal predominance of the good" (p. 330). Realism, on the contrary, "rejects the doctrine that all things must be good or beautiful or spiritual in order to be at all." It recognizes that "the universe contains things good, bad, and indifferent."

This, of course, not merely confounds things which are distinct, but also somewhat unfairly creates prejudice against the one, and in favor of the other, answer to the purely metaphysical question. For it affirms that the idealistic answer is always at bottom motivated by considerations which have no lawful pertinency to a theoretical issue; while it ascribes to the realist alone the right "scientific" attitude of readiness to accept facts as one finds them. Imputing motives is a somewhat delicate and difficult business at best; but the history of philosophy clearly refutes the generalization that idealism in metaphysics has always been inspired by a craving for a religiously satisfying view of the world and has always professedly sanctioned such a view. That it often has sprung from that motive and ostensibly issued in such a *Weltanschauung* is undeniable; just as it is undeniable that some latter-day idealists have been guilty of the discreditable practise of recommending their doctrine to general acceptance by employing the language of religion in radically altered meanings, and even by a play upon the two senses—the technical and the colloquial sense—of the term "idealism." But the religiously affirmative and optimistic temper can not well be regarded as inherent in idealistic views so long as there are numbered among the idealists or near-idealists such names as Protagoras, Hume, Mill, Schopenhauer, and Bradley. Nothing is more obvious than that one of the types of mind inclining towards idealism—in

the form of phenomenalism—is precisely the positivistic, sceptical, hard-headed type, which refuses to affirm aught that is not attested by the immediate evidence of sense; while, on the other hand, the affirmative and confident humor which inclines men to religious faith and to a belief in the general goodness of things has also been a temperamental source of dogmatic realism—*teste* the Scotch School or Dr. Martineau. There has, throughout the history of speculation, been a curious cross-working of motives here; but I suspect that both religious optimism and physical realism are possible only by an act (usually unconscious) of faith; and that much historic idealism, even when it speaks the language of theology, is in reality a manifestation of the spirit which denies. *Das war des Pudels Kern!* But in theoretic philosophy the spirit which denies is by no means the Devil.

It is the more surprising that Perry has so far confused these two issues, because he has seen with unusual clearness that there is no true logical inference possible from idealism as such to a morally inspiring and religiously fortifying view of the universe. One of the most admirable chapters in the book, that entitled “Absolute Idealism and Religion,” exposes with merciless lucidity the confusions and equivocations through which alone many neo-Kantian or eternalistic idealisms of the last half-century have acquired a speciously edifying sound:—for example, the confusion, characteristic of much of Eucken’s writing, between the notion of “the primacy of spirit” in a purely epistemological and practically barren sense, and the notion of man’s practical dominance over his environment and of his power over it and over himself. Especially telling is Perry’s “showing-up” of the imposture in the pseudo-voluntarism of the neo-Fichteans. This chapter at least, it is to be hoped, will be generally read by those whom Perry calls “the middle-men of enlightenment—clergymen, litterateurs, lecturers, and teachers,” many of whom have long been wont, no doubt in all innocence, to dress up the unlovely figure of the idealistic Absolute in the garb of the God of religion, and to bid men lift up their eyes to that object as the source of courage and consolation. But that the author who so clearly shows the logical disjunction between these sorts of idealism and religious optimism should at the same time imply that religious optimism is the logical essence of idealism, is a little curious.

If now, in this first paper, we separate the threads of Perry’s reasoning which concern the philosophy of religion or *Weltanschauungslehre* from those which concern the epistemological controversy over realism, his chief contentions upon the former point may be roughly summarized thus: Idealism in its current forms is



(for reasons already indicated) without religious value; it is also (for reasons hereafter to be examined) logically inadmissible. But realism, or at least physical realism, has not uncommonly been associated with "naturalism," *i. e.*, with the adoption of the categories and the larger conclusions of physical science as a definitive general philosophy. It is, however, undeniable that naturalism is irreconcilable with religion,—with "the requirement that the cosmos, whatever it be made of, shall in the end yield to desires and ideals—shall, in short, be good." "Religion of the optimistic type, the belief that civilization dominates and eventually possesses the cosmic process, can not survive, if the scientific version of things be accepted without reservation." Such a belief, or at least such a hope, Perry is solicitous to defend;—a fact which shows that faith may play its part, wholesomely enough, in the philosophy even of a realist. With the gloomy eloquence of his fellow-realist, Mr. Russell, in that striking essay called "A Free Man's Worship," he has small sympathy. He has an affirmative religious philosophy of his own, though it is a completely and honestly "this-worldly" one; he seeks to fortify men's confidence that "values," though they do not "constitute the ground of existence, will in the long run control existence" (p. 340). He therefore offers a criticism of naturalism, a proof of the inadequacy and inconclusiveness of the "scientific version of things."

This proof, which one must suppose to have been intended to yield one of the three principal constructive conclusions of the book, is, I think, somewhat slighted in the execution. From the idealistic and other familiar grounds of attack upon naturalism, such as those used recently by Ward and Wenley, Perry is, of course, debarred by his general position; of several such attacks he makes some vigorous criticisms. His own justification of "the claims of religious optimism" appears to rest chiefly upon three grounds: (*a*) a logical or Platonic realism, (*b*) a belief in the "effectuality of interests" or desires, and (*c*) an extremely sanguine sort of evolutionary meliorism. (*a*) "Logic," it is affirmed, "is prior to physics" (p. 109), but is equally descriptive of a realm of independent, extra-mental realities (p. 83); consequently, "being has, *in the last analysis*, a logical rather than a physical character" (*ib.*, italics the author's). If this "rather" is seriously meant, the whole of Perry's physical realism resolves itself eventually into a sort of Platonic realism; a singular outcome, which one could wish to have a great deal more fully elucidated. However this may be, the conclusion just quoted, we are told, "is fatal to naturalism." Perhaps it is; but I fail to see how it "affords a basis for religious belief," if religious belief means, as Perry repeatedly insists that it should mean, not merely a barren

metaphysical affirmation of otiose immaterial subsistences, but also a definite expectation of the conservation and the triumph of concrete human values in the order of time. This first argument, then, appears irrelevant to the conclusion to be established, and its premises may therefore, in the present connection, be left unscrutinized.

More pertinent is (b) the second consideration. "That interests operate and that things take place because of the good they promote"—i. e., because conscious agents desire them—is, Perry holds, a fact which it is mere wantonness and absurdity to deny; like Mr. McDougall, he takes his stand upon the fundamental certitude of hedonic selection. This, now, is a philosophical contention of interest and importance; but one is obliged to record with disappointment that Perry neglects not only to offer any new or extended argument for it, but also to make clear just how much he means by it and what its inherent implications are. He employs upon the same pages two seemingly irreconcilable sets of expressions upon the subject. On the one hand, he appears to wish to avoid unequivocal interactionism. For he denies that there is "any absolute incompatibility between mechanism and interest," and at times writes as if the mechanical determination of all physical events could be asserted and epiphenomenalism at the same time escaped. "The same process may obey many laws and laws of different types." "Were it necessary that the good should triumph only in the breach of mechanical law, then the growth of science would indeed be ominous. But life triumphs through and in mechanical law. The systems of nature enter *intact* into the systems of life" (p. 344). This, one would naturally suppose, means that, for example, a martyr's march to the stake can be equally correctly and fully accounted for by referring it either to a mechanical uniformity, in accordance with which the martyr's body is at a given time necessarily moved in a certain direction at a certain velocity; or to a psycho-physical uniformity in accordance with which the emotion of loyalty to conviction propels the selfsame body upon the same path at the same moment. This, no doubt, would be an attractive synthesis; it has the air of dealing very handsomely with both mechanism and interactionism, since it seemingly endorses in full the claims of each. But there are certain fairly obvious and notorious difficulties in such a reconciliation; and to these Perry gives no attention. I mention but one. If a specified kind of event or circumstance, *A*, occurs always in concomitance with another event or circumstance, *B*, and if a specified effect, *X*, occurs whenever  $A + B$  occurs, then, it is quite true, we may formulate this uniformity in two ways. We may say that *X* always follows *A*, or that it always follows *B*. And if we know no more of the matter



than this, we may remain in doubt whether we ought to regard *A*, or *B*, or *A + B*, as the "cause" of *X*. But if we happen to know or to assume that, given *B*, *X* would occur even if *A* were absent, we should certainly not consider *A* the cause, or even part of the cause, of the effect. However Humian one's conception of causality, a circumstance which, though present when a given effect is produced, is held to be not requisite to the production of that effect, is *ex hypothesi* no causal determinant of the effect. The fly who, observing that whenever he sat upon the axle of the chariot-wheel a great dust ensued, inferred that he was himself the cause of the dust, was doubtless a faulty inductive logician; yet so far as his observation went, his hypothesis, though not proven, was from his point of view not logically absurd. But if the same fly had held a philosophy which declared that the motion of the chariot was quite sufficient to account for all the dust, yet had at the same time persisted in affirming the dust-producing "efficacy" of his presence on the axle,—he would have been a very illogical fly indeed. If, now, Perry's conception of the "multiple determination" of any single event in the life of a conscious being implies that one of the so-called determinants—*e. g.*, the mechanical one—is of itself a sufficient cause of the event, he falls into a like illogicality, when he at the same time affirms that the event happens "because of" the coincident but unnecessary presence of a desire or interest. If, on the other hand, he supposes the desire to be really necessary to the production of the effect, he implies, not the conformity of a single event with two parallel, non-interfering, "laws," but the supplementing or modification of the effects which mechanical uniformities alone would have ensured, by the interposition of volitional agencies. If the martyr's bodily conduct could be deduced by means of a complete knowledge of the mechanics of molecules, which laws require no reference to any such factors as desires or interests or moral obligations,—then these latter are causally redundant circumstances. But if the martyr's conduct can not be so deduced, it must be because the observed effects are different from those which the mechanical laws would have described. In other words, the invocation of what Perry calls "moral causality" can be justified only if the implications of mechanical laws alone, with respect to the specified conditions, are believed to be incompatible with the phenomena which in the given case actually occur. And this is equivalent to affirming the incompatibility, *in the given case*, of purely mechanistic with volitional determination. Accordingly, universal mechanism seems to mean epiphenomenalism, or to mean nothing, and the assertion of the efficacy of interests as such seems to mean the denial of universal mechanism, or to mean nothing.

There are, however, numerous expressions of Perry's which seem to be plainly tantamount to a denial of universal mechanism,—expressions in which the "multiple determination" of the same process is maintained only in the sense that a single act of a conscious being involves both types of causality, the one to account for part of the effect, the other to account for the rest of it. "There is," one reads, "freedom from exclusive control of mechanical laws." "If it be true that the kinetic energy of my actions is quantitatively proportionate to the nutritive substances which I consume, it is not less true that my actions exhibit a qualitative uniformity which can *only* be expressed in terms of the interests that govern me" (p. 342; italics mine). This passage suggests, not a reconciliation of "mechanism and interest," but plain interactionism. For, of course, no interactionist ever denied that there *are* mechanical laws and that they have something to do with the case; his doctrine does not imply that the martyr's movements are not conditioned by the force of gravity as well as by the emotion of loyalty. But with an interactionistic interpretation of Perry's position it is impossible to reconcile the expressions in which he implies that he has transcended the old antithesis. "It is," he writes, "customary to suppose that the accepted validity of mechanical laws somehow stands in the way of the operation of interest." Now, in fact, it is *not* customary to suppose that the validity of mechanical laws as *partial* determinants of the action of conscious beings stands in the way of the operation of interest; on the contrary, I dare say, nobody ever supposed anything of the sort. What *is* often assumed is that universal determination of all physical happenings through mechanical laws is inconsistent with the operation of interest in the physical order. And the careful reader will be unable to be quite sure from Perry's language whether he means to controvert this actual "customary supposition" or not.

One may, then, fairly complain of the author that he has left a most important point in his argument in a regrettable confusion and obscurity. Yet it is clear enough what he *ought* to mean, in order to give genuine significance to his polemic against naturalism as a professedly final philosophy. He ought to mean an unqualified assertion that the actions of men and other organisms are not at all what they would be if they conformed merely to general laws of the motion of masses or molecules, laws valid alike for inorganic, organic, and conscious beings. Assuming this to be the position really intended, I should wish to urge, not that it is intrinsically untenable, but only that, if taken, it opens the way to further conclusions which Perry hardly seems to have glimpsed. One who goes so far



as this can not well avoid going farther; to change the figure, his affirmation is big with implications which cry for the light of day.

Meanwhile, it is evident that even this conclusion falls short of a justification of the sort of "religious optimism" which Perry desires to encourage. It affirms the efficacy of ideals in the universe, but not their supremacy, present or future. It assures us of the pertinency of moral causality amidst the changes of the outer world; but it does not assure us of its eventual predominance. For this assurance, Perry invokes (c) considerations which may perhaps not unfairly be reduced to the remark that "consciousness" has done a good deal in the world already, that we know little about the universe's latent capacities, and that in view of these facts we ought to hope for the best. We are, he urges, not justified in "speaking for the universe in terms of the narrow and abstract predictions of astronomy;" that "residual cosmos . . . which looms beyond the border of knowledge . . . may in time overbalance and remake the little world of things known, and falsify every present prophecy." It is upon such a note that the book ends. So confident a temper one would not willingly discourage; that it is a false confidence no man, happily, can demonstrate. In so far as Perry argues affirmatively for it (against, for example, Russell and Santayana) he seems to me to argue ineffectively. To have proved even that "consciousness, instead of creating the mere toys and playthings of the imagination, does actually make [some] things good," is by no means to have proved it "fatuous and unreasonable" to anticipate that probably, in despite of consciousness, the sun will some day grow cold and the earth be left a lifeless waste. Perry is prone at times to find in the "effectuality of consciousness" a prophetic significance which it does not logically contain. The fact that I can at will lift a table affords no safe ground for the inference that I shall some day be able to remove mountains; and the fact that humanity has much transformed the planet of its habitation affords as little ground for the inference that it will some day be able to regulate the solar system. Even seriously to hope for this last (a hope which certainly seems implied by Perry's two concluding pages) will impress many minds as an attitude of somewhat comic presumptuousness. And that "the claims of religious optimism" are not really based upon inference, but upon an appeal to faith and courage, Perry, on the whole, plainly enough recognizes. The only argument in this matter is, in truth, the argument from nescience; *ignoramus, ergo speremus*. That, if not at all an intellectually cogent, is none the less a potent, argument. And if the

measure of our ignorance is the measure of our permissible hope, then indeed is the room left for hope large.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*The Psychology of the Religious Life.* GEORGE MALCOLM STRATTON.  
London. George Allen & Co. 1911. Pp. ix + 376.

This volume is one of the "Library of Philosophy" series edited by Professor Muirhead. It is most delightfully written, the reader being carried along through many difficult problems of the philosophy and psychology of religion by a real literary style and by constant surprises in the way of happy turns of thought. It is a book to be enjoyed by the general reader as well as by the specialist.

The conflict of opposing attitudes, so well known to all students of religion, is the underlying theme of the treatment. The author's aim is not so much to explain, if that were indeed possible, as to describe the various phases of the religious spirit as diverse aspects of this conflict of impulses and motives. First he points out the conflicts of feeling and emotion as seen in the alternate tendency to exalt and depreciate the self, in the breadth and narrowness of sympathy, in the acceptance and renunciation of the world, in the alternation of gloom and cheer, and so forth. In each case the author shows that the opposing attitudes are genuine expressions of human moods and are alike needful for the working out of the complex religious attitude. "The mind, by its very attention to a more impressive form of existence, finds itself drawn to opposite poles of feeling; now honoring and now despising the self; holding fellow-men in respect or in contempt; loving or else hating the ways and institutions of the world; viewing the relation between humanity and the divine, now with excitement and now with calm, and in particular with gladness or with sorrow. The very fealty to the Ideal—stirs into life the most contrary emotions."

Then the conflicts of action are described as seen, on the one hand, in excessive ritualism and, on the other, in avoidance of all ritual; in aggressive religious activity and in the attitude that shuns all action and seeks inner and outer passivity. The varying expression of religion, now in some sort of overt action and now in inaction, being but the reflection of varying moods in the individual or of varying types of human nature or of differences, perfectly genuine, of mental constitution. With all the human need of action there are yet cravings that action does not satisfy and man often turns and finds satisfaction of religious impulses in passive contemplation. "Opposed to the religion of effort and the outward look is that of quiet and the inward look."

Last of all there are the conflicts of thought, the trust in the intellect, and the strange jealousy of all things reasoned. The belief now in many



gods and now in one supreme divinity, in the known and in the unknown god, in the god near at hand and in the gods far off. Particularly interesting and suggestive is the discussion of the motives leading to a multiplication of gods or to a reduction of all to a unity.

The closing chapters deal with the nature of the ideal and the standards of religion as interpreted through the many-sided conflict of motives on which religion is seen to rest.

To a large extent the data offered by the author in support of his theses are drawn from the highly developed religions of India and of the Semitic peoples. If a word of criticism may be offered, it seems to the reviewer that the author does not draw sufficiently from the *recent* literature regarding the ethnic religions, *e. g.*, the later researches dealing with the American Indians. One finds here an impressive picture of the many-sidedness of the religious motive and of the genuineness of many phases which seem at first glance to be hopelessly opposed. Nevertheless it is a view from only one angle that we are given. Much more might be done toward an explanation of the deep-seated conflicts by a more thorough discussion of the relation of the inner religious attitudes to the more ordinary phases of the life process. The reviewer has the feeling, perhaps unwarranted, from reading the book, that the author tends to take the conflicts as ultimate facts, referring to them as the final explanation of diverse modes of religious expression. Certainly the phenomena of social life will throw more light than the author admits upon many of the curious opposing tendencies here discussed.

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*The Alchemy of Thought.* L. P. JACKS. New York: Henry Holt and Company. 1911. Pp. viii + 349.

This book is more notable for its manner than its matter. Fluent, often witty, distinguished by a rare and welcome ease, which in an instance or two, it must be confessed, becomes very like journalese, the manner, bar prodigality of capital letters amounting to extravagance, is a consummation in philosophy much to be desired. The matter is an ancient dogma redressed to serve the fashionable taste. Its essence is "the whole." Not the "rational whole," for that, because of the new mode introduced by pragmatists and pluralists, is no longer the supreme excellence. The supreme "whole" contains the "rational whole" and many other "wholes" and parts, as a body contains organs, or a sentence words. Whatever is, is a necessary and organic part of this highest whole, which has the familiar omnivorousness of the Roycean absolute. It differs from the latter in garb and garniture, wearing plumes borrowed from the esthetic and anti-intellectualistic vitalism of Bergson and the utilitarian epistemology of the humanists. In it, philosophies are complementary and organic. One is nothing without its enemy, the later without the earlier. Knowledge is constitutive; hence a revealing science of "fixed terms" is impossible. Science, in fact, fails because it regards the

universe as a "Problem-to-be-solved." But every question, scientific or philosophic, assumes its answer in advance. The universe hence is not a problem. It is a thing self-explanatory, "a free work of art," whose "infinite and eternal attributes" no science of ours could ever exhaust. For the method of science, like the method of philosophy, is to abstract, to arrest, to fix; its results, consequently, are abstractions, verbalizations, things insulated and self-defeating, needing always to be pieced out and saved by the residuum they thought to abandon, the residuum which concepts miss, words skip, philosophic systems detach from.

Art is closer to reality than thought: only the artistic vision succeeds in apprehending the inwardness of things. But when these things are "the whole," the vision of them is religion. Religion, Mr. Jacks announces in passionate and resounding dithyrambs, alone speaks with authority, is possessed of cosmic courage, unifies men, devotes them to the "Highest," rests absolute and self-sufficient.

Such is the content of this charming collection of lyrical essays in philosophy. It indicates at once the wide range of the religionistic temper in its search for aid and comfort from the intellect and the broad tolerance it can develop for the sake of the conservation of its own values. Whatever the justice of its attack on systematic thinking and on science, it misses the application of its own lyric and esthetic formula to these things. Thus it insists on what they do not do, rather than on what they do, and their life and inwardness escape it. Its method is not, of course, new. The sceptical "*tu quoque*" it throws in the teeth of positive thought is the immemorial device of the pietist and the mystic. For its contemporary use Bergson and the pragmatists are not a little to blame, but a genuine pragmatism makes no reservation in favor of one type of knowledge against another. All, religious, esthetic, scientific, must submit to the same tests and be established in the same way. It is only when the pluralism is superficial and the application of the pragmatic method negative and not positive, that such distinction can be made. And a negative application of pragmatism and a superficial pluralism mean a dialectical game with loaded dice, a special plea which intends to prove the superior virtue of "the whole" by no matter what device. As Mr. Jacks so well says, the answer is already presupposed by the question, while for positive pragmatism the answer is not presupposed, and only the "tender-minded" could presuppose it.

H. M. KALLEN.

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## JOURNALS AND NEW BOOKS

MIND. January, 1912. *The Method of Metaphysics; and the Categories* (pp. 1-20): S. ALEXANDER.—Experience reveals two orders of things: mind, the act of experiencing, which is enjoyed; and external things, the content experienced, which are contemplated. Things do not



depend upon mind. The method of metaphysics is empirical. The categories are descriptive of the pervasive character of things and are both enjoyed and contemplated. *Does Moral Philosophy Rest on a Mistake?* (pp. 21-37): H. A. PRICHARD. — Why, upon reflection, ought we to do the things which in unreflective thinking we suppose we ought to do? The answers given by "happiness" theories and "intrinsic goodness" theories are unsatisfactory. The sense of moral obligation is not open to proof, but rests upon immediate and self-evident apprehension. *The Meaning of Mysticism as seen through its Psychology* (pp. 38-61): WILLIAM ERNEST HOCKING. — Psychology has the advantage over metaphysics and theology in finding the meaning of mysticism. Mysticism is neither a metaphysics nor an experience, but it is the fine art of worship. From this interpretation objection is made to the prevailing metaphysical interpretations, and positive theses are contributed to the psychology of mysticism. *The Vedantic Absolute* (pp. 62-78): HOMO LEONE. — An account of the Vedantic concepts of unity and totality, with a description of the Vedantic teachings about man, nature, God, and practical problems. *The Limits of Deductive Reasoning* (pp. 79-83): H. S. SHELTON. — An outline statement, inviting criticism, of logical principles to be developed more fully at a later date. *Discussions: The Kernel of Pragmatism* (pp. 84-88): HASTINGS BERKELEY. *Truth's "Original Object"* (pp. 89-93): E. D. FAWCETT. *Critical Notes: H. Vaihinger, Die Philosophie des Als Ob. System der theoretischen, praktischen und religiösen Fiktionen der Menschheit auf Grund eines idealistischen Positivismus, mit einem Anhang über Kant und Nietzsche*: F. C. S. SCHILLER. William McDougall, *Body and Mind: a History and a Defence of Animism*: J. S. MACKENZIE. Henri Delacroix, *Études d'Histoire et de Psychologie du Mysticisme*. *Les grands Mystiques Chrétiens*: A. R. WHATELY. *New Books. Philosophical Periodicals. Notes.*

REVUE DES SCIENCES PHILOSOPHIQUES ET THÉOLOGIQUES. July, 1912. *Les Judgements de valeur et la conception théologique de la morale* (pp. 433-464): M. S. GILLET. — The double problem of regulation and motivation in ethics can be satisfactorily solved only in the hypothesis of a theological ideal, which is at the same time the norm and supreme motive of conduct. *La théorie de l'intelligence chez saint Bonaventure* (pp. 465-489): F. PALHORIÈS. — There are two sources of knowledge in St. Bonaventure's philosophy: (1) the senses, from which all knowledge starts, and (2) a certain union of our thought with the divine thought, by means of which we possess an intuition of the eternal truths. *L'Histoire des religions de l'Inde et l'apologétique* (pp. 490-526): LA VALLÉE POUSSIN. — A study of the origin and development of the religions of India. *Note. Bulletins. Chronique. Recension des Revues. Supplément.*

Barton, George A. *The Heart of the Christian Message*. New York: The Macmillan Company. 1912. Pp. xi + 218. \$1.25.

Höfding, Harold. *Brief History of Modern Philosophy*. Translated by Charles Finley Sanders. New York: The Macmillan Company. Pp. x + 324. \$1.50.

Leuba, James H. *A Psychological Study of Religion*. New York: The Macmillan Company. 1912. Pp. xiv + 363. \$2.00.

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### NOTES AND NEWS

PROFESSOR E. A. KIRKPATRICK, of the State Normal School, Fitchburg, Massachusetts, would be glad to receive letters from all those who would care to have a series of photographs, similar to those issued by the Open Court Publishing Company, of present-day psychologists, educators, and men of science. Suggestions concerning the photographs which should be placed in such a collection would be welcomed by him, and the amount of interest in the matter indicated by the communications received will determine whether it is feasible to undertake the task of collecting and publishing.

A COURSE of lectures at Union College on the Ichabod Spencer Foundation will be given by Dr. Rudolf Eucken, professor of philosophy at the University of Jena and visiting professor at Harvard University, on "Goethe as a Philosopher," "Idealism and Realism in the Nineteenth Century," "Defence of Morality," and "Philosophy and Religion."

IN a recent issue of the JOURNAL, in reporting Professor W. F. Book's appointment at the University of Indiana, he was referred to as professor of psychology and philosophy at Leland Stanford University. The credit should have been given to the State University of Montana.

DR. FELIX KRUEGER, professor of philosophy and psychology at the University of Halle-Wittenberg, and Kaiser Wilhelm professor at Columbia University, 1912-13, gave his inaugural lecture Tuesday, October 29, on "New Aims and Tendencies in Psychology."

DR. WILLIAM G. SEAMAN, formerly of the department of philosophy of De Pauw University, has been elected president of Dakota Wesleyan University. Frederick M. Harvey, Ph.D. (Boston '11), goes to De Pauw in Dr. Seaman's place.

DR. EDWARD BRADFORD TITCHENER, who has been Sage professor of psychology in the graduate school of Cornell University, has been appointed head of the department of psychology and lecturer in the College of Arts and Sciences.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### PERCEPTION AND ORGANIC ACTION

EVERY reader of Bergson—and who to-day is not reading Bergson—is aware of a twofold strain in his doctrine. On the one hand, the defining traits of perception, of common sense knowledge and science are explained on the ground of their intimate connection with action. On the other hand, the standing unresolved conflicts of philosophic systems, the chief fallacies that are found in them, and the failure to make definite progress in the solution of specific philosophic problems, are attributed to carrying over into metaphysics the results and methods of the knowledge that has been formed with the exigencies of action in view. Legitimate and necessary for useful action, they are mere prejudices as respects metaphysical knowledge. Prejudices, indeed, is too mild a name. Imported into philosophy, they are completely misleading; they distort hopelessly the reality they are supposed to know. Philosophy must, accordingly, turn its back, resolutely and finally, upon all methods and conceptions which are infected by implication in action in order to strike out upon a different path. It must have recourse to intuition which installs us within the very movement of reality itself, unrefracted by the considerations that adapt it to bodily needs, that is to useful action. As a result, Bergson has the unique distinction of being attacked as a pragmatist on one side, and as a mystic on the other.

There are at least a few readers in sympathy with the first of these strains who find themselves perplexed by the second. They are perplexed, indeed, just in the degree in which the first strain has left them convinced. Surely, they say to themselves, if the irresolvable conflicts and the obscurities of philosophy have arisen because of failure to note the connection of every-day and of scientific knowledge with the purposes of action, public and private, the clarification of philosophic issues will arise by correcting this failure, that is to say, by the thorough development of the implications of the genuine import of knowledge. What an emancipation, they say to themselves,

is to come to philosophy when it actively adopts this discovery and applies it to its own undertakings!

Perhaps it is because of unredeemed pragmatic prejudice that I find myself among those who have this feeling of a baffled expectation and a frustrate logic. Nevertheless, the feeling indicates a genuine intellectual possibility, a legitimate intellectual adventure. The hypothesis that the same discovery that has illuminated perception and science will also illuminate philosophic topics is an hypothesis which has not been logically excluded; it has not even been discussed. It may, then, be worth trying. Any notion that this road has been closed in advance arises from confusion in reasoning. It rests upon supposing that the unresolved antitheses of philosophic systems and the barriers that arrest its progress have been shown to be due to importing into philosophy, from common life and from science, methods and results that are relevant to action alone. If it had been shown that the evils of philosophy have resulted from *knowingly* carrying over into it considerations whose practical character had all along been *knowingly* acknowledged, then the conclusion would follow that philosophy must throw overboard these considerations, and find a radically different method of procedure. But this is a supposition contrary both to fact and to Bergson's premises. Why not, then, try the other hypothesis: that philosophic evils result from a survival in philosophy of an error which has now been detected in respect to every-day knowledge and science? Why not try avowedly and constructively to carry into philosophy itself the consequences of the recognition that the problems of perception and science are straightened out when looked at from the standpoint of action, while they remain obscure and obscuring when we regard them from the standpoint of a knowledge defined in antithesis to action?

We are thus carried a step beyond the mere suggestion of a possibly valid adventure in philosophy. If a conception of the nature and office of knowledge that has been discarded for common sense and for science is retained in philosophy, we are forced into a dualism that involves serious consequences. Common sense knowledge and science are set in invidious contrast not merely with philosophy—a contrast that they might easily endure more successfully than philosophy—but with "reality." As long as the notion survives that true knowledge has nothing to do with action, being a purely theoretical vision of the real as it is for itself, insistence upon the operation within perceptual and conceptual "knowledge" of practical factors *ipso facto* deprives such "knowledge" of any genuine knowledge status. It gives us not reality as it is, but reality as



it is distorted and refracted from the standpoint of bodily needs. To condemn all other "knowledge" (as *knowledge*) to the realm of fiction and illusion seems a high price to pay for the rescue of philosophy from the ills that it may be suffering from.

Thus we are compelled to go still further. A philosophy which holds that the facts of perception and science are to be explained from the standpoint of their connection with organically useful action, while it also holds that philosophy rests upon a radically different basis, is perforce a philosophy of reality that is already afflicted with a dualism so deep as seemingly to be ineradicable. It imports a split into the reality with which philosophy is supposed to deal exclusively and at first hand. We account for perception and science by reference to action, use, and need. Very well; but what about action, use, and need? Are they useful fictions? If not, they must be functions of "reality," in which case knowledge that is relevant to action, useful in the play of need, must penetrate into "reality" instead of giving it a twist. With respect to *such* characters of the real, a purely theoretical vision of intuition would be refracting. Suppose that conceptions mark fabrications made in the interest of the organic body. Are the organic needs also fabrications and is their satisfaction fabrication? Either that, or else the conceptual intelligence which effects the development and satisfaction of the needs plays a part in the evolution of reality, and a part that can not be apprehended by a mode of knowing that is antithetical, in its merely theoretic character, to them. From the standpoint of philosophy, accordingly, the analytic intellect, space, and matter—everything related to useful action—must be irreducible surds, for reality as apprehended in philosophic cognition by definition omits and excludes all such affairs.

Precisely the same order of considerations applies to the theory of knowledge. Were it not for the survival in the court of last resort and of highest jurisdiction of the old idea of the separation of knowledge and action, Bergson's special analyses would point to very different conclusions from those that constitute his official epistemology. The connection with action of the characteristic methods and results of knowledge in daily affairs and in science would give us a theory of the *nature* of reflective intelligence, not a theory of its *limitations*. When theoretic and disinterested knowledge cease to occupy a uniquely privileged position with respect to reality, there also cease to be any motive and ground for denying the existence of theoretic and disinterested knowledge. Such knowledge is a fact exhibited in sympathetic and liberal action. Its contrast is not with the limitations of practical knowledge, but with

the limitations of the knowledge found in routine and partisan action! Genuine theoretic knowledge penetrates reality more deeply, not because it is opposed to practise, but because a practise that is genuinely free, social, and intelligent touches things at a deeper level than a practise that is capricious, egoistically centered, sectarian, and bound down to routine. To say the same thing the other way around, if it were not for the assumed monopolistic relation to reality of a knowledge disconnected from organic life, reference to action would cease to be a distorting, or even a limiting, term with respect to knowledge. The reference would be wholly explanatory and clarifying. Just as complications attaching to the questions of the relation of mind and body, or the self and its stream of mental states, are disentangled, and the elements in question fall into ordered perspective when viewed from the standpoint of the growth of an intelligently effective action, so with the other questions of philosophy.

It is high time, however, to make a transition from these general considerations to the special problems to which they are relevant. In this paper, I propose to deal with their bearing upon the topic of perception. Before directly attacking it, I must, however, introduce some further general considerations in order to make clear the bearing of what has been said upon what is to follow. Take the matter purely hypothetically. Imagine a philosophy which is convinced that the peculiarities of perception remain opaque, defying genuine analysis, as long as perception is regarded as a mode of theoretical cognition, while they become luminous with significance when it is treated as a factor in organic action. Imagine also that this conviction is conjoined with a belief that there is something in the nature of organic action marking it off so definitely from the truly real, that the latter must be known by a radically heterogeneous operation. Imagine that in the further course of the discussion the dualism in reality presupposed in this mode of treatment threatens to break out, and to break down the account. What is likely to happen? Are we not likely to find, at first, a sharpening of the antithesis between the special topic under consideration (whether it be perception, space, quantity, matter) and pure knowledge and genuine reality; and then, as the metaphysical consequences of this dualism come to view, a toning down of the antithesis between the two, by means of the introduction into each of reconciling traits that approximate each to the other? And surely this is one of the marked traits of the Bergsonian procedure. Suppose, however, we had commenced, not with the view that is afterwards corrected, but with the corrected view. Would not then the special analysis of the



specific topic (perception or whatever) have assumed a very different form from that in which it is actually found? And is it not *a priori* likely that the original account will not be found quite consistent even in its own nominal sense? Is it not likely that there will be already present in its elements that, inconsistent with the notion of the sheer opposition of useful action and reality, point to the correction to be later made?

I have asked the above questions not because I expect the reader to answer them, much less because I expect in advance an affirmative answer, but to put the reader in possession at the outset of the point of view from which the following criticism of Bergson's account of perception is written, and, in outline, of the technic of its method. As has been sufficiently intimated, I shall not question his main thesis: the description of perception as a factor in organic action. Neither shall I be called upon to question the specific terms in and by which he carries on this description: the central nature of indeterminate possibilities and the preoccupation of perception with the physical environment, not with mental states. My point is rather that so far as these traits receive due development we are carried to a conclusion where reference to useful action ceases to mark an invidious contrast with reality, and, accordingly, indicates a standpoint from which the need of any rival mode of knowledge, called philosophical, becomes doubtful.

It is not enough to say that perception is relative to action: one needs to know *how* it is relative, and one needs to know the distinguishing traits of action. And so far as Bergson's account makes perception relative to action, that is, makes knowledge qualified by possibilities (by freedom), and *useful* in affording an efficient development of free action, we are taken where the antithetical dualisms of space and time, matter and spirit, action and intuition have no belonging. Let the reader recall the honorific use of "life" in Bergson and his depreciatory use of "action," and decide whether the following sentence (the most emphatic one that I have found in his writings in the sense just indicated) does not break down the barriers supposed to exist between action and life, and connect perception with an action which is naught but the process of life itself. "Restore, on the contrary, the true character of perception; recognize in pure perception a system of nascent acts which plunges roots deep into the real; and at once perception is seen to be radically distinct from recollection; the reality of things is no more connected or reconstructed, but touched, penetrated, lived."<sup>1</sup>

<sup>1</sup>"Matter and Memory," English translation, pages 74-75. The significance of the passage stands out the more if one calls to mind that, from the other standpoint, recollection is the index of the real, of time and spirit, while perception, since connected with action, is tied down to space and matter.

Place in contrast with this sentence such statements as the following: "My conscious perception has an entirely practical destination, it simply indicates, in the aggregate of things, that which interests my possible action upon them";<sup>2</sup> and this: "When we pass from pure perception to memory, we definitely abandon matter for spirit."<sup>3</sup> Must not such a view of perception flow from quite another analysis, or at least from another emphasis, from that which yields the conception that in perception we *live* reality itself? I have finally reached a point where I can state what seems to me to be a specific oscillation between inconsistent views in Bergson's account of perception, while it will also be evident, I hope, that the discussion of this oscillation is not a picayune attempt to convict a great writer of a mere technical inconsistency, but involves the whole question of the validity of the knowledge that is connected with action, and of the need in metaphysics of another kind of knowledge. One view of perception implicates indeterminate possibilities (and hence time, freedom, life) in the quality of its operation, subject-matter, and organ; the other regards indeterminate possibilities as conditions *sine qua non* of the act, but not as qualifying either its nature as an act or that of its subject-matter. Our long introduction is now at an end. We come to the details of Bergson's account of perception.

## I

Perception, according to Bergson, must be approached as a problem of selection and elimination, not as one of enhancement and addition. If there were more in the conscious perception of the object than in its presence, the problem of the passage from the latter to the former would be wrapped in impenetrable mystery. Not so, if its perception means less than its presence, since all that is then required is to discover the condition that might lead to the abandoning by the unperceived object of some of its entire being.<sup>4</sup> In the search for this condition, we begin by noting the trait characteristic of the existence of the subject in its entirety. Since the physical world is always a scene of complete transmitting, by equal and opposite reactions, of energy, it follows that "in one sense we might say that the perception of any unconscious material point whatever, in all its instantaneousness, is infinitely greater and more complete than ours, since this point gathers and transmits the influences of all the points of the material universe."<sup>5</sup> Anything, accordingly, that would eliminate some of the transmitting power of some part of the

<sup>2</sup> *Ibid.*, page 306.

<sup>3</sup> *Ibid.*, page 313.

<sup>4</sup> *Ibid.*, page 27.

<sup>5</sup> *Ibid.*, page 30.



total physical system would throw the phases of this blocked part into contrast with the rest of the system, and thereby into a kind of relief equivalent to its perception. Introduce a living body, with its special interests, and this is just what happens. The activity of the organism allows all influences, all movements, that have no interest for it, to pass immediately through it. With respect to them it is a neutral transmitter like any other part of the total system. But those movements that are of concern to it are singled out, disengaged.<sup>6</sup> They are held up, as it were, as a highwayman holds up his intended victim preparatory to exercising upon him the function of robbery that defines a highwayman. This arrest and detachment throws the traits of the things with which it is concerned into relief: they are perceived. From this interpretation of perception are derived its main traits. It is concerned directly with physical things, no mental states intervening; the perceived objects are arranged about our body as their center; they vary with changes of the body; the extent of the field perceived increases with growth in the variety and scope of our organic interests. Above all, perception is primarily a fact of action, not of cognition.

In making this summary I have tried to leave out of account considerations which would tell one way or another as respects the double analysis of perception to which I referred above, making my account as neutral as may be. The account must now be complicated by referring to the considerations slurred over. In the first place, the fact must be emphasized that in Bergson's professed view (that which leads in the end to invidious contrast with true knowledge of reality) the change from the total world to the perceived part is merely quantitative; it is *merely* a diminution, a subtraction. The relation is just and only that of part and whole. "There is nothing positive here, nothing added to the image [object], nothing new. The objects merely abandon something of their real action."<sup>7</sup> Perception "creates nothing; its office, on the contrary, is to eliminate from the totality of images [objects] all those on which I can have no hold, and then, from each of those which I can retain, all that does not concern the needs of the image [object] which I call my body."<sup>8</sup> This notion of sheer diminution and elimination of most of the parts and aspects of a whole supplies the official definition of pure perception: "a vision of matter both immediate and instantaneous;<sup>9</sup> an uninterrupted series of instantaneous visions, which would be a part of things rather than of ourselves."<sup>10</sup>

<sup>6</sup> *Ibid.*, pages 28-29.

<sup>7</sup> *Ibid.*, page 30. The omitted half of the last sentence will be noted later.

<sup>8</sup> *Ibid.*, page 304.

<sup>9</sup> *Ibid.*, page 26.

<sup>10</sup> *Ibid.*, page 69. The reader familiar with the doctrine of space and time

The position that seems inconsistent with this one might be arrived at deductively from the stress laid, in the definition of perception, upon indeterminateness of action: upon the operative presence of genuine possibilities. Consider such a statement as the following: "Is not the growing richness of this perception likely to symbolize the wider range of indetermination left to the choice of the living being in its conduct with things? Let us start, then, from this indetermination as from the true principle, and try whether we can not deduce from it the possibility and even the necessity, of conscious perception. . . . The more immediate the reaction is compelled to be, the more must perception resemble a mere contact; and the complete process of perception and of reaction can then hardly be distinguished from a mechanical impulsion followed by a necessary movement. But in the measure that the reaction becomes more uncertain, and allows more room for suspense, does the distance increase at which the animal is sensible of the action of that which interests it. . . . The degree of independence of which a living being is master, or, as we shall say, the zone of indetermination which surrounds its activity, allows, then, of an *a priori* estimate of the number and distance of the things with which it is in relation. . . . So that we can formulate this law: *perception is master of space in the exact measure in which action is master of time.*"<sup>11</sup> The passage is quoted because of its statement of the central position of indeterminate action. The explicit reference (in the last sentence) to time suggests what I regard as the true doctrine, but a careful reading shows that this reference can not be taken as an assertion of that conclusion. On the contrary, Bergson evidently means that the indeterminateness only acts as a sort of negative condition, a condition *sine qua non*, to throw into relief those objects which have a possible concern for the indeterminate action. As he says elsewhere, it operates "to filter through us that action of external things which is real, in order to arrest and retain that which is virtual."<sup>12</sup> Again the effect is spoken of as one of disassociation, of disengaging.<sup>13</sup> The objects "detach from themselves that which we have arrested on the way, that which we are capable of influencing."<sup>14</sup> He speaks of indetermination acting as a sort of mirror which brings about an in Bergson does not need to be reminded that perception as an *instantaneous* section (non-temporal, non-durational) in an instantaneously complete field inevitably aligns perception with matter to the exclusion of time, mind, and reality as it would be envisaged from within.

<sup>11</sup> "Matter and Memory," pages 21, 22, 23. It is perhaps superfluous to multiply references, but see also pages 28, 29, 35, 37, 67, 68.

<sup>12</sup> *Ibid.*, page 309.

<sup>13</sup> *Ibid.*, page 41.

<sup>14</sup> *Ibid.*, page 29.



apparent reflection of surrounding objects upon themselves.<sup>15</sup> Again, the body "indicates the parts and aspects of matter on which we can lay hold: our perception which exactly measures our virtual action on things thus limits itself to the objects which actually influence our organs and prepare our movements."<sup>16</sup>

All such statements but emphasize the doctrine of mere subtraction, of diminution, as the essence of the act of perception. And if I now quote some passages which seem to have a contrary sense, it is not because I attach any great importance to what may be casual verbal inconsistencies, but because the passages bring to the front a contrasting notion of the facts themselves. The part of the sentence that was omitted in our earlier quotation after saying that objects merely abandon something of their real action "in order to manifest their virtual action" reads: "that is, in the main *the eventual action of the living being upon them.*" (Italics mine.) To the same effect he says (p. 59) around my body "is grouped the representation, *i. e.*, its [the body's] *eventual* influence upon the others [objects]." So (p. 68) perception is said to "express and measure the power of action in the living being, the indetermination of the movement or of the action *which will follow upon the receipt of the stimulus.*" (Italics mine.) Again, "perception consists in detaching, from the totality of objects, the possible action of my body from them." Most significant of all, perhaps, is the following: "Perception, understood, as we understand it, measures *our possible action upon things, and thereby, inversely, the possible action of things upon us.*"<sup>17</sup>

As I have just said, I shall try not to attach undue importance to the mere wording of these passages. It is easy to substitute for the phrase, "bodies upon which we may act," the other phrase, "our possible action upon bodies," and yet *mean* the same thing, verbally opposed as are the two phrases, especially as the idea that perception "measures" our possible action upon things seems to afford a connecting link. But the verbal opposition may be used to suggest that there follows from Bergson's theory of the dependence of perception upon indeterminateness quite another view of the perceived subject-matter than that of quantitative elimination. If we allow our mind to play freely with the conception that perceived objects present our *eventual* action upon the world, or designate our possible actions upon the environment, we are brought to a notion of complication, of qualitative alteration. For the only way in which objects could

<sup>15</sup> *Ibid.*, pages 29 and 46.

<sup>16</sup> *Ibid.*, page 232. Compare "It eliminates from the totality of objects all those on which I can have no hold." *Ibid.*, page 304.

<sup>17</sup> *Ibid.*, page 57. Italics mine.

conceivably designate our future actions would be by holding up to view the objective effects of those actions; that is to say, presenting the prior environment as it will be when modified by our reactions upon it. Perception would then be anticipatory, prognostic; it would exhibit to us in advance the consequences of our possible actions. It would thereby facilitate a choice as respects them, since the act of appreciating in advance the consequences that are to accrue from incipient activities would surely affect our final action.

So far as the *subject-matter* of perception is concerned, we are led to substitute for a material cut out from an instantaneous field, a material that designates the effects of our possible actions. *What* we perceive, in other words, is not just the material upon which we *may* act, but material which reflects back to us the consequences of our acting upon it this way or that. So far as the *act* of perception is concerned, we are led to substitute an act of choosing for an act of accomplished choice. Perception is not an instantaneous act of carving out a field through suppressing its real influences and permitting its virtual ones to show, but is a process of determining the indeterminate.

So far we have, however, simply two contrasting positions placed side by side. What are the grounds for preferring one view to the other? I shall first take up the formal or dialectic analysis of the elements of the situation as Bergson describes them, and then consider his account of perception as choice, closing with his account of the place of the brain in the act of perception.

## II

I think it can be shown that the idea of perception as bare instantaneous outstanding of part of an instantaneous larger world is supported only by a rapid alternation between the two conceptions of real and of possible action; and that the moment we hold these two conceptions together in a way that will meet the requirements of the situation we are bound to pass over to the other idea of perception, the one involving a qualitative change of antecedents in the direction of their possible consequences.

The difficulty in Bergson's professed account may perhaps be suggested by the following passage: "If living beings are just centers of indetermination . . . we can conceive that their *mere presence* is equivalent to the suppression of all those parts of objects in which their functions find no interest."<sup>18</sup> But can we conceive anything of the kind, even if we allow our imagination the most generous leeway? We seem to be caught in a dilemma. Either the living bodies

<sup>18</sup> *Ibid.*, page 28. Italics mine.



are engaged in *no* action, are *merely* present; or else they are really acting. If the former is the case, then no influence is exercised upon the environment, not even a suppressive or relinquishing one. If the latter, the action must modify the bodies upon which it is exercised. We get either less or more than abandonment. Does it not seem *a priori* probable that the idea of perception as the outcome of a sort of purely negative action is but a half-way station between the notion of no perception at all and of perception as an environment modified through a characteristic response of the living body? For we *can* conceive that some act of the organism in accord with its peculiar interests, some gesture, or active attitude, might *accentuate* the parts of the world upon which the organism is interested to act, and that this stress might be equivalent to their perception.

Perhaps, however, our hard and fast dilemma is due to our ignoring just the points upon which Bergson insists: indeterminateness and possibilities. But the dilemma appears to repeat itself. Are the possible actions of the organism *merely* possible? Even if we admit (what seems to me inadmissible) that *mere* potentiality is an intelligible conception, we are still far from seeing how it could exercise even a suppressive influence. But if possible activities mean (as it seems to me they must mean to have a meaning) a peculiar quality of real actions, then we get real influence indeed, but something more and other than sheer elimination and suppression. If we look at it from the side of indetermination, the logic is not changed. Either indetermination and uncertainty mean a qualitatively new type of action, or they mean the total absence of action.

Perhaps I can now make clearer what I meant by Bergson's alternation between real and possible action. The act of carving out a portion of the entire field must be a real act. It is complete at one stroke, all at once. This by itself gives a sheer quantitative limitation. But this act of eliminative selection is still to be accounted for. So we have recourse to the presence of possible actions. What is let go is that upon which the organism can not possibly act; what is held to is that upon which it can act. Bergson thus strings the two conceptions one after the other in this way: *Logically*, possibility antecedes (that is, implies and requires) an act of selection; *really*, the act of selection precedes the actualization of possible actions, furnishing the field upon which they are to operate. Bergson seems to vibrate between the real action of possibilities, and the possible action of real (but future) actualities. The former designates an act that is, however, more than instantaneous, that is a process; and that does more than cut out, that qualifies the material upon which it operates, so as to prepare the way for a subsequent action.

The latter expresses something that will be instantaneous when it comes and that may be conceived (perhaps) as having only an effect of diminution, but that, unfortunately, is not present to have any effect at all, save as, to meet the requirements of the situation, it suddenly changes to a present real action of possibilities, that is, to a distinctive *quality* of selective action. The same dialectic operates (as we shall shortly see) upon the side of the environment. On the one hand, the perceived subject-matter indicates *possible* action upon the organism, something which has been acquired in the act of perception. But on the other hand, as the perceived subject-matter is an instantaneous section out of a homogeneous totality, any possibilities which the subject-matter can present must have been already in its possession. But as this contradicts the notion of complete presence, we are again forced to the conception of possibility as something conferred by the organism.

Bergson seems to recognize that the bare inoperative presence of potentialities (the conception which seems to provide a middle term between possible future real actions and present real action of possibilities) will not, after all, suffice to account even for a diminution of the physical environment. We somehow *arrest* the influences proceeding from those bodies that we are capable of acting upon. This act of arrest receives some positive characterization in the following passage. After stating that physical bodies act and react mutually by all their elements, he goes on to say: "Suppose, on the contrary, that they encounter somewhere a certain spontaneity of reaction: their action is in so diminished, and this diminution of their action is just the representation which we have of them."<sup>19</sup> Here we have the most explicit statement that I have been able to find of the *modus operandi* of the act of suppression. It is treated as a real act, and in so far meets the necessities of the case, while at the same time spontaneity is suggestive of possibilities. We will admit, without caviling, that spontaneity of action describes a peculiar type of action, one which, instead of following the physical principle of equal and opposite reaction, merely diminishes the real efficacy of the influences that it encounters. But even so, we have only a *real* action of a peculiar unusual sort in this reduction of the efficacy of the objects. If, however, spontaneity means that the organic act is already charged with potentiality, its manifestation might *convert* the energy of the environment into a form that would involve the inhibition, for the time being, of its usual physical mode of efficacy. But suppression *through conversion into a different form* is a radically different thing from suppression by mere diminution. This latter might, by lowering the resistance that it would otherwise

<sup>19</sup> *Ibid.*, page 29.



encounter, give a better chance for some subsequent organic activity to express itself, but this would be the limit of its significance. Such a state of affairs would involve no indetermination, and there is no sense in calling the subsequent action a possible action. It is simply a postponed action, bound to occur if the spontaneous action intervenes. It is simply the real future action of which we have spoken. In short, it does not fulfill the conditions for the emergence of the unperceived into the perceived.

Upon occasion, however, Bergson states the situation differently. As stated in a passage already quoted, we allow "to filter through us that action of external things which is real, in order to arrest and retain that which is virtual: this virtual action of things upon our body and of our body is our perception itself."<sup>20</sup> I pass over the question of how this view is to be reconciled with the statements to the effect that perception "limits itself to the objects which *actually influence our organs* and prepare our movements." The point to notice is that virtual or potential action is transferred from our body and made a property of the objects, the peculiarity of our action now being that it isolates this property of the objects. This point of view is even more explicit in such a statement as the following: "Representation is there (that is, in the universe), but always virtual—being neutralized at the very moment when it might become actual, by the obligation to continue itself and to lose itself in something else. To obtain the conversion from the virtual to the actual it would be necessary, not to throw more light upon the object, but on the contrary to obscure some of its aspects, to diminish it by the greater part of itself, so that the remainder, instead of being encased in its surroundings as a *thing*, should detach itself from them as a *picture*."<sup>21</sup> The extraordinary nature of this passage stands out if we recall that the express definition of the physical is complete actuality, total lack of virtuality. Even more significant, however, than this contradiction is, for our present problem, the complete shift of the point of view. Potentiality to begin with was wholly on the side of the living being, just as actuality was the essence of the world. But since any act of elimination, of diminution, affected by the living being would obviously be a real act of a certain kind, the exigencies of the logic require that potentiality be attributed to the object, the real action of the organic being now treated merely as an occasion for the display of this potentiality. But whenever the exigencies of the argument require reference to the indeterminateness of the action of *living* beings, to mark them off from non-living

<sup>20</sup> *Ibid.*, page 309.

<sup>21</sup> *Ibid.*, page 28.

things, potentiality retires from the object to take up again its exclusive residence in the living being.<sup>22</sup>

Quite likely the reader has been brought to a feeling that we are not any longer considering perception at all, but are engaged simply in performing dialectic variations on the themes of actuality and possibility, indeterminateness and determinateness. Let us then attempt to translate the conceptions over into their factual equivalents. I think that the essential of Bergson's view may be correctly stated about as follows: The indeterminateness of the action of a living being serves to delay its motor responses. This delay gives room for deliberation and choice. It supplies the opportunity for the conscious selection of a determinate choice—for freedom of action. But the delay of motor response also signifies something from the standpoint of the world: namely, a division within it. Certain of its movements are still continued through and beyond the organism; with respect to them, there is no delaying response. Consequently those other movements of the world to which response is postponed are sundered; they are thrown into relief, cut out. Moreover, it will be noted that the material that thus stands out presents just those movements upon which the possible, or postponed, responses of the organism may take effect. Material thus cut out and having such reference to subsequent organic actions constitutes pure perception.

<sup>22</sup> It is worth considering whether this dialectic does not throw light upon Bergson's panpsychic idealism. It seems as if his final attribution of panpsychic quality to matter were simply a generalization, once for all, of the circular logic we have just noticed. If (a) we define perception as a conscious representation on the basis of potentiality, and then (b) fall back on the inherent potentiality of the universe to account for the diminution of the field characteristic of the conscious representation, it follows as matter of course that the universe itself is already consciousness of some sort (*cf.* page 313). "No doubt also the material universe itself, defined as the totality of images, is a kind of consciousness, a consciousness in which everything compensates and neutralizes everything else, a consciousness of which all the potential parts, balancing each other by a reaction which is always equal to the action, reciprocally hinder each other from standing out." Here we have, I think, the key to his entire treatment. Let anything throw the whole out of balance, and a piece of this total consciousness stands out. The cut-out portion is a *conscious* representation just because the whole from which it is cut is conscious. But why is the whole called consciousness? Simply because perception is conscious and perception is a part cut out from a homogeneous whole. But there must be something to effect the cutting out; the whole does not cut itself up. Hence the need of referring to the differential presence of the organism as a center of indeterminate possibilities. But to stay by this standpoint would connect all the eulogistic traits that are employed in designating philosophic intuition with crises of organic activity. Hence potentiality and freedom are transferred back to the whole, which accordingly makes matter into consciousness once more.



The ingenuity of this account is indubitable. For my own part, I think it gives the elements of a true account. But it is possible to arrange these elements quite differently and thereby reach quite a different result. The revised account reads somewhat like this. External movements are involved in the activities of an organism. If and in so far as these activities are indeterminate, there is neither a total, or adequate stimulus in the movements, nor an adequate total response by the organism. Adequate stimulation and adequate response are both delayed (the delay is an effect, not a cause or condition, as it seems to be in Bergson's account). The partial responses, however, are neither merely dispersed miscellaneously upon the environment, nor are they merely possible. They are directed upon the partial stimuli so as to *convert* them into a single coordinated stimulus. Then a total response of the organism follows. This functional transformation of the environment under conditions of uncertain action into conditions for determining an appropriate organic response constitutes perception.

What is the difference between the two views? According to the first, perception is a stimulus, ready-made and complete. According to the second, it is the operation of *constituting* a stimulus. According to the first, the object or given stimulus merely sets a problem, a question, and the process of finding its appropriate answer or response resides wholly with the organism. According to the second, the stimulus or perceived object is a part of the process of determining the response; nay, in its growing completeness, it is the determining of the response. As soon as an integral and clear-cut object stands out, then the response is decided, and the only intelligent way of choosing the response is by forming its stimulus. Meantime organic responses have not been postponed; a variety of them are going on, by means of which the environing conditions are given the status of a stimulus. The change effected in the environment by the final total organic act is just a consummation of the partial changes effected all through the process of perception by the partial reactions that finally determine a clear-cut object of perception. This means that the perceived subject-matter at every point indicates a response that *has* taken effect with reference to its character in determining *further* response. It exhibits what the organism *has* done, but exhibits it with the qualities that attach to it as part of the process of determining what the organism is *to do*. If at any point we let go of the thread of the process of the organism's determining its own eventual total response through determining the stimulus to that response by a series of partial responses, we are lost.

## III

We have now to consider the same situation, but this time from the standpoint of the act of choice concerned in it. Our previous discussion prepares us for the points at issue. We may anticipate an alternation between two conceptions, introducing into a choice alleged to be complete in an instantaneous act, traits which belong to a choice among future possible acts. The circular reasoning will disappear, we may also anticipate, as soon as substituted for the alternation between a present choice and a future choice, each of which owes its character to the other, a temporal act of choice, that is, a *choosing*.

Bergson's nominal theory is that the selective elimination is itself a choice. "Our consciousness only attains to certain parts and certain aspects of those parts. Consciousness—in regard to external perception—consists in just this choice."<sup>23</sup> Such a choice seems, however, exactly like a "choice" exhibited in the selective or differential reaction of a metal to an acid. The metal also "picks out" the form of energy upon which it can act and which can act upon it.<sup>24</sup> Permit, however, the phrase to pass as a metaphor; or permit, if you will, the metaphor to pass as a fact. There is here no indetermination of any kind; nothing undecided and no need of any subsequent choosing. The choice being complete, the reaction of the organism

<sup>23</sup> *Ibid.*, page 31; cf. page 304: "Perception appears as only a choice."

<sup>24</sup> Considerations of space compel me to omit many matters of interest which are relevant to the topic. But I can not forbear here a word of reference to Bergson's earlier mode of statement of the point at issue between idealism and realism. The reader will recall that he sets out from a statement of the two ways in which objects—called, for convenience, "images"—may vary. In one system each varies according to all the influences brought to bear upon it; in the other, all vary according to the action of *one privileged* object, the organic body. The former system describes the physical world; the latter, the perceived world. But *some* of his descriptions of the peculiarities of the latter surely refer as well to the traits of the former. Thus "I note that the size, shape, even the color of external objects is modified according as my body approaches or recedes from them; that the strength of an odor, the intensity of a sound, increases or decreases with distance" (page 6). Surely, however, the intensity of an influence exercised by any physical body upon another physical body varies with distance. Shape and size, regarded as the angular portion of the total field subtended, vary with distance in the same physical way; so does color with the change in intensity of light effected by distance. Thus choice, as here defined, is only a name for the *specific* action one body exercises upon others. But in his final formula is stated the *peculiar* kind of a change in the physical system effected by the organic body in perception: things not merely change with its changes, but change so as to reflect its "*eventual* action" (p. 13). Here, indeed, is a genuine criterion of distinction; and our further discussion of choice is simply a development of the consequences of introducing reference to *eventual* action into its nature.



follows at once, or as soon as its time comes. But now there enters upon the scene a present effect attributed to future possible actions. There are many possible acts lying in wait. Otherwise the choice, the relinquishing and the standing out, would not have occurred. Somehow, therefore, the perceived object sketches and measures the many possible acts among which a choice has to be made before a determinate response can occur. The circle is before us. The present complete choice makes possible a presentation of future possibilities; the future possible acts operate to define the peculiar nature of the present act.

The two sides are brought together in the consideration that the perceived object reflects or mirrors our state of suspense, of hesitation, the conditions with respect to which we have to choose. It is unnecessary to go over the ground already traversed; if I have not succeeded in laying bare the circular reason nothing I can add now will be of any avail. But we may note two consequences applicable to the situation as it takes form with respect to choice. Since the unperceived world is, by definition, one that is completely actual in itself—since, in other words, the world as physical already has its mind all made up—this view implies the introduction into the perceived world of a quality contradictory to the conception of a mere quantitative selection. Choice, even though instantaneously complete choice, has done something positive after all. But of greater moment is the fact that a subject-matter of perception that merely mirrors our own hesitation is of no use in resolving that hesitation. If we insist upon looking at it as marking a choice, the choice is simply to be undecided as to a choice. The perceived object just gives back to us, indifferently, sullenly, unconstructively, our own need of a choice. Such a perception could never participate in the “office of *ensuring our effective action* on the object present.”<sup>25</sup> Our later choice among possible actions will then be as blind and random as if perception had never intervened. What is the likelihood of an act so chosen being effective, appropriate? Better had it been to have remained in the frying-pan of complete mechanism than to have jumped into the fire of purely random action.<sup>26</sup>

<sup>25</sup> *Ibid.*, page 84. Italics mine. In its context the quotation refers to the rôle of the cerebral mechanism in perception, but, by hypothesis, it must be capable of transfer, without injustice to the logic, to the perception as the chosen object.

<sup>26</sup> It may be objected that we have here ignored the distinction between pure and concrete perception and the need of memory to effect the change of the former into the latter, and thereby have treated the essence of the account of pure perception as if it were a difficulty in the account. Pure perception, we may be told, does present us with exactly the indeterminateness which reflects our own hesitation. It gives the field with respect to which choice has to be

Note how the difficulties disappear if we regard the act of perceiving as a temporal act, as *choosing*. Follow out literally the idea that our reactions are *uncertain*, not merely "allowing room for suspense," but *involving* suspense.<sup>27</sup>

Since any reactions that we actually make must, no matter how charged they are with uncertainty, modify the environment upon which they exercised,<sup>28</sup> we shall have as the counterpart of the act a field undergoing determination. So far as reactions are dominantly uncertain we shall expect, indeed, to find the subject-matter vague and confused—and we do so find it. But an indefinite reaction may have a certain focusing that will further define its subject-matter so that it will afford the stimulus to a more effective subsequent response, and so on till the perceived matter gets outline and clear-

made. It sets a question to which the motor response has to find a reply (see, for example, page 41). What guides the motor response in finding the reply is not perception but memory. "Though the function of living bodies is to receive stimulations in order to elaborate them into unforeseen reactions, still the choice of the reaction can not be the work of chance. This choice is likely to be inspired by *past experience*, and the reaction does not take place without an appeal to the *memories* which analogous situations may have left behind them. The indetermination of acts to be accomplished requires, then, if it is not to be confounded with pure caprice, the *preservation* of the images perceived" (page 69, italics mine; see also pages 103 and 114). I have no doubt that this quotation represents Bergson's view; perception puts the question, and only puts the question; memory helps the motor response to find the effective and appropriate answer. Even though my whole argument seems left hanging in the air with its underpinning knocked out, I must postpone consideration of this point of view till an explicit discussion of memory is undertaken. But certain indications may be suggested at this point. The assumption leaves totally unexplained the sudden transformation of a physical world totally devoid of virtuality (see pages 80 and 81 for the statement that if the physical world had virtuality it might be the cause of consciousness) into a world that is as perceived nothing but potentialities. Matter as perceived is now pure freedom; mind as memory is pure determination. But more significant to the present problem is the recognition that action based on pure perception is a matter of "chance," of "pure caprice." If such be the case, how can the object of pure perception provide any clue to the recall of the proper memory? Why is not that a work of chance, of caprice? But most significant of all is the preestablished harmony set up between perception and memory, space and time, matter and mind, by this view that perception sets the problem to which an alleged radically different power uniquely supplies the answer. For like all preestablished harmonies it testifies to the probability of a prior artificial separation.

<sup>27</sup> *Ibid.*, page 22.

<sup>28</sup> It will be interesting to watch the logic of those neo-realists who connect the act of perception with the organism instead of with "consciousness" when they develop their views in detail. Professor Montague's theory of potential energy as the physical side of consciousness seems to avoid the snares, but if I mistake not, potential energy which is all located at one spot instead of marking a stress in a larger field alleges an unprecedented physical fact.



ness. If, however, the reactions continue wholly and only indeterminate, the confusion of the subject-matter will remain, and, correspondingly, the indeterminateness of response will persist. The only perception that can be a useful part of the act of choosing a useful response will be one that exhibits the effects of responses already performed in such a way as to provide continuously improving stimuli for subsequent responses. The only way in which a living being with indeterminate possibilities of action can be intelligently helped to their determination by perceived objects is by having perceived objects serve as anticipations of the consequences of the realization of this or that possibility. And only through a presentation in anticipation of the objective consequences of a possible action could an organism be guided to a choice of actions that would be anything except either mechanical or purely arbitrary. Perception can prepare our further movements effectively and appropriately in the degree in which it continuously provides the stimuli for them. In words of Bergson's own which can not be bettered: "That which constitutes our pure perception is our dawning action, in so far as it is prefigured in those images [namely, objects]. The *actuality* of our perception thus lies in its *activity*, in the movements which prolong it."<sup>29</sup> Take this passage seriously and literally, and you have the precise view of perception here contended for. It is not a choice accomplished all at once, but is a process of choosing. The possible responses involved are not merely postponed, but are operative in the quality of present sensori-motor responses. The perceived subject-matter is not simply a manifestation of conditions antecedent to the organic responses, but is their transformation in the direction of further action.

#### IV

In the references which we have made in this discussion to sensori-motor responses we have already implicitly trenched upon our last topic: the body, as implicated in perception. Just what part does the brain have, in the act of perception? The reader need not be reminded how central is this aspect of the matter for Bergson. From one standpoint, his entire discussion of perception is intended as a demonstration that the brain is not the cause of conscious representations, but is, and is solely, the organ of a certain kind of action. The undoubted correspondence between the *facts* of the subject-matter of perception (the conscious representations) and brain events is to be explained, not by invoking materialism or psycho-physical parallelism (both of which depend upon regarding perception as a case of knowledge instead of action), but by showing

<sup>29</sup> *Ibid.*, page 84. Italics in the original.

that both the conscious representations and the brain states are functions of nascent or potential action. The "representations" designate action on the side of its material, the environing conditions; the brain movements designate it on the side of the organs intimately involved in it.<sup>30</sup> The correspondence is that of material and tool of action, like that of soil and plow with reference to the act of sowing seed.

The reader is invited to traverse the field for a third and last time. We have, once more, to see how Bergson provides all the factors of an adequate statement; how he places them in temporal alternation to each other and thereby renders them incapable of performing the office attributed to them; and how the account stands when it is corrected by making the factors of actuality and indeterminateness contemporaneous instead of successive.

The nervous system, being a physical structure, is a medium of the transmission of movements, and is only that. Consequently any correspondence or correlation that can be made out between the brain processes and the object of conscious perception (the so-called conscious content or representation) must be in terms of correspondence of modes of movement. The nervous process concerned in the act of perception must be describable, in other words, in a way analogous to the peculiar type of action that is exhibited in the perceived object. The marks that distinguish cortical action from the so-called reflex action of the lower structures furnish the clew. In the latter, the incoming movement is shunted at once into a return movement. In the former the paths of communication are immensely multiplied and the nature of transmission correspondingly complicated. The same incoming stimulus has many outgoing paths open to it. Thus the brain has a double office. On the one hand, it provides a mechanism by which peripheral disturbance, upon reaching the spinal cord instead of being deflected into its immediate reflex track, may be put in flexible connection with other motor mechanisms of the cord. The cortical cells termed sensory "allow the stimulation received to reach *at will* this or that motor mechanism of the spinal cord, and *so to choose* its effect." "On the other hand, as a great multitude of motor tracks can open simultaneously in this substance to one and the same excitation from the periphery, this disturbance may subdivide to any extent, and consequently dissipate itself in innumerable motor reactions which are merely nascent. Hence the office of the brain is sometimes to conduct the movement received to a *chosen* organ of reaction, and sometimes to open to this movement the totality of the motor tracks,

<sup>30</sup> *Ibid.*, pages 35, 309.



so that it may manifest there all the potential reactions with which it is charged, and may divide and so disperse. . . . The nervous elements. . . do but indicate a number of possible actions at once, or organize one of them.’<sup>31</sup>

With respect to the matter under discussion, the significant element is the statement that *sometimes* the brain has one office—allowing a *chosen* reaction to proceed; and *sometimes* another office—to permit its dispersal into a number of channels. The same duality is repeated in the statement that the brain indicates a number of possible reactions *or* organizes one of them. The alternation already considered here presents itself overtly and externally. And the dilemma is presented in an equally definite way. So far as there is choice, organization of a fixed path, there is just a single actual response. So far as there is dispersal in many paths, there are many actual responses. In neither case does possibility, or choice among possibilities, show its face. At the same time, there is indicated the true state of affairs: the brain expresses the operation of organizing one mode of total response *out of* a number of conflicting and partial responses.

We can of course imagine that the dispersal of energy among many paths is so extensive as to be equivalent to a practical inhibition, for the time being, of any definite action upon the environment. For the time being, the expenditure of energy (barring what leaks through) is intra-organic, or even, anticipating the dispersion into sensori-motor tracks to be mentioned shortly, intracerebral. We might identify this temporary inhibition of overt response with the gap in the instantaneously completed transmission which throws part of the material world into relief. But this identification proves too much. If the dispersal is into *motor* tracks, these discharges are just so *many* overt and disconnected acts in an incipient or nascent condition.<sup>32</sup> They are not the incipency of one *appropriate* act. No provision is made, none is suggested, for recalling them so that in place of the multitude of dispersive tendencies there may be one concentrated act. With reference to the performance of this one act—that alone could meet any need of life—these dispersive activities are just so much waste energy. They sketch, not what we are going to do, but what we *are* doing futilely.

The single path opened may, however, be said to represent a choice of the effect to be attained if it is regarded as a process of coordinating, for greater efficiency, a number of competing partial tendencies. Similarly, these tendencies may be said to represent possible incipi-

<sup>31</sup> *Ibid.*, page 20.

<sup>32</sup> Compare what was said earlier about the reality of future acts, page 655, above.

ent acts (possible paths of choice) if they are brought into contemporary, not alternating, connection with seeking and finding the single most effective line of discharge. Completely real and really complete just as they are when their dispersive character is isolated, they are incipient acts with reference to a unity of organic attitude which they take part in establishing.

The method of realization of the contemporary relation of discovering a unified response to a multitude of dispersive tendencies is incidentally mentioned in Bergson's allusion to the intervention of the "cortical cells termed sensory." All direct motor shunting, whether unified or dispersive, is of the reflex type. Only because of the complication of a situation by the continuation of an incoming stimulus to *sensori-motor* areas in intricate interconnection with one another, can there be that suspension and choosing which constitute the act of perception. This act is as genuinely motor as eating, walking, driving a nail, or firing combustibles, and involves a like change in the environment upon which it takes effect.<sup>33</sup> But its motor peculiarity is that it takes effect not in such acts as eating, walking, driving, firing, but in such acts as tasting, seeing, touching. The motor response, as long as the act of perception is continued, is directed to *moving* the sense-organs so as to secure and perfect a stimulus for a complete organic readjustment—an attitude of the organism as a whole. This is made possible precisely in so far as the incoming disturbance is "dispersed" not into motor tracks, but into *sensori-motor* areas.<sup>34</sup> In the reciprocal interactions of these *sensori-motor* areas (their reciprocal stimulation of one another) is found the mechanism of coordinating a number of present but ineffectual motor tendencies into an effective but future response.

Let us suppose the disturbance reaches the brain by way of the visual organ. If directly discharged back to the motor apparatus of the eyes this results not in a perception, but in an eye-movement. But simultaneously with this reaction there is also a dispersal into the areas connected with tasting, handling, and touching. Each of these structures also initiates an incidental reflex discharge. But this is

<sup>33</sup> Not, of course, that the act is, as such, a change of the *perception* (that would involve us in the *regressus ad infinitum* of which the neo-realists have rightly made so much), but that perception is the change of the environment effected by the motor phase.

<sup>34</sup> It is doubly significant that Bergson alludes to the sensory elements involved without in any way amplifying the allusion. The allusion is necessary in order to supply the basis for the uncertain character of the situation in which perception occurs, and for explanation of its inherent future reference. It is not amplified because the whole explanation of sensory features in Bergson's scheme is found in memory. "Memory" is thus again found implicated in the very heart of pure perception.



not all; there is also a cross-discharge between these cortical centers. No one of these partial motor discharges can become complete, and so dictate, as it were, the total direction of organic activity until it has been coordinated with the others. The fulfillment of, say, eating, depends upon a prior act of handling, this upon one of reaching, and this upon one of seeing; while the act of seeing necessary to stimulate the others to appropriate execution can not occur save as it, in turn, is duly stimulated by the other tendencies to action. Here is a state of inhibition. The various tendencies wait upon one another and they also get in one another's way. The sensori-motor apparatus provides not only the conditions of this circle, but also the way out of it.

How can this be? It is clear that if, under the condition supposed, the act of seeing were overtly complete it would *then* furnish the needed stimulus of reaching, this to handling and so on. The *sensory* aspect of the apparatus is, in its nature, a supplying of this condition. The excitation of the optical area introduces the *quality* of seeing connected (through the simultaneous excitation of the areas of reaching, tasting, and handling) with the specific *qualities* of the other acts. The *quality* of movement, or action, supplied by the sensory aspect, is, in effect, an anticipation of the result of the act when overtly performed. With respect to determining the needed stimulus, it is *as if* the overt responses in question had been actually executed.<sup>35</sup>

The reader may regard this account as speculative to any degree which he pleases. Personally I think it outlines the main features of the act of perceiving. But that is neither here nor there. The question is whether or no it furnishes the terms of an account which shall avoid the dilemma in which Bergson's account is held captive, while remaining true to the three requirements of his method of definition: namely, that the brain be treated as an organ for receiving and communicating motion; that indeterminateness be introduced as a specifying feature; that brain processes correspond to subject-matter perceived, as an organ of action corresponds to the material of its action.

Our analysis of Bergson's account is now completed. The reader will decide for himself how far we have been successful in showing that his professed account of perception depends upon alternation between two factors which, if they are involved at all, must operate contemporaneously, not alternately. He will judge for himself of the value of the account of perception obtained when these factors are treated as contemporaneously operative. I may however be pardoned

<sup>35</sup> Here we find the *modus operandi* presupposed in our account of perception as a process, of obtaining, by partial reactions to partial stimuli, the determinate stimulus which will evoke a determinate response. See *ante*, p. 659.

for reminding him that if the argument has been successful in its two purposes, the traits that are alleged to demarcate perception and the objective material with which it deals from a reality marked by genuine presence of temporal considerations have disappeared. Perception is a temporal process: not merely in the sense that an act of perception takes time, but in the profounder sense that temporal considerations are implicated in it whether it be taken as an act or as subject-matter. If such be the case, Bergson's whole theory of time, of memory, of mind and of life as things inherently sundered from organic action needs revision.

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## DISCUSSION

### OPPOSITION AND THE SYLLOGISM

PROFESSOR DE LAGUNA sums up his discussion of the syllogism in the formula<sup>1</sup>

$$- [(S \cdot P) \cdot - (S \cdot -M) \cdot - (P \cdot M)].$$

According to a letter to the JOURNAL<sup>2</sup> he "learned the formula from another source" [than Mrs. Franklin's paper]. It may not be amiss to call attention to the fact that, whilst Mrs. Franklin's "inconsistent triad"<sup>3</sup> is valid, the above formula, whoever is responsible for it, is *invalid* if *S*, *P*, *M* denote *classes*, i. e., in the case in which it ordinarily would be applied, the categorical syllogism. According to Professor de Laguna his formula expresses both the "general principles of the categorical and the hypothetical syllogism," "if we use letters to denote ambiguously either classes or propositions."<sup>4</sup> But, if the letters denote *classes* his formula does not represent any proposition whatever, but merely a *class*. This objection is not valid against Mrs. Franklin's proposition itself, nor against any of the familiar statements of it; e. g.,<sup>5</sup>

$$(a \supset b)(\bar{b} \supset c)(c \vee a) \supset$$

is valid whether *a*, *b*, *c*, denote classes or propositions.

Professor De Laguna's failure to distinguish between class and proposition is perhaps to be explained by his intention to denote by

<sup>1</sup> This JOURNAL, Vol. IX., page 400.

<sup>2</sup> *Ibid.*, Vol. IX., page 588.

<sup>3</sup> According to Mrs. Franklin (this JOURNAL, Vol. IX., page 583) this name is due to Professor Royce.

<sup>4</sup> *Loc. cit.*, page 400.

<sup>5</sup> "Studies in Logic," by members of the Johns Hopkins University, page 40.



the minus sign in front of the bracket the denial of the existence of a class. And therewith I come to the second point. The use of the minus sign, which goes back to the beginnings of the algebra of logic, is itself unobjectionable; though it was abandoned by the writers of the latter part of the nineteenth century, its use, in a modified form, has been revived by Whitehead and Russell in their "*Principia Mathematica*." I object, not to the minus sign itself, but to the confusion of two distinct fundamental ideas which are both denoted here by the same symbol. In the same formula, if  $P$  denotes a class " $\neg P$ " denotes here (1) the negative of  $P$ , and (2) the denial of the existence of  $P$ ; *e. g.*, "no  $S$  non- $M$  exists is symbolized by Professor De Laguna thus:

$$\neg [S \cdot \neg M]$$

where " $S \cdot \neg M$ " is the product of two classes, and therefore itself a class!

Such ambiguous use is, of course, against the very first principles of any symbolism whatsoever.

Mrs. Franklin's classical formula is sufficient to adjudge all syllogisms. Any attempt to reduce the moods of the syllogism to the "principle of opposition" might be considered a barren undertaking. Not so! Even if useless, it would still be of theoretical interest and a novelty. But, alas! the claim of the paper that "we deduced the principle of the syllogism"<sup>6</sup> is not substantiated, except by a very loose and unwarrantable use of the word "deduce." The principle from which Professor De Laguna *really* deduced his "principle of the syllogism" is not his "principle of opposition" but Peirce's "Theorem I.," referred to in Mrs. Franklin's paper, or the rules of "inserting and dropping terms,"<sup>7</sup> to which Professor De Laguna refers as "two principles of immediate inference."<sup>8</sup> The proof of this last contention can not very well be given without the use of the "algebra of logic"; and in that form it is part of Mrs. Franklin's admirable paper.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Le Langage et la Verbomanie; Essai de Psychologie Morbide.* OSSIP-LOURIÉ. Paris: Félix Alcan. 1912. Pp. 275.

This is a discursive treatise on the disease of talking too much. The author has previously written rather along literary than nosologic lines,

<sup>6</sup> *Loc. cit.*, page 400.

<sup>7</sup> Cf. "Studies in Logic," by members of the Johns Hopkins University, page 33.

<sup>8</sup> *Loc. cit.*, page 397.

and is one of those friends of the "Psychological Index" who write their names without initials. He is also a bit of a pessimist, even misogynist, to judge from the seventh chapter. He has some good ideas, which are entertainingly developed.

By way of introduction a fairly satisfactory account is given of the psychological processes to be supposed in the origin of language, the relation of language to thought, with a discussion of their lack of parallelism. The basal conception is of language as a delicate and complex mental function legitimately suited to particular social ends. To fail to limit it to its proper sphere in the psychic economy, putting it to loose and improper uses, is not without its dangers to the personality. The great emphasis laid hereon is the main characteristic of the volume. It is this which is termed "*verbomanie*," especially in the sense of an overdevelopment of the linguistic function. The psychiatrist would probably tend to regard these manifestations as symptomatic, but while the author occasionally uses the word in this sense, he seems more frequently to regard it as an independent disease, manifesting itself *par trop d'effets, complexes et contraires*. The clinical picture is consequently ill-defined, and probably includes many better-recognized disease forms that are partly characterized by disturbances—in the direction of hypertrophy—of the linguistic faculty. It is conceived of as an almost exclusively psychogenic condition, and doubtless justly so, so far as the content is concerned, though the symptoms of genuine *verbomanie* are scarcely so independent of originally unstable mental organization as the author seems to think.

The essential question is, then, if loose speaking, besides being a derivative of loose thinking, may not in turn react upon the intellectual faculty. Popularly, this is the opinion voiced in speaking of one carried away by his own eloquence. The clouding of adequate reaction by emotion is an elementary psychological principle, and in so far as the false use of language may arouse inappropriate emotional reactions, it may lead to inappropriate intellectual ones. The "argument by epithet" is well known politically, nor is the scientific investigator exempt from its pitfalls. A clever but suggestible worker, with a turn for rhetoric, may turn his own dialectics upon himself to the detriment of clear thinking. All this independently of a clinical conception of "*verbomanie*," of which the author has at least a clear enough idea to formulate a definite scheme for its management. In the matter of responsibility he places his *verbo-manias* between the "insane" and the normal, not considering that society can guard itself against them, *mais elle peut les combattre moralement et socialement*. Prophylactically, he desires more training in the precise employment of speech. The idea of "learning by doing," expressed by so many who approach educational questions from a psychopathological angle, we meet again here in the words, "*La transmission purement verbale d'un savoir, au lieu d'infuser des énergies aux auditeurs, les habitue à l'incapacité intellectuelle et à la phrasologie vide*," and otherwise. Therapeutically, "disciplinary silence" is the key-word, and the author voices a suggestion singularly like one in the "Modern Utopia" of H. G.



Wells, in which every member of a privileged class must annually pass a fixed number of days alone in immediate and elementary contact with natural forces.

Books are of four kinds; by clever people who know their subject, by clever people who do not, by stupid people who know their subject, and by stupid people who do not. The first are the most brilliant, the second the most suggestive, the third the most reliable, the fourth the most consoling. The present one is clever and to spare, but there are greater limitations on the other score. It is an "Essai de Psychologie Morbide," yet does not draw its references, of which there are many, from the best known contemporary sources, either on the philological or psychological side, and it is quite incoordinate with systematic psychopathology, so ought scarcely to be judged by psychiatric standards. On the grounds of suggestion and of literary quality, it is better justified in its graceful epigraph, *Vel taceas, vel meliora dic silentio.*

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## JOURNALS AND NEW BOOKS

MIND. April, 1912. *Relevance* (pp. 154-166): F. C. S. SCHILLER. - An analysis of the concept of relevance into the notion of the subjectivity, the selectiveness, the honesty, and the disputableness of the relevant. Application is made to logic, the sciences, and philosophy, with the result of a voluntaristic as opposed to intellectualistic conception of knowledge. *Representational Pragmatism* (pp. 167-181): DOUGLAS C. MACINTOSH. - Adopts a point of view intermediate between traditional intellectualism and current pragmatism combining the intellectual "proximate genus of truth (representation of reality)" and the pragmatic "specific difference (sufficiency for all practical purposes)." *The Ethical Significance of the Idea Theory*—(II.) (pp. 182-200): R. M. MACIVER. - An ethical interpretation of Plato's doctrine of ideas. Philosophy, for Plato, is explanation. Plato's main interest was ethical. Consequently the metaphysics of the Idea is the result of an ethical demand, and the theory of ideas comes as the expression of an ethical need. The Idea is identified with the Good and with Reality, all else is unreal. *"Matter and Memory"* (pp. 201-232): EDWARD DOUGLAS FAWCETT. - A rather detailed exposition with a criticism of the fundamental difficulties of M. Bergson's "Matter and Memory." The main force of criticism is directed against the Intuitionist method. Certain inconsistencies are pointed out between *Time and Free Will* and *Matter and Memory* centering chiefly around the problem of space. *Discussions: Thought and its Function* (pp. 233-237): ADDISON W. MOORE. - A reply by the author to Mr. Murray's review of *Pragmatism and its Critics*. *Dr. Alexander and the A Priori* (pp. 238-240): H. S. SHELTON. - Charges Dr. Alexander with a misconception of Spencer's view of the *a priori*. *Critical Notes: H. Richards, Platonica*: A. E. TAYLOR. E. E. C. JONES, *A New Law of Thought and its Logical Bearings*: F. C. S. SCHILLER. René Berthelot,

*Un Romantisme Utilitaire: Etude sur le Mouvement Pragmatiste*: F. C. S. SCHILLER. J. Welton, *The Psychology of Education*: W. H. WINCH. A. Müller, *Das Problem des absoluten Raumes und seine Beziehung zum allgemeinen Raumproblem*: P. E. B. JOURDAIN. *New Books. Philosophical Periodicals. Notes.*

Löwenberg, Dr. J. Hegel's Entwürfe zur Enzyklopädie und Propädeutik. Leipzig: Felix Meiner. 1912. Pp. vi + 58. M. 3.40.

Radhakrishnan, S. *Essentials of Psychology*. Oxford: University Press. 1912. Pp. 75.

Wundt, W. *An Introduction to Psychology*. Translated by Dr. R. Pintner. London: Allen and Company. Pp. xi + 198. 3s. 6d.

### NOTES AND NEWS

Dr. J. E. W. WALLIN, Director of the Psychological Clinic in the University of Pittsburgh, has been appointed R. B. Mellon Fellow in the division of smoke investigation in the department of industrial research of the university, with the immediate duties of making a preliminary survey of the literature bearing on the psychology of smoke, and of outlining a plan of investigation in this field. Owing to the lack of bibliographies bearing on this topic, he will be pleased to receive statements from any one who has made observations on the mental influences of smoke, or who is in a position to supply references.

THE New York Academy of Sciences announces for December 6 a lecture by Professor Hugo de Vries on "Experimental Evolution," which will be given in cooperation with the American Museum of Natural History.

ON October 9, Dr. Henry M. Sheffer lectured at the University of Wisconsin on "The Revolution in Logic and the 'New' Philosophy." He repeated this lecture at the University of Chicago the following night.

MR. W. H. MILLS, M.A., of Jesus College, has been appointed demonstrator to the Jacksonian professor of natural experimental philosophy at Cambridge University in place of the late Mr. H. O. Jones.

DR. RAYMOND DODGE, professor of psychology at Wesleyan University, Middletown, Connecticut, has been appointed consulting experimental psychologist at the Nutrition Laboratory of the Carnegie Institution.

"The Problem of Christianity" is the subject of the eight Lowell lectures to be given by Professor Josiah Royce, of Harvard University, on Monday and Thursday afternoons, beginning November 18.

ON November 11, Dr. H. L. Hollingworth, of Columbia University, read a paper on "The Relation of Psychology to Medicine and Law" at a meeting of the Society of Medical Jurisprudence.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### "PRESENT PHILOSOPHICAL TENDENCIES"

#### II. IDEALISM AND REALISM

THE part of his task for which Professor Perry shows the most zeal, and to which he devotes the most space, is the refutation of idealism and the exposition and justification of the principles of the new realism. His book is, I believe, the first—though it evidently is not to be the last—volume in which those principles are authoritatively set forth and elaborately defended. It seems worth while, therefore, to deal with this part of the volume at some length. The reasonings propounded on the subject contain, assuredly, much acute criticism and some original and ingenious pieces of constructive argument. But—to come to the main point at once—the discussion, as a whole, is vitiated by a singular, an enormous oversight. Half, and the more important half, of the considerations which first generated and still support idealism, are all but completely disregarded. And the oversight is more than a mere omission; Perry expressly denies the fact which he overlooks. "The strategy of idealism," we are told, "depends on the adoption of a certain initial standpoint. The world must be viewed under the form of knowledge." "A study of the later development of idealism will disclose the fact that it relies mainly, if not entirely, on the Berkeleyan proofs" (pp. 132 and 158).<sup>1</sup> And for Perry these proofs are reducible to two, both fallacies in formal logic, which he calls "definition by initial predication" and "argument from the egocentric predicament."<sup>2</sup> The first consists in "the error of inferring that because," *e. g.*, a tulip "is seen, therefore its being seen is its essential and exclusive status"; the second consists in taking the methodological difficulty that only things thought of can be mentioned or instanced in argument, as a proof that only things thought of can exist. Both of these, no doubt, are bad arguments; though even of these the second is hardly fairly presented.<sup>2</sup> The egocen-

<sup>1</sup> "Present Philosophical Tendencies," Ralph Barton Perry, 1912.

<sup>2</sup> A few "objective idealists" are credited with having added "at least one new argument"—the argument that the relatedness of things must be

tric predicament is obviously misapplied when regarded as a demonstration of idealism; but it is not without force when regarded as a challenge to the realist to demonstrate the truth of *his* affirmations. What the predicament tends to show—as many of those who have used it have clearly understood—is not that realism is false, but that it is problematical, and that the situation in which, from the nature of the case, our thinking is entangled renders direct proof of the independence of things—by the actual *exhibition* of a thing outside of “the cognitive relationship”—impossible. When so construed, this “Berkeleyan argument” at least creates an embarrassment for any realist—and I say this as one of them, so far as the purely epistemological issue is concerned. Moreover, the argument as presented by idealists is usually backed up by an explicit or implied appeal to the principle of parsimony. We find things, we are told, existing only in a certain mode or context or relation; and a law of scientific procedure requires us to refrain from multiplying entities—and even from multiplying the “particularities” of a given entity—*praeter necessitatem*. But taken thus, the argument from the egocentric predicament is by no means the crude formal fallacy which Perry (pp. 129–132) represents it as being. I believe it, indeed, to be an argument that can be met; but in meeting it one would be obliged to go outside the position of epistemological monism.

The essential point, however, is that idealism—or at least the opposition to physical realism—has never relied solely upon these two proofs, has seldom relied upon them mainly, and has sometimes, especially of late, not relied upon them at all. For besides the epistemological type of argument for idealism or spiritualism, there has always been recognized a dialectical type of argument. Appearing in many forms, this argument in its general method consists in a *reductio ad absurdum* of the hypothesis of the independent reality of the objects of perception, in a proof that that hypothesis, if followed through, compels you to assert of these objects propositions contradictory either of one another or else of undisputed facts of experience. In its earliest and simplest form this dialectical argument arises out of reflection upon the relativity of the sensible qualities and magnitudes of objects to their individual percipients, and even to the several sense-organs of the same percipient; and in that form it leads only so far as epistemological dualism. The anthropological roots of idealism lay in the earliest distinction between *apper-* derivative from the synthetic unity of consciousness (p. 156). But this is scarcely an argument at all (p. 158), and “the majority of idealists do not even attempt to find a new proof”; they still rest their case on the two “Berkeleyan grounds” (*ibid.*).



pearance and reality; and its direct historic source, as a technical theory, was, as every schoolboy knows, the physicist's doctrine of the "subjectivity" of most of the sensible attributes of matter. There are, as Hume said, certain "trite topics employed by sceptics of all ages against the evidence of sense; such as those which are derived from the imperfection and fallaciousness of our organs; the crooked appearance of an oar in water; the various aspects of objects, according to their different distances; the double images which arise from the pressing of one eye; with many other appearances of like nature." And of such scepticism, idealism is quite as truly the child—or at least the grandchild—as it is the child of the religious craving to "restore a spiritual center to nature," which Perry regards as the principal *motive* engendering idealistic tendencies. It was the distinction between what things seem and what they are "in their own nature,"—and certainly not any tendency in the Greek mind towards inwardness and subjectivism—that brought Protagoras to an adumbration of idealism, two thousand years before Berkeley. And even Berkeley, though he is the arch-representative of the two types of argument which Perry regards as the essence of the idealist apologetic, rests his case quite as much, if not more, upon the dialectical sort of argument, upon the consequences of "the distinction some make betwixt *primary* and *secondary* qualities." The relation of Berkeley's doctrine to the chapters on "Our Knowledge of Existence" in Locke's Fourth Book, Perry sufficiently indicates; quite as important is its relation to the twenty-third chapter of the second book.

The relativity of secondary qualities is taken by science as an evidence of their subjectivity, because otherwise you would apparently be compelled, self-contradictorily, to assert of one and the same object that it "really" and in itself is at the same moment long and short, square and oblong, hot and cold, red and gray, and so on. But the dialectical type of idealistic reasoning is not limited to an extension of the argument from the relativity of sensible qualities. It is exemplified likewise in the argument from the antinomies of the infinite divisibility and extension of space—already made much of by Berkeley—and in any other proposed proofs of spiritualism through the demonstration of paradoxes in physical realism. And this type of argument, I say, has at all times tended, not less powerfully than the direct and purely epistemological argument, to generate, first of all, dualism, and eventually some form of idealism.<sup>3</sup>

<sup>3</sup> Perry mentions, though briefly and not in connection with his principal exposition and criticism of idealism, the argument from the antinomies, and in something less than two pages (103-5) presents a solution of those difficulties.

Professor Perry has thus largely forgotten or failed to understand the more significant of the two principal factors in the genesis, the evolution, and the logic of idealism. The fact makes his three otherwise admirable chapters on the subject not only incomplete, but misleading. He has, consequently, almost as completely ignored the principal difficulties which inhere in that "epistemological monism" which is an essential part of the theory of knowledge of the new realism. The nature of that theory is expressed with a clearness for which one must be grateful. The new realism consists in the joint affirmation of two doctrines, (1) "epistemological monism, or the theory of immanence" of objects, which "means that when a given thing, *a*, is known, *a itself* enters into a relation which constitutes it the idea or content of a mind"; and (2) "the theory of independence" of objects, which means "that although *a may* thus enter into mind and assume the status of content, it is not dependent on this status for its being or nature" (p. 308). And the new realism achieves the conjunction of these two by means of the "relational theory of consciousness" and of a proof of the possibility of classifying "presence in consciousness" among the external or non-constitutive relations.

Of his own doctrine, then, Perry's formulation leaves little to be desired, in point of clarity and definiteness. But his reasoning in its behalf shows no equal insight into the grounds of other people's dissent from that doctrine. This I shall show by examining his brief—his all too brief—"proof" of neo-realism.

There are, of course, two things to be proved: (A) The realistic part of the new realism, its doctrine of the "independence" of the object; (B) its epistemological monism, the doctrine of the "immanence" of the object. And the latter must be defined and proved in terms not destructive of the former. Now of (A) Perry's proof is composed of a rebuttal of the idealist's arguments, and a justification of realism. The rebuttal consists of two contentions. The first is that the two "Berkeleyian arguments"—that by "definition by initial predication" and that "from the egocentric predicament," as these have been previously expounded by Perry—are unconvincing. That they are so I have already conceded; the one is an ostentatious *petitio principii* and the other has no tendency to prove that objects *can not* exist independently. But then, these never were the only or the most serious arguments for idealism. Secondly, Perry belatedly bethinks him of the real meaning of the argument

But of the dialectical argument in general, and of the significance of its more elementary forms—the arguments from illusions, the subjectivity of secondary qualities, etc.—there is, I believe, no recognition. And the treatment of the antinomies seems to me as unsatisfactory logically as it is meager.



from the egocentric predicament, which in his chapters on idealism he had missed; he observes that if this predicament does not prove idealism, it may at least seem to "render it impossible to prove realism." Though Perry's statement of the idealist's point here, in two sentences, by no means does that point justice, the author has at any rate at last faced one of the serious arguments. His reply to it has more point than he clearly brings out. As given, it consists wholly in a citation from Mr. Russell, wherein that logician argues that, since to know that all the numbers never thought of by any one are numbers above 1,000 does not require us to know all or any *instances* of such numbers, therefore knowledge of the truth of a general proposition does not require us to know all or any of the class to which it refers. Mr. Russell, the Macaulay of logicians, has his own heightened and telling way of putting truisms so that they look like paradoxes. What his example here shows is simply this: if I divide numbers into two classes, those below and those above 1,000; if I know (whether by definition or a "necessity of thought") that these two classes exhaust all possible numbers; and if I also know that all of the former class have a given predicate, such as that of "having been thought of"; then I know that any number lacking this predicate must fall into the remaining class. All that the example illustrates, for Perry's purposes, is that there are other ways of proving facts besides empirically exhibiting concrete examples of them. This is true, though the citation from Russell was not well calculated to make the reader understand the precise point required. It is also pertinent to the argument from the egocentric predicament; for that argument consists in a demand that the independent existence of objects be proved by the empirical exhibition of an object so existing. Perry virtually answers—and the reply is good so far as it goes—"the realist's inability to furnish this kind of proof does not show that his doctrine is incapable of proof; for it is open to him to offer other and more indirect proofs." Yet this, of course, does not carry the realist far upon his way. What *are* his other proofs?

Those offered by Perry are two in number. (1) A *reductio ad absurdum* of subjective idealism: that doctrine can not stop short of solipsism, and solipsism implies absolute scepticism, which is self-refuting or at least self-stultifying. As an objection to the idealism based upon the epistemological arguments, this seems to me valid; as an objection to a pluralistic idealism based upon the dialectical arguments, it is without pertinency. For the dialectical arguments do not tend to prove epistemological, but only metaphysical idealism, or spiritualism. It may perhaps be urged that Perry uses the term "idealism" only of the former. But a term must be judged by the

antitheses it keeps; and Perry habitually assumes that "realism" includes physical realism, and that the realism so inclusive and "idealism" together give an exhaustive dichotomy of the doctrines about the problem in question. He assumes, in short, that epistemological idealism is the only enemy realism (as such) has to attack; and he uses weapons effective only against that enemy. Such are the consequences of his habitual disregard of most of the dialectical arguments.

His remaining argument for the "doctrine of independence" runs thus: relations may be "external," or non-essential to the nature or existence of the *relata*; "being in consciousness" is a relation of this sort. Now, of these propositions, the former by no means needs so much proving as is bestowed upon it. The second is equivocal. If it means only a denial of the proposition that anything's existence necessarily depends upon its now being perceived by me, it affirms no more than any idealist, except a solipsist, will readily admit. But the fact is that, as used by a genuine neo-realist, the proposition "being in consciousness is an external relation," means a great deal more than this. It means that consciousness is *never constitutive of any object that is in consciousness*, or of any quality of such object, or of any of its relations except the one relation of "being-experienced"—which for Perry consists in "being reacted upon in the specific manner characteristic of the central nervous system." Precisely what is known or "presented" or experienced is *always* an existent that would be the same even if not known or presented or experienced; its being and its characters are always such as they appear to be when present in the "mind," and are not in any way modified by their relation to a mind.

This, if I understand the matter, is the essence of neo-realism when its "theory of independence" is interpreted in the light of its "theory of immanence." To understand Perry's defence of the one, then, we must from now on also be mindful of the other. For his proof of the assertion that objects and their qualities are independent of consciousness really reduces to the assertion that *consciousness is known to be the sort of thing that can not possibly be constitutive of the existence or the nature of any object*. It is not from a knowledge about objects, but from a knowledge of what consciousness is, that he supposes himself to have proved the "theory of independence." "The objects selected by any individual responding organism compose an aggregate defined by that relationship. What such an aggregate derives from consciousness will then be *its aggregation and nothing more*" (p. 323; italics the author's). Since this is the utmost that "the mind" can do to objects, obviously it is a poor thing which can in no way threaten their inde-



pendence; with powers so limited, it can not even make itself duplicate or imitation objects. Thus the nature of consciousness is such that objects can not be anything *but* "immanent" and yet "independent." *Quod erat demonstrandum.*

This, so far as I can see, is the only argument which Perry presents that is directed against metaphysical idealism, and not merely against the purely epistemological arguments for idealism; and it is the only one which, if accepted, would establish the kind of realism that neo-realism tries to be. I think it, however, a poor argument; and that Professor Perry finds it a convincing one, I can only ascribe to that same disregard of half the generating logic of both dualism and idealism of which I have already spoken.

The fault of the argument, as presented by Perry, is twofold. He offers no serious evidence for the proposition that the consciousness-relation can not be a constitutive one; and he ignores some well-known evidence that it is constitutive. Some relations are essential and some are external; and you can't by simple inspection tell which is which. As Perry himself pertinently remarks, in an excellent criticism of Mr. G. E. Moore's "Refutation of Idealism," "transportation" may be essential to the table's being in my room; but observation of the table as it is found in the latter relation will not reveal the fact. What, then, is the test for the essentiality of a relation? The criterion, Perry holds, must be an empirical one; "we need to forsake dialectics, and observe what actually transpires." Let us then apply his chosen test. Obviously the only evidence from observation which could show even that the neo-realistic doctrine sometimes holds true,—*i. e.*, that the consciousness-relation is not always requisite in order to constitute objects or their other relations—would consist in the presentation of an object free from that specific relation but in all other respects unaltered. But this the egocentric predicament renders impossible; the one thing that never "actually transpires" is precisely the thing without which the conception of consciousness as a wholly external relation can never be empirically established. Perry has forgotten the fact—which his earlier comment on the predicament seemed designed to show—that it can not be upon an empirical proof that the apologist of realism relies. On the other hand, there is empirical evidence, long familiar to common-sense, but strangely disregarded by the neo-realist, tending to show that the characters which objects have, as they actually appear in any individual consciousness, are in a notable degree constituted by their presence in that consciousness, *i. e.*, by their "being reacted to in the specific manner characteristic of the central nervous system" and the sense-organs of that particular organism. This evidence consists precisely in those

"trite topics" which show that certain peculiarities of the perceiver and certain attributes of the thing perceived vary concomitantly. The same evidence, as reflection very early began to note, also shows that if all the observed attributes of an actually perceived object are supposed to belong wholly to *its* nature, and to inhere in it in the place where, and the time at which, it is supposed to exist—then every object perceived by more than one person, or even apprehended by more than one sense, must be held to possess simultaneously many properties logically contradictory to one another. These, as I have already said, are merely two of the elementary stages in the development of the dialectical—which in its initial data is an empirical—argument against epistemological monism, two of the more obvious sources of the notion of a realm of purely subjective existence, to their presence in which at least some objects and qualities may owe all the existence they have. But these are enough to provide empirical disproof of the "external-relation" theory of consciousness—in the rigorous and consistent form of that theory.

It ought, however, to be said that Perry does not himself adhere with undeviating orthodoxy to the theory. Apparently without quite intending it, he now and then credits "consciousness" with powers which are strange ones for a mere "external relation" to possess. For example, we find that the "selective action of consciousness" can not merely determine the limits of an aggregate or set of objects between which at any moment subsists a common relation to a given organism; it can also create "fictions," can "mistake things for what they are not," can "give rise to illusion and error," can, *e. g.*, "generate the image of a mermaid," which image is "a subjective, and not a physical, manifold." But how in the world can you, out of an aggregation of real things, and of nothing else whatever, produce a fictitious thing? An organism—which is real and physical—by really aggregating a number of real objects or qualities into a single real relationship, thereby generates an unreality! Perry evidently feels, but he nowhere fully faces, the difficulty. He seems to suppose that it can be obviated by treating "aggregation" as equivalent to "rearrangement" and regarding all "fictitious" objects as mere rearrangements of real qualities. A mermaid, even a full-fledged hallucinatory mermaid, is after all nothing but part fish and part maiden; fish and maidens are real, and there needs but a "selective abstracting and grouping," and the mermaid is accounted for! But rearrangement on such a scale as this is *not* "aggregation and nothing more"; it is a great deal more. It is not even mere "selective response." It implies a power to alter the relations of things and qualities to one another, and is therefore not



consistent with the conception of consciousness as in all cases wholly non-constitutive of the *other* relations and qualities of what at any moment is in the "consciousness-relation." It implies, which is more, a power to lend a kind of existence to sensible qualities or objects at a time when, or at points in space where, they do not exist in the physical world-order, are not "physical manifolds."

Another admission which is scarcely reconcilable with the neo-realistic account of the mind's modest rôle may be found in Perry's remarks upon "mediate knowledge or discursive thought." In this—which presumably includes all recollection—"there is a more complete (*sic*) difference between the knowledge and the thing. There are even cases in which the knowledge and the thing known possess little, if any, identical content" (p. 312). In these cases "the thing mediated or 'represented' transcends the representation" (p. 313). I am unable to recognize in this language the authentic accent of epistemological monism, though I perceive it to be the language of truth. And I am unable to derive any help from the few words in which Perry tells us how "the theory of immanence explains these cases." The explanation is that while "the thing transcends the thought, it remains perceivable, or in some such manner immediately accessible; and possesses the qualities and characters which such immediate knowledge reveals." Here we have three items referred to: *A*, "the thing" or independent object; *B*, the "representation" of it at a given time in mediate knowledge, or in memory; *C*, the perception or "immediate knowledge" of the same thing at quite another time. Now, how does the (assumed) fact that *C* is identical with *A* entitle one to say that *B* is also identical with *A*—especially when one has just been assured that it isn't? And if it does not entitle one to say so, then, surely *B* is a case in which the content that is in cognitive consciousness is *not* the same existent as the supposed real "thing" that is cognized.

What is more significant about these cases, however, is the fact that the representation is usually different from its original in date of existence, but *not* altogether different in qualities. The difference of time, of itself, no doubt, would involve no paradox. That a thing which has ceased to exist may subsequently acquire new external relations is familiar enough; all later events may be said to provide it with such *post mortem* relationships. And if the relation of a present consciousness to a past reality were never anything more than this simple relation of posteriority, consciousness would offer no significant peculiarity for the consideration of the philosopher. Nor would it do so if the present "response of an organism" to a past reality consisted in no more than a change in the physical qualities or motions of the organism, caused by that past

existence; that a present effect may be due indirectly to a cause no longer perceptible in its original character, every one knows. But, as it happens, the sort of "response of an organism" to past existences which is exemplified by the memory-image and the general concept is not wholly reducible to these ordinary cases of mere posteriority or mere indirect causality. In the ordinary cases the subsequently supervening relationship never consists in a revival of the past object; but when a past existence subsequently enters the consciousness-relation, there occurs a partial "making present again," a representation, of the object, and its qualities. When Perry tells us how "the theory of immanence explains these cases" of mediate knowledge, he neglects to explain the one thing which is uniquely characteristic of them. While he recognizes that this type of experience has something distinctive about it, he does not observe what that distinguishing peculiarity is, nor the seriousness of the difficulty which it creates for the neo-realistic theory about consciousness. The experiences in question indicate the falsity of the universal proposition that consciousness is never in any degree constitutive of the object; for they show plainly that, in a familiar class of cases, the "consciousness-relation" has a power of reconstituting an object, of giving it a species of present existence at a time which is *not the same as the time of its presence in its other, especially its "physical," relations*. The only alternative to acknowledging this is to declare that the memory-image is a brand-new objective reality, having no relations to the original object save those of posteriority and causal connection. But this is an alternative which Perry does not adopt, and one which can not be adopted. My present image of my last year's coat, though it is a present existent, is not merely a present existent. It is an evocation—and an evocation at will—of a past existent; and there is no conceivable reason for believing that, so far as it is present, it exists in any other sense or degree than the sense and degree of being which it has by virtue of the "consciousness-relation," or that its coming into existence was not due to an antecedent which existed purely as a phase of "consciousness"—namely, to a desire.

This last, however, brings up another difficulty and, if I am not mistaken, another incongruity in Perry's realism. His epistemological monism is, as the previous paper indicated, conjoined with a sort, though an equivocal sort, of psychophysical dualism. I do not argue that the conjunction involves any direct and express contradiction; but I think that upon a little analysis it will be found to disclose some unexplained obscurities. For example: while cognitive consciousness is merely an "external relation," appetitive consciousness or desire, is, for Perry, so far as I can determine, *not*



merely a relation. What, then, is the common essence of the two by virtue of which they are species of a single genus? Again, desire in its complete form is always conjoined with the representation of some yet unrealized future condition, of which, moreover, the realization is problematical. Just how, now, does an epistemological monist find room in his scheme of things for a present thought of an object which belongs not only to the future, but to an unreal future? Have we not here again—in anticipation, as well as in memory—an example of an object of which it is absurd to maintain that it has any more existence or other qualities than it is found to have “in consciousness”? And is it not the first requisite to the “effectuality of consciousness” that consciousness shall be able to generate voluntary images, to construct for itself a purely ideal world, before it endeavors to impose those ideals upon physical reality? But the chief incongruities in Perry’s version of the new realism appear to be due to a failure to perceive that a consistent neo-realist must be a “pan-objectivist,” and can have no place in his universe for “fictions” or purely “subjective manifolds” of any sort. There are others of the school who realize this fully, and are prepared to defend their paradox. In so far as Perry avoids it and retains not a few shreds and patches of the dualism of common-sense, he nullifies that doctrine concerning the powers of consciousness which, as we have seen, is the core of the neo-realistic argument. For that doctrine ceases to serve the purposes of epistemological monism when it ceases to affirm the absolute and the invariable externality of the conscious-relation. On the other hand, in so far as Perry formally adopts this doctrine, and the whole argument of which it is a necessary premise, he betrays an inability to understand the real nature and force of the reasons which have chiefly conduced to make most people epistemological dualists and later have led some people to become metaphysical idealists. This inability seems to be a characteristic of many of the school; one can not avoid surmising that these learned as well as acute and ingenious writers are afflicted with a sort of intellectual blind-spot, which renders imperceptible to them an important part of the history of human reflection and of the “immanent dialectic” of the problem that most engages their interest. Some of them, however, have of late become sensible of the real logical situation and have addressed themselves seriously to the defence of their doctrine against the simpler phases of what I have called the dialectical type of argument—so much of that argument as attacks epistemological monism. The first (not the only) requisite in such a defence is a wholesale revision of the logic of attribution, with a view to explaining how it is possible for an object at a single time to have and not have a

given attribute, for a percept or image existing at one time to be "numerically identical with" an object existing at another time, for two space-occupying things to occupy (in a univocal sense) the same space simultaneously, and for a coherent and rational world of physical reality to find room for all the hallucinations and dreams and illusions the mind of man has ever bred, all in one "real" space and upon a single and common plane of objectivity. At this unpromising task some efforts which can at least be called interesting and intrepid have recently been made. Since Perry's book shows almost no appreciation even of the necessity (from the realistic standpoint) for the task's accomplishment, its whole discussion of realism and idealism, fails to touch the central logical issue in the controversy.

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### A POINT OF DIFFERENCE BETWEEN AMERICAN AND ENGLISH REALISM

THE *New Realism* has advocates both in England and in America. In many of its theses, notably the doctrines of independence and of subsistence, the tendency toward pluralism, and the separation of theories of reality from theories of knowledge, the English realist and the American realist are in close agreement. New realism, the assertion is repeatedly made, is primarily a polemic against subjectivism, subjectivism being a term now generally used by the realist to designate the various types of idealism in so far as they hold to an inseparable connection between consciousness and its object. In opposition to subjectivism all realists agree that the content of which one is conscious is independent of the consciousness of it, a distinction which the realist expresses by saying that consciousness is an *external* relation.

The leading point of difference between the English and the American realists is a difference relating not to the type of connection holding between the act of being conscious and the content of which one is conscious, but a difference relating to the nature and status of consciousness itself; it is a difference pertaining to the importance which attaches to the element of consciousness and to the relative position which consciousness occupies in relation to the content of which one is conscious. For subjectivism consciousness is the supreme factor, is logically prior to content, and is somehow authoritative respecting its organization and coherence. Content is inseparable from, coextensive with, and dependent upon, consciousness.



For English realism content is separable from and independent of consciousness. Consciousness is an entity among other entities, a term among other terms, a "first among equals"; it is on a level with content, sustaining to it the relation of togetherness or compresence. By the American realist consciousness is taken out of the realm of terms and placed within the realm of relations. The leading characteristic which distinguishes the American realist from the English realist is this relational theory of consciousness. Consciousness is neither above nor on a level with content; it is below it, is subsequent to and dependent on it.

In illustration of this distinction may be cited the writings of Mr. S. Alexander. The analysis of sensation begun by Mr. G. E. Moore<sup>1</sup> consisting in the separation of the sensation into the object of which we are conscious, and the consciousness of the object, the former being extra-mental, the latter being an undifferentiated, pure, transparent process, is pushed to its furthest possible limit by Mr. Alexander. Any experience, according to Mr. Alexander, which may be termed mental experience is characterized by a fundamental distinction between what is experienced and the act of experiencing. There is the act of apprehending and the something apprehended, the act of judging and the something judged, the act of remembering or imaging or believing, and the something remembered or imaged or believed. The something experienced is always other than the mind which experiences it. Such are the two elements present in every mental experience. There is the object or content or "cognitum," and there is the knowing, the thinking, the mental act, which Mr. Alexander terms consciousness or mind.

The relation between these two elements is simply that of togetherness or compresence. "But when I merely perceive the table, I am there and the table is there. . . . The togetherness or compresence of the perceiving and the table is the perception of the table. . . . Thus the table and I are together in precisely the same sense as the table and the chair are together. A looker-on who could see me and the table in the same way as I see the table and the chair would say that the table and I or the table and the chair are together in the same sense. Instead of the table there happens to be I, who am a mass of experiencings."<sup>2</sup> Or again: "For our fundamental fact informs us that mind or that which is enjoyed is but one thing together with other things in the world. . . . Mind is but the most gifted individual in a democracy of things."<sup>3</sup> Mind, as thus seen, is viewed as an entity, as a term. It occupies a position on a level with other entities and terms.

<sup>1</sup> "Refutation of Idealism," *Mind*, Vol. 12.

<sup>2</sup> Cf. "The Method of Metaphysics," *Mind*, January, 1912.

<sup>3</sup> *Op. cit.*

But if consciousness is a term, it must sustain some sort of relation to the other terms with which it is copresent. The mere relation of togetherness or compresence is insufficient. One is at a loss to understand how such a purely diaphanous activity, when viewed as a mental entity, a mental term, can be related to content terms of a nature other than itself. If consciousness is a term it should be possible to isolate it from its copresent associates and identify it as such. If we take away all the content terms, it should be possible to discover, by an empirical analysis, the term consciousness as the necessary residue. The impossibility of such an analysis seems to indicate that perhaps consciousness is not a term at all. There seems need, therefore, of some modification in the primary conception of consciousness. And this demand is supplied by the American realist who regards consciousness, not as a term, but as a relation. The English realist separates off the content of which there is consciousness and declares that it exists independent of consciousness. He limits the meaning of the term consciousness to mental activity. But in so far as consciousness is taken to mean mental activity, there is no break with the traditional conception of consciousness as an operation.

English realism thus shows that consciousness is at best only copresent with content. American realism goes a step further and maintains that consciousness is not even of equal grade with, but is secondary to and dependent on content. The impetus to the relational theory of consciousness was given, doubtless, by the article, "Does 'Consciousness' Exist?" by Professor James, who maintained that the word consciousness stands not for an entity, but for a function. The theory was first systematically formulated by Professor Montague, who takes the view that the relational theory of consciousness and a realistic theory of objects mean the same thing, though approached from different points of view. Realism, he asserts, is the logical implication of such a theory of consciousness.<sup>4</sup> In "The New Realism" we find the statement: "being known is something which happens to a pre-existing thing."<sup>5</sup> Or, according to Professor Perry: "*when an entity is known or otherwise experienced it is related to a complex.*"<sup>6</sup> The "complex," one gathers from turning the pages of "The New Realism," may be termed the "knower"; and of the "knower" "New Realism" has little to say. It may be a soul, or the body, or what not. But *knowing* is the relation between the knower and the something known.

<sup>4</sup> W. P. Montague, "The Relational Theory of Consciousness," this JOURNAL, Vol. II., page 309.

<sup>5</sup> "The New Realism," page 34.

<sup>6</sup> "The New Realism," page 126.



Now to view knowing or consciousness as a relation carries with it an obvious implication. It implies that the relation is dependent upon the terms related. Consciousness is not primary, but derivative; it occupies a position subordinate to the terms related, and fluctuates with changes in those terms. The American realist, consequently, in viewing consciousness as a relation, is saying something definite about the nature of consciousness. He is saying that consciousness is something which is generated, and thus he is led to describe the conditions of its genesis. We find the American realist, therefore, attempting to tell us what consciousness is and to give an account of its nature. And this, it seems, is a legitimate inquiry, since consciousness is not ultimate, but is something derived from more ultimate terms, which are themselves open to investigation. In the light of this position consciousness itself naturally becomes a subject of analysis. The English realist, on the other hand, viewing consciousness as a term which introspection finds to be present along with other terms, has nothing to say as to its origin or nature.

We see from this brief analysis that consciousness, touching the position which it occupies in relation to the content of which there is consciousness, is taken at three levels. For subjectivism consciousness is *above* content. For English realism, consciousness or mental activity, itself a term of logical equality with its compresent associates, sustaining to them the democratic relation of togetherness, is *on a level with* content. For American realism consciousness, being a relation between terms and logically dependent on those terms, is taken at a level *below* content.

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## DISCUSSION

### THE PROBLEM OF FORMAL LOGIC

PROFESSOR HOWISON is said once to have remarked to William James, "James, philosophers always say they want 'recognition'; but what they really want is *praise*." I find, however, that I myself am too perverse, hardened, or unphilosophic to want either, and so am a little disappointed with Mr. Eastman's review of my "Formal Logic."<sup>1</sup> Had I wanted "recognition," the honor of a "Discussion" in the JOURNAL OF PHILOSOPHY, had I wanted "praise," quite a number of Mr. Eastman's remarks would have contented me; but I happened to desire a precise indication and a relevant discussion of some at least of the logical issues raised in my book. And of this I regret to say I did not find enough. It is of course very interesting to learn that Mr. Eastman has been brought

<sup>1</sup> This JOURNAL, Vol. IX., page 463.

up in a "little college" where logic had been "forgotten many years ago," and now believes in a "great, democratic, system-wrecking philosophy," or even that he can not speak for Oxford<sup>2</sup> (nor presumably for the rest of Europe), but it would have added both weight and intelligibility to his rather elliptic and sketchy comments if he had explained a little what he meant by "formal logic," both of the "non-existent" kind he regards me as having (superfluously?) "annihilated" and of the extant kind he regards me as having made the worst of. As it is, it is certainly very hard to make out how many sorts of logic he thinks there are and how they should be related, as also what he means by "consistency," "generalization," and so forth. Had Mr. Eastman endeavored to put his ideas a little more clearly, it might even have occurred to him that his readers might develop some little curiosity as to mine, and that it was his duty as a reviewer to report on them. His review would then have gained enormously by presenting a clear issue between his definition of formal logic and mine, and it would have become apparent that very many of his remarks have no application to my book.

As it is, I found Mr. Eastman's discussion frequently unintelligible, until I realized that what was the matter with it was precisely that he had *not* studied formal logic in his "little college," but had merely given a general and uncritical assent to some of its most untenable claims; this had enabled him subsequently to imagine that he had emancipated himself from all such nonsense, while yet remaining under its spell, thanks to the affinity which its verbalism has with grammar. Now this is precisely the position of the man in the street, and is the worst of formal logic; the less you know about it, the more easily it deceives you.

At any rate, no one who has by painful experience acquired a proper respect for the intellectual output of eighty generations of logicians could possibly regard formal logic as an unimportant thing, or imagine that he was making a harmless concession to it by admitting that it could legitimately concern itself with "consistency in generalization." He would realize that he had thereby given himself away completely, and that no amount of "democratic, system-wrecking" riotousness could after that prevent his philosophy from being very promptly suppressed by formal logic. For if it is true that the "consistency" (or otherwise) of forms of words can guarantee *in advance* the soundness (or otherwise) of the meanings to be expressed by their aid, and can dispense with all knowledge of the

<sup>2</sup> He may, therefore, possibly believe me when I assure him that all the important formalist doctrines I criticize are to my certain knowledge at present actually taught in Britain. And it would surprise me to be given evidence that they are not also prevalent in America. Certainly American text-books seem to be fully as formal as English.



use to which the words are to be put, and if it is further allowed that meaning is inherent in words and not in persons, it is clear that there is conceded to "logic" a very real and extensive control of all empirical reasoning. Nor will any thorough empiricism be possible so long as "logic" retains any *a priori* jurisdiction over the process of reasoning; a consistent empiricist must discard wholly the notions that "consistency" is ultimately a matter of words and that "generalization" has meaning apart from application.

It was because I perceived this that I refused to recognize a logic of "consistency," even as an "ideal" formal logic might vainly hanker after. I did not discuss it elaborately as an ideal, both because it was too obvious on every page that consistency of any sort is about the last thing formal logic is capable of achieving,<sup>3</sup> and because I was proving that the formal notion of consistency involved a total abstraction from meaning, and it seemed trivial to ask whether the unmeaning should or should not be "consistent." This abstraction I showed to be the essence of formalism, and to be almost universal among logicians, whether or not they conceived themselves as formalists. If Mr. Eastman approves of it, all I need say is that he is a formalist too.

I admit, however, that I took pride in showing that the weapons of formal logic could be effectively used against it, and that its doctrines were everywhere lacking in "consistency" and precision. Mr. Eastman sees fit to condemn this procedure as "academic" and "intellectualistic." He has apparently forgotten that logic is a subject which none but professors teach, and that boisterous "system-wrecking" is about the last thing to appeal to them. They live by expounding the systems of others, if not by patenting their own. That is one reason why they will not understand his "great democratic philosophy" at all. There is also another which strikes deeper, as I discovered when reflecting on the manifest inability of most trained philosophers to understand the theory of real knowing. Their minds are preoccupied by certain deep-seated prejudices which have been instilled into them unconsciously by the study of formal logic. It was clear, therefore, that if progress was to be made these prejudices had to be attacked systematically and, if possible, eradicated.

Mr. Eastman's charge of intellectualism would seem to rest on a confusion of intellectuality with intellectualism. Mr. Eastman has not observed that I am not one of those who have despaired of logic and the intellect with all its works, and propose to live by scepticism agreeably diversified by an irrational faith. I defy him to quote

<sup>3</sup> It is, however, far from true that "the standard of consistency is never once mentioned" by me (*cf.* pages viii, ix, 6, 211, etc.).

from me any disparagement, either of intellect or of real logic, and can not understand why my rejection of the defective reasonings of intellectualism (shown to be slipshod and incoherent by its own standards) should debar me from availing myself of intellectual appeals where such were appropriate and likely to be effective.

I was accordingly not a little shocked to find that, though Mr. Eastman regarded his theory of knowledge as akin to mine, he could nevertheless assert that it "put value above truth." For of course "truth" to me is a kind of "value," and truth-values are as worthy of exact and scientific study as any others. That is precisely why I objected to the total disregard of this aspect of thought in the traditional logics.

Mr. Eastman's conception of the relation of truth and value, on the other hand, seems to me to play right into the hands of those who have long been trying to persuade themselves and others that pragmatists regard anything handy as true. Hitherto this accusation has encountered a slight obstacle in the facts that the responsible leaders of the new theory of knowledge had always expressly repudiated this simple conversion of the A proposition, "all truth is useful," and that no one could quote any authentic pragmatist who had actually asserted it. But now Mr. Eastman favors them with the very thing they wanted. Alike in his preference of "value" to "truth" and in his rebuke of my "inconsistency" in rejecting formal logic as incoherent in spite of the solace and profit it has long brought logicians<sup>4</sup> (p. 464), he plainly does imply this conversion. And if he will visit the intellectualist camp with this achievement, he will doubtless be hailed with enthusiasm, and preserved in alcohol—or any other liquor he may prefer.

In short Mr. Eastman's method of defending the voluntarist theory of knowledge seems so unsound, the claims he makes for a Heraclitean "logic" are so unknown to the history of philosophy, his vision of the merits of a "reborn" formal logic is so queer,<sup>5</sup> the verbalism and lack of humor of some of his criticisms (*e. g.*, note 5) are so glaring, the distortion of my meaning is sometimes so flagrant,<sup>6</sup> that a horrid

<sup>4</sup> There is of course no "intellectualism" in this. For to me the "incoherence" means a failure of the purpose to make a consistently formal logic.

<sup>5</sup> A formal logic that takes account of relevance and purposes would indeed be a remarkable novelty in hybrids (*cf.* p. 465).

<sup>6</sup> *Cf.* notes 2 and 3. It is a plain statement of fact that formal logic tries to abstract from the personal context of assertions, and there was nothing "derisive" in my saying so. *Per contra* I can not understand how any one could imagine from the passage on page 135 that I was myself proposing to embark on an exhaustive catalogue, in advance, of the meanings of judgments, because I pointed out the failure of formal logic to achieve this self-imposed task. It also strikes me as rather cool (on page 466) to correct my statement



suspicion arises. Can it be that he is really an intellectualist masquerading as a pragmatist in order to reduce pragmatism to absurdity and to sow dissensions in its camp?

That would explain why he should strive to represent my work as antagonistic to Dewey's. As a matter of fact it is in full accord with him. I drew attention to the greatness of his discovery that we do not reason except in relation to a *doubt*, and emphasized that even though this seems as simple as the egg of Columbus once it is seen, logicians have all along erroneously based the theory of knowledge on a relation to *certainity*. Again it should be a material help to an experimental theory of knowledge to have it shown that both judgments and inferences must always be experiments and that formalism's attempt to conceive them otherwise reduces them (and it) to nullity.

Certainly "Formal Logic" does not compete with Dewey's valuable little work on "How We Think." It was not intended to do so, any more than to expound the whole logic of real knowing, which would be a two-volume affair at the least. It was merely intended to show how impossible it is that we should think as logicians think we think. It evinces then an extraordinary misapprehension of its purpose to criticize it as a constructive theory of knowledge. It is meant as a systematic criticism of traditional logic on its own ground. But as systematic criticism must have a positive ground of its own to start from, it implies throughout that the existence of a personal assertor must be taken into account in any logical treatment of real thought. How in detail a real logic would do this I did not propose to show explicitly on this occasion. But as it is sometimes impossible to explain what is wrong without revealing what is right, I could not help hinting how differently a logic of real knowing would handle logical questions. I apologize for these hints, for they may lead to repetitions later on. Naturally they were rather more numerous and detailed in exposing the wholly unscientific character of the formal theory of "induction"; for it was necessary to refer to the actual procedure of scientific thinking in showing that formalist "induction" is just as impotent as formalist "deduction." I intend, of course, if I am spared, to publish some day a systematic logic of real knowing; but it would have been quixotic to embark on so big a construction until the ground had been freed, by clearing away the ruins of the pseudo-science of logical "forms."

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that formal logic tries to abstract from the context of *all* assertions and to restrict its scope to "general" assertions. I certainly did not mean this.

## REJOINDER TO MR. SCHILLER

MR. SCHILLER says that he found my disussion of his book unintelligible. It is evident that he did, and I am sorry, for I studied his book and made an earnest effort to tell the truth about it. I wish I could have put my opinions before him clearly enough so that he could answer them.

As I did my best, however, I am not going to try again, execept upon two points where I know I can remove his confusion with a word.

He says:

"At any rate, no one who has by painful experience acquired a proper respeeet for the intelleetual output of eighty generations of logicians could possibly regard formal logie as an unimportant thing, or imagine that he was making a harmless conceession to it by admitting that it could legitimately concern itself with "consistency in generalization."

Now I did not say that formal logie is an unimportant thing, nor that admitting it could concern itself with consistency in generalization is a harmless conceession to it. I said in effect that formal logie is an important thing, and admitting that it concerns itself with consistency in generalization is a formidable statement of its importance. Not to go into detail, I think Mr. Schiller's misconceptions here, and elsewhere, arose from his impatience of my article. Instead of reading it with attention to its structure and sequence, I have the impression that he swallowed it, found it disagreeable, and got rid of it as a whole in a very short space of time.

The other misconception I can remove in a word, is this: He says:

"I was accordingly not a little shocked to find that, though Mr. Eastman regarded his theory of knowledge as akin to mine, he could nevertheless assert that it 'puts value above truth.' For of course 'truth' to me is a kind of 'value.'"

Now by "puts value above truth" I meant *holds value to be the higher genus*. That is, I meant exactly what Mr. Schiller expresses in other words when he says, "for of course truth to me is a kind of value." No other *aboveness* than that of genus to species was, or could well have been, present to my mind.

Mr. Schiller's idea that I meant to say value is more valuable than truth, is not flattering to me. But then, neither is the rest of his reply. He seems to have discovered in some way or other that I am not very well educated, and while I have no feelings about the matter and do not resent his making it public in this way at all, I do think it is a little off the main line of the argument. That is, I think it was



all right to mention it, but he ought not to dwell on it quite so strong as he does, because it is one of those "extra-logical" forms of reasoning that keep tempting us back into the text-book where we could classify it, and call it by a Latin name, and get all those other medieval satisfactions out of it.

MAX EASTMAN.

NEW YORK CITY.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Hamann und die Aufklärung. Studien zur Vorgeschichte des romantischen Geistes.* 2 Vols. RUDOLF UNGER. Jena: Diederichs. 1911. Pp. 978.

The publication of a standard work in the history of thought is not an every-day event. Such a standard work is Professor Rudolf Unger's "Hamann und die Aufklärung." In spite of its title it deserves to attract the attention, not only of the historian of literature and culture, but also that of the historian of philosophy.

Johann Georg Hamann of Königsberg, a good friend of Kant, Herder's most intimate friend, admired by Goethe, by Hegel, by Schelling, Baader, Friedrich Schlegel and the German Romanticists, has been followed by a strange destiny in the history of thought. He was by nature a "crank," similar, in a way, to his more famous contemporary, Rousseau; similar in other ways to Schopenhauer and Nietzsche, to Pascal, and again to Kierkegaard. There is indeed no doubt that the latter was almost entirely influenced by Hamann. Cranks are, as a rule, in some respects superior to the majority of their contemporaries. That is the reason why the majority of their contemporaries do not understand them. But some men of genius do. So it was with Hamann. Quite unintelligible to the "*Aufklärer*," he was an immediate precursor of the famous "storm and stress" period, a mighty inspirer of thought for the German classicists, and an important element in the philosophy of the early nineteenth century. Since that time his reputation has gone up and down. From inspiring the highest enthusiasm he has been treated with scorn or entirely neglected. Hamann was himself responsible for both these attitudes of the nineteenth century; for his writings contained not only sparks of surprising originality and profundity, but also a surprising amount of real oddities and rubbish. The former are buried in the latter and all are wrapped up in a most mysterious and often almost incomprehensible style. In order to walk, I should rather say to climb, through Hamann's writings one needs a guide. "My writings are words only," Hamann said himself. "The music which interprets them is missing. This music consists of casual *audita, visa, lecta et oblita*, and the whole play of my authorship is a mimic art."

To find a reliable guide through these words without music was hitherto no easy task. Most of the Hamann admirers were too much enthusiasts and too little scientists. Professor Rudolf Unger is actually

the first Hamann scholar who has not contented himself with being spiritual about Hamann's spirituality, but has by strict methods, by an amazing range of knowledge, and by an unequaled endurance successfully solved one after another of the Hamann riddles.

Several years ago, in 1903, Unger published a small volume on "Hamann's Sprachtheorie," a book containing far more information than its title suggests—in fact, the best and most comprehensive book on Hamann's thought at that time. We can not dispense with it even now after the publication of the larger work. This larger standard work on "Hamann und die Aufklärung" is the result of nine years' further study of the subject. It contains three parts in four chapters.

The first part deals with the fundamental movement of German thought from the time of the Reformation to the time of the "Aufklärung," and then proceeds to a very careful analysis of German thought in the middle of the eighteenth century. The amount of learning condensed in this part is almost incredible. One often gets more information from a single phrase than from a whole page in other books. Personally I do not know of any such comprehensive exposition of German thought in the early "Aufklärung" and its subcurrents. For him who has looked into the enormous riches of the volume it goes without saying that not everything in it comes at first hand. Rudolf Unger is a great reader and reads carefully. Almost all results of modern investigation, as far as they are related to the subject, are utilized. On the other hand there are some extremely interesting chapters, the material of which is entirely new and representative of Unger's own research work. I allude especially to his references to Hamann's immediate intellectual environment—German thought in Königsberg. All this is of extreme importance for a knowledge of Hamann, as well as for our knowledge of young Herder and young Kant. No Kant scholar can henceforth dispense with the reading of those chapters.

The second part contains a minute and very interesting psychological analysis of Hamann's personality. This is so much the more important as Hamann's curious position in the eighteenth century is largely conditioned by the singular structure of his psychic life. The central point in Hamann's philosophy is a feeling of the insufficiency of the generalizations of the "Aufklärung." It appeared to him that these generalizations leave the individuality of man unaccounted for. They seemed to him like a network through the meshes of which a certain residue is always slipping, and Hamann would maintain that it is just this residue which is the most essential part of man.

The residue of individuality makes itself known in what is usually called "feeling" (*Sinnlichkeit*) as distinguished from "reason." Hamann had the gift of an extraordinary sense of "feeling," and as this feeling developed with him into the channels of a pronounced and even immoral sexuality, against which no beautiful philosophical system could stand, he took refuge in the opposite extreme of irrationalism, in religion as a source of moral power.

From this he derives his philosophy, which is at bottom a confession



of feeling, rooted in religious life, sometimes tainted with a sexual undercurrent, generally spiced with the paradoxical mood of orthodoxy, and always directed against the pet ideas of the "Aufklärung." Feeling against reason; religion against philosophy; receptive attitude of genius against explicitly made plans of human self-sufficiency; immediate experience against deduction; imagination against investigation; instinctive life instead of principle; devotion instead of science; depth of passion instead of sweet sentimentalism; belief in God and "freedom in Christ" instead of moral rules which, without the former, appear to him frivolous; recognition of the radical sinfulness of the heart against the pharisaean doctrine of shallow optimism; true optimism with a view to heaven against wrong optimism with a view to civilization, a quiet life within narrow limits—*λαθε βιωσας*—against the tumultuous distractions of public life: these are the doctrines of the "Magus im Norden." Indeed a queer sermon in the eighteenth century, but none the less a good admixture. The important truths of Hamann's writings were realized by the best of his contemporaries. Their drawbacks were no less realized by the author, who himself was a severe judge of the weaknesses in his character from which the strange paradoxes of his preaching sprang.

The third part of Unger's work is perhaps the hardest for continuous reading, but very likely the most important for our understanding of Hamann's writings. I should call this third part a guide-book *par excellence*; the only really reliable commentary on Hamann we have, although not a complete one. Unger has collected all of Hamann's utterances on esthetics and related subjects, such as genius, drama, literature, style, and given them a very learned and satisfactory commentary, which elucidates a great number of difficulties hitherto unsolved. One chapter in this section, combined with another in the second part, gives an exhaustive enumeration of Hamann's entire reading. Both chapters are dry, but, with a view to the numberless obscure allusions in Hamann, very valuable.

The second volume of Unger's work is mainly of a bibliographical nature. There are more than 280 pages filled with notes containing references, and very interesting side-issues. As to the references, it is much to be regretted that Unger did not arrange a list of them according to the number of the volumes and pages to which they refer. This would have made it ever so much easier to use Unger's work as a commentary for a continuous reading of Hamann. An appendix of almost 100 pages surprises the reader with a number of Hamann's writings hitherto unknown and now rediscovered by Professor Unger's investigations. Another appendix completes our present Hamann bibliographies with an addition of no less than 144 numbers. Several elaborate indices conclude the work.

Considering all, I have the conviction that we are greatly indebted to the author. His work on "Hamann und die Aufklärung" represents an astounding amount of mental energy, and we can profit by it. At present we can face the riddles of Hamann in quite a different manner than before. Unger's work creates an entirely new foundation for the Hamann research; a result which is so much the more important as a new edition

of Hamann's works is planned by the Prussian Academy of Sciences, with which Professor Unger will collaborate. Unger's work is a new foundation, but it is not itself a building. There is no doubt that the overwhelming number of details in it often veils the evidence of the great outlines of Hamann's thought. Here and there "*sieht man den Wald vor Bäumen nicht.*" Professor Unger promises still another, possibly a still more important, work on the subject. The last work was analytical in spirit; we hope that the next one will be a synthesis in spirit and in structure.

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*Life's Basis and Life's Ideal.* RUDOLF EUCKEN. Translated with an Introductory Note by ALBAN G. WIDGENY. New York: The Macmillan Co. Pp. xxii + 377.

This is a successful translation of "*Die Grundlinien einer neuen Lebensanschauung,*" the latest and best statement of the philosophy of Eucken. Though more technical than the more popular works of the author, not long ago translated into English, it is by far the most satisfactory in making clear his general position.

What that position is may be briefly stated as follows: It is a philosophy of life primarily rather than a world philosophy, a cosmology. It reaches out to and finally comprehends the world, but it is based on man's life, and from that takes its rise. This life is essentially spiritual; its spirituality is not an inference, but is an original datum. The sound of a bell is no more a presupposition of what you experience than is spirituality a presupposition of your experience. It is what you experience. It is not mediately, but immediately known, as a color or a sound. It is known, not as idea representative of a spirituality, but as spiritual reality itself. But this spiritual reality immediately known, in and by the individual, necessarily involves and presupposes a spirituality wider than itself, and comprehending other and all individualities, and even the world itself through its ideals of the good, the true, and the beautiful.

It can readily be seen that there is a measure of misrepresentation of this philosophy in calling it an idealism, even a *new* idealism. It is more and other than that. Being a philosophy of life as spiritual, it involves more than idealism, which names but a part of its totality. It is a spiritual multiplicity far richer than any meaning of idealism can name.

From this fundamental conception of the opulence of the spiritual life, other systems are criticized as partial and superficial and as misrepresentative of the life immediately known. It is shown that the necessary implications of these systems transcend the systems themselves. What they are is possible only through the implied existence of something beyond that recognized in them, a spirituality active and creative from itself.

This active creative spiritual life known immediately in individual experiences involves a life transcending itself, which is its basis. This—the independent spiritual life—is ever embodying itself in systems of life.



Philosophies grow out of these life-systems and are ideal representations of them. But they come and pass as the life-systems out of which they grow. They "have their day and cease to be." There is no final philosophy, as there is no arrival at its terminus of the independent spiritual life, which is at once the basis of all systems of life and of all philosophic representations of those life-systems.

From this fundamental conception of the essential character of life it can easily be seen what is life's ideal. It is spiritual fruitfulness, larger, fuller, more manifold spiritual realizations. Not freedom from suffering, not external deeds, acquisitions, or civilizations, but fuller life of spirit. All human attainments are but means to this life's ideal.

This brings us to what is probably the most significant practical aspect of Eucken's philosophy—what he names *activism*. The human individual spirit is called to strenuous creative endeavor in realizing this spiritual fruitfulness. All systems of thought must be measured by their bearing on this one ideal. Failing to be means to this end, they are so far not representative of the spiritual life that is, and are so far false. Contributing to fuller realization of the spirit they are so far true.

These statements suggest the kinship of Eucken's philosophy to that of William James, Bergson, and the adherents of the personal idealism of England. The likenesses are significant, but the differences are as great. It is impossible to discuss these matters here. It will be sufficient to indicate the characteristic quality of Eucken's philosophic attitude.

As the seer and prophet of the spiritual life, he has no personal animus against the systems of others or for the system one may call his own. That the spirit of man may be delivered from its present barrenness and enter into its large inheritance is his one desire. Whether his thought or another's be the pathway to that imperative goal is of small consequence. That man be moving in that direction is important. The direction is all we shall hope to know. The active endeavor to move thereon is man's imperative vital need and ethical law. The criticism will at once be made that this philosophy is practical rather than theoretic, ethical rather than rational. The obvious reply from the point of view of this philosophy is as follows: The sole guarantee of the validity of any so-called theoretic truth is in its practicality.

Of course this philosophy is open to the attack of every current philosophic system starting from other bases than that on which this is founded. It is not necessary to name and discuss them here. In reference to the charge that it is essentially mystical, it may be confessed that it is true. But the reply may be made that other systems escape the charge only as the ultimate facts of life are ignored, and a scheme of thought is built up without reference to the final mysteries in which all existence is concealed.

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COLUMBIA UNIVERSITY.

## JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. July, 1912. *Bergson and Pragmatism* (pp. 397-414): A. W. MOORE. - Bergson's three doctrines of instrumentalism, anti-intellectualism, and evolutionism are supposed to contain his chief points of contact with pragmatism. Current attention has been given, wrongly the writer maintains, to the first two. Emphasis is laid upon the differences between the instrumentalism and anti-intellectualism of Bergson and that of pragmatism. Pragmatism receives most from Bergson's evolutionism. *The Relation of Consciousness and Object in Sense-perception* (pp. 415-432): FRANK THILLY. - Is opposed to the neo-realistic theory of perception respecting numerical identity of object in and out of the perceptual situation. "All we can say is that a conscious organism perceives a real object in a certain way, according to the mental and physical factors involved." *Descriptive and Normative Sciences* (pp. 433-450): GEORGE H. SABINE. - The traditional distinction between descriptive and normative sciences is untenable, not because all sciences are descriptive, but because they are all normative. The rôle of valuation, though often concealed in the so-called descriptive sciences, is an essential part of the method of all science and is always present in scientific development. *Discussion: Consistency and Ultimate Dualism* (pp. 451-454): W. H. SHELDON. - Replies to Professor Creighton's criticism, the criticism being to the effect that Mr. Sheldon's attempted reconciliation of idealism and realism is incomplete. *Reviews of Books*: L. Lévy-Bruhl, *Les Fonctions Mentales dans les Sociétés Inférieures*: GEORGE S. PATTON. Ralph Barton Perry, *Present Philosophical Tendencies*: EVANDER BRADLEY MCGILVARY. John Eloy Boodin, *Truth and Reality*: ELLEN BLISS TALBOT. F. Rauch, *Études de Morale*: LOUIS W. FLACCUS. *Notices of New Books. Summaries of Articles. Notes.*

REVUE PHILOSOPHIQUE. July, 1912. *Essai d'une classification du Mystique* (pp. 1-26): F. PICAUVET. - The three classes are (1) those who seek of themselves the development of personality and union with supreme perfection, (2) those who appeal to God to realize in them a higher personality, and to unite them with God, (3) those who no longer yearn for individual perfection, but suffer all physiological and psychological misery. The first class is rare and the third most common. *La philosophie russe contemporaine (1er article)* (pp. 27-64): SELIBER. - A surprisingly rich field. This first article contains only a part of the contributions touching the theory of knowledge. More will follow as well as the treatment of other problems. *Les mouvements et l'activité inconsciente* (pp. 65-81): TH. RIBOT. - What persists in unconscious mental states is the kinesthetic portion of consciousness. The unconscious is an accumulator of energy, which consciousness can dispense. *Analyses et comptes rendus*. J. Ward, *The Realm of Ends, or Pluralism and Theism*: A. LALANDE. G. Simmel, *Mélanges de philosophie relativiste*: A. JOUSSAIN. Kuhlmann, *Zur Geschichte des Terminismus*: A. L. Foerster, *Pour former le caractère*: FR. PAULHAN. *Notices bibliographiques. Revue des périodiques étrangers.*



- Del Vecchio, Giorgio. *Il Progresso Giuridico*. Rome: Reprinted from the *Rivista Italiana di Sociologia*. 1911.
- Del Vecchio, Giorgio. *La Comunicabilita del Diritto e Le Idee del Vico*. Trani, Italy: Veechi e C. 1911. Pp. 13.
- Del Vecchio, Giorgio. *Sulla Positivita come Carattere del Diritto*. Modena: Formiggini. 1911. Pp. 24. L. 1.
- Holt, Edwin B., Marvin, Walter T., Montague, William P., Perry, Ralph B., Pitkin, Walter B., Spaulding, Edward G. *The New Realism*. New York: The Macmillan Company. 1912. Pp. xii + 491. \$2.50.
- Limentani, Ludovico. *I Presupposti Formali della Idagine Etica*. Genoa: A. F. Formiggini. 1913. Pp. xii + 541. L. 7.50.
- McDougall, William. *Body and Mind*. London: Methuen and Company. Pp. xix + 384. 10s. 6d.
- Morgan, C. Lloyd. *Instinct and Experience*. New York: The Macmillan Company. 1912. Pp. xvii + 299. \$1.50.
- Robinson, A. T. *The Applications of Logic*. New York: Longmans, Green, & Company. 1912. Pp. x + 219. \$1.20.

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## NOTES AND NEWS

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on November 25. The following papers were read: "Difference-Tones and Consonance," by Professor F. Krueger, Professor of Philosophy and Psychology, University of Halle-Wittenberg, Kaiser Wilhelm professor in Columbia University; "The Attempt to Measure Mental Work as a Psycho-Dynamic Process," by Professor Raymond Dodge, of Wesleyan University; "The Psychology of the Earthworm," by Professor Robert M. Yerkes, of Harvard University.

DR. ÉMILE BOREL, professor of mathematics in the University of Paris, and assistant director of the Ecole Normale Supérieure, presented a scientific address in connection with the dedicatory exercises of Rice Institute, October 10-12. On November 6, Professor Borel delivered an address at Princeton University on "Non-analytic Monogenic Functions"; on October 22, he gave a lecture at the University of Wisconsin on "The Employment of Probabilities in Mathematics and Physics"; at Columbia University, November 19, he delivered a lecture on "Scientific Studies in France."

DR. KARL MARBE, professor of psychology at the University of Wurzburg, and director of the Institute of Psychology, has undertaken, in collaboration with Dr. W. Peters, privat-docent of psychology at the same university, the publication of a new review entitled *Fortschritte der Psychologie und ihrer Anwendungen*. Particular attention will be given

to the applications of psychology and to the services which psychology is capable of rendering to philosophy, science, and business. The price of each number is 3 Marks.

A GIFT of 100,000 Marks was made to the Jewish Institute of the University of Marburg by Herr Brunn, of Berlin, on the occasion of the celebration of the seventieth birthday of Professor Hermann Cohen. The fund is to be used for the establishment of a Hermann Cohen professorship.

THE course of public lectures inaugurated by members of the faculty of Princeton University on "Some Aspects of the Renaissance" will include "Philosophy," by Professor Kemp Smith; "Natural Science," by Professor Trowbridge; and "The Medieval Mind," by Dr. Stewart Paton.

PROFESSOR T. H. HAINES, of Ohio State University, has been granted leave of absence for the present year. He plans to visit a number of the psychopathological institutes of Europe.

M. ÉMILE BOUTROUX, honorary professor of modern philosophy at the Sorbonne, and director of the "Fondation Thiers," was recently elected a member of the French Academy.

JOHN MADISON FLETCHER, Ph.D., has been appointed assistant professor of experimental and clinical psychology at the Newcomb College School of Education, Tulane University.

PROFESSOR BERGSON, of Paris, Professor De Vries, of the University of Amsterdam, and Sir William Ramsay, of London, have been appointed Woodward lecturers at Yale University.

AT Cambridge University, Professor R. C. Punnett has been selected by the Prime Minister and Mr. A. J. Balfour as the first Arthur Balfour professor of genetics.

PROFESSOR JAMES WARD will give the Henry Sidgwick memorial lecture at Newnham College on November 9. The subject will be "Heredity and Memory."

MR. F. C. AYERS, a graduate fellow of the University of Chicago, has gone to the University of Oregon as head of the department of education.

DR. SAMUEL W. FERNBERGER, of the University of Pennsylvania, has accepted an instructorship in psychology at Clark University.

PRENTICE REEVES, A.B., of the University of Missouri, has been made instructor in psychology at Princeton University.

DR. C. E. FERREE, of Bryn Mawr College, has been advanced to an associate professorship of experimental psychology.

THE Second Congress of Experimental Psychology will be held in Paris during next Easter vacation.



# THE JOURNAL OF PHILOSOPHY

## PSYCHOLOGY AND SCIENTIFIC METHODS

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### THE AMERICAN PHILOSOPHICAL ASSOCIATION'S DISCUSSION

AT the request of the committee on discussion of the American Philosophical Association, and with the cooperation of the leaders in the discussion, the editors are glad to print in this issue of the JOURNAL the following papers as preliminary statements of the principal topics to be brought forward.

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### HOW FAR IS AGREEMENT POSSIBLE IN PHILOSOPHY?

IN this brief paper I shall try to indicate a possible line of answer to the questions formulated in the programme of discussion arranged for the coming meeting of the Philosophical Association.

The term "science" is currently employed in two very distinct senses. It may mean thinking that is as rigorous, as enlightened, and as competent as our present knowledge of the factors involved in the problems dealt with will permit. All philosophical thinking, worthy of the name, may be presumed to be of this character, and as such will fall under the rubric of science in this broader meaning of the term. It will be grouped with mathematics and physics as well as with sociology, politics, and psychology. But the term is also employed, and as I think more advisedly, in a narrower sense to denote those disciplines in which there is a working agreement as to principles, methods, and results. By universal admission philosophy has not in the past been of this character.

Are we then to conclude that all knowledge worthy of the name is science, and that we can have no knowledge save in those regions where science has gained secure footing? Such a question answers itself. We can not defer having convictions in ethics and politics until the scientific expert is prepared to enlighten us upon the duties of life. And as history proves, we would not possess even the existing mathematical disciplines if non-scientific, tentative theorizing

had not seemed to our ancestors a legitimate and worthy form of attainable knowledge.

The nature of the distinction between science and philosophy may perhaps be interpreted somewhat as follows. Science deals with the isolable, philosophy with the non-isolable problems. Each science has been brought into existence through the discovery of a method whereby some one problem or set of problems can be isolated from all others, and solved in terms of the factors revealed within a definitely limited field of observation and analysis. Science is successful specialization. Galileo founded the science of dynamics by demonstrating that it is possible to discover the laws governing the behavior of bodies independently of any solution of the many metaphysical problems unsolved in the determination of the causes of motion. Newton transformed Descartes's speculative cosmology into a scientific system by a further extension of the same procedure. Darwin's triumphant achievement was similar in character. He successfully segregated the problem of the preservation of variations from the question, with which all that is speculative in biology is so inextricably bound up, of the nature of the causes determining their origin. Such methods of specialization prove acceptable to other workers in the same field, and their application leads to a growing body of universally accepted teaching.

It is frequently urged that science succeeds where philosophy has failed. But that, as history can demonstrate, is an entirely false reading of the actual facts. The sciences, when not simply new subdivisions within an existing science, and sometimes even then, are always the outcome of antecedent philosophizing. The coming into existence of a new science means that the earlier "unscientific" speculations have at length succeeded in forging conceptual weapons sufficiently adequate for the steady progressive solution of the problems dealt with. The creation of a science is consequently the justification of the relevant previous theorizings. But the objection will at once be restated in altered form. Philosophy is of value only in proportion as it becomes science, and it has already been displaced from every one of the fields of knowledge. Induction from observed facts has been substituted for *a priori* reasoning from fictitious premises. Philosophy, so far as it continues to exist in any form distinct from science, is merely the attempt to formulate solutions while our insight is still such as not to justify them. In the absence of the disciplinary rigor of observed fact, it freely indulges the caprice of temperament, and employs the arts of the special pleader to justify conclusions antecedently adopted.

Such objections, I take it, only show that even in devoted students of science the old Adam of circumscribed outlook may still survive.



The above attitude is merely the modern representative of the kind of objection that greeted the beginnings of speculation even in ancient Greece. And to any such sweeping criticisms the history of philosophy is sufficient reply. It is still what it has always been, the history of genuine insight in the making. For reasons entirely understandable Hegel is of evil repute with the majority of scientists. But surely in the field of the historical disciplines his influence has been fruitful to a quite remarkable degree. The list of historians and sociologists who have profited by his speculations would overflow the limits of many pages. I need only mention, as outstanding instances, Ranke and Zeller, Renan and Strauss, Proudhon and Karl Marx. Or to cite the work of an earlier thinker: Leibnitz not only shares with Newton the honor of discovering the differential calculus, he also formulated that programme of a universal logic which has since been so fruitfully developed by Boole, Peano, and Russell, and which has in consequence made so beneficial an eruption through the hard crust of the more traditional logic. The difficulties which we find in defining the present relation between science and philosophy would not seem to be due to any diminution in the influence which philosophy is exerting either upon science or upon general thought. They are largely caused by its more delicate and sensitive adjustment to the varied and complex needs of our modern life. It has learned to formulate its theories in more adequate terms and so can bring its influences more subtly and persuasively to bear. The interplay of influences is closer and more complicated than ever before.

The tasks of philosophy vary, indeed, with the needs of the age, and for that reason are all the more inevitably prescribed. The very certainty and assurance which the sciences have acquired in their several fields constitutes a new menace to the liberality of thought. The frequent unreliability of the expert in matters of practice is universally recognized; his dogmatism in matters broadly theoretical is less easily discounted, and may in the future prove insidiously harmful. Philosophy is still needed in order to enforce breadth of outlook and catholicity of judgment. It stands for the general human values as against excessive pretensions, whether in science, in religion, or in practical life, for the past and the future as against the present, for comprehensiveness and leisure as against narrowness and haste. The individual philosopher may not, of course, possess these qualities, but he at least lays claim to them, and is supposed to have earnestly striven to embody them in his own person, when he professes to give a theory of life that is genuinely philosophical. And though, perhaps, at some time in the very distant future philosophy may overcome the differences between itself and science, that is not a possibility which we can anticipate in any precise or even imaginative fashion.

ion. What truly concerns us is rather to define the actual relation in which, under present conditions, the two types of theoretical inquiry would seem to stand to one another.<sup>1</sup>

That brings me to the second part of my question. What is philosophy *in its distinction from science*? Philosophical knowledge, I should contend, differs from the scientific in its incapacity to answer any one of its problems without anticipating, in broad outline, the kind of answer that has to be given to all the others. In other words, it deals with all those problems for which no method of successful isolation has yet been formulated. The present position of logic may serve as an illustration. There is as great divergence regarding logical questions as there is in regard to ethical problems. And the reason would seem to be that the theory of the judgment and of the nature of universals has never yet been successfully segregated from the general body of philosophical doctrine. Bertrand Russell's analysis of deductive reasoning is inspired by his rationalistic epistemology, just as Mill's counter-theory is based on his sensationalist metaphysics. This is still more obvious when we come to such problems as the nature of consciousness or of our moral vocation. They involve considerations which reach out into all departments of life. They are humanistic problems, and carry with them into their theoretical treatment all the complexities and difficulties of a practical, ethical, and religious orientation towards life. They bring into play the whole man as well as all the sciences. The various philosophical problems can not be treated as so many separate issues and their solutions combined to form a comprehensive system. That would result in what Faguet, in speaking of Voltaire, has described as "a chaos of clear ideas." The specific characteristic of philosophical reflection is that in dealing with any of its problems it must simultaneously bear in mind the correlative requirements of all the others. Even when it finds its chief inspiration in some one specific field, it may do so only in so far as the insight thereby acquired can be shown to be supremely illuminating in other spheres.

<sup>1</sup> All the most important distinctions, even those that are most fundamental, are ultimately partial and in some degree relative. I am not concerned to maintain that the isolation of scientific problems is ever quite complete or that the sciences do not from time to time themselves become metaphysical. I also recognize that philosophy does in some measure experimentally employ methods of partial isolation within its own field. But in this brief paper I can take account only of the broader features of the intellectual landscape. Should these be properly surveyed, the description will yield an outline that no minuteness of detail need essentially modify. Science and philosophy may have community of origin, of logical structure, and of ultimate destiny; and yet may be most fruitfully interpreted in terms of their differences. The fact that mountain ranges have been ocean beds and may become so again does not affect the truth and utility of our modern maps.



But if the residual problems can only be solved in terms of a general philosophical standpoint, how is that latter to be attained? The answer—lack of space must excuse dogmatism of statement—lies in recognition of the manner in which the past history of philosophy predetermines, consciously or unconsciously, our present-day problems. Philosophy is to be found only in the history of philosophy, and each new system fulfils its mission in proportion as it yields an enlightening reading of past experience, a genuine analysis of present conditions, and in terms of these a prophetic foreshadowing of its own future development. The results of scientific research sum themselves up in definite principles and in prescribed methods. To that extent the scientist can dispense with the study of history. But this does not happen in philosophy, and the place of those principles and methods has therefore to be supplied by such guidance as the individual thinker can extract from the past development of the philosophical problems.

There are, of course, two paths, apparently independent, upon which philosophical truth may be sought. It may be discovered through direct historical study. It was largely so in the case of Comte and of Hegel. Or it may come through concentration on the present-day problems as in Spencer and Karl Pearson.<sup>2</sup> But in neither case is the procedure such as to completely dispense with the alternative method. It is easy to decipher the interpretation of past thought which underlies Spencer's or Pearson's thinking. It is some such hag-ridden reading of history as we find in Buckle's "Civilization in England." We can similarly single out the contemporary influences which controlled and directed the historical studies of Comte and Hegel. The alternative is not really between historical and systematic treatment of our philosophical problems, but only in both classes of thinkers, between the more competent and the less competent, between intellectual mastery and unconscious pre-conception.

My meaning will be made clearer if I draw attention to the obvious fact that the history of philosophy can not be written once and for all. It has to be recast by each generation to suit its own needs, to harmonize with its increased insight and altered standpoint. Ultimately every independent thinker must reinterpret it for himself. It is no less plastic to new interpretations than the present reality with which our analytic thinking deals. An adequate solution of philosophical problems and a valid interpretation of past systems must develop together. They mutually condition one another.

This practically amounts to a reassertion, in a more special form,

<sup>2</sup>It is significant how few examples of "unhistorical" philosophy can be cited.

of my previous contention that the problems of philosophy, as co-ordinating and humanistic, are non-isolable. They differ from the problems of the positive sciences, not only in the complexity of their data, but also in the impossibility of adequately treating them by any method exclusively analytic. They likewise demand an orientation towards history, and the application of the insight thereby acquired.

Proof of this may be found in the perennial character of the three fundamental types of philosophical thinking; naturalism, scepticism, and idealism. All three are in this twentieth century as vigorously assertive, and as eagerly supported by competent thinkers, as they have ever been in past time. While developing *pari passu* with the general body of human knowledge, they stand in a constant relation of interaction and mutual aid. Each in the struggle for self-maintenance compels the competing systems to develop on fresh lines, meeting new objections by modification of their former grounds; and in this process each progresses largely in proportion as it can profit by the criticisms rendered possible by the two opposing standpoints. The debt which modern agnosticism owes to the transcendentalism of Plato and to the phenomenalism of Kant is only to be matched by that which Plato owed to Heraclitus, and Kant to Hume. Present-day idealism is largely indebted for more adequate formulation of its views to the mediating function which naturalism has exercised in the interpretation of scientific results. That system, therefore, which is accepted as most satisfactorily solving our present-day problems will have to be viewed as being the goal toward which previous philosophies of every type have gradually converged. The history of philosophy can, indeed, be written from any one of the three standpoints in such manner as to demonstrate that all past thought has been contributory to its ultimate strengthening. The grouping, interrelation, and valuation of historical facts will vary in the three interpretations, but the entire content of each will be reinterpreted by both the others. The sceptic, for instance, can not, without self-stultification, without the tacit admission of the inadequacy of his philosophy, recognize the possibility of a *separate* history of scepticism. He must sweep into his historical net the positive teachings of the idealist thinkers; he must be able to assign a value to the mystical temperament, and to assimilate the results of the so-called positive sciences. In other words, his history must be a history of philosophy as a whole. Thus the type of system which a philosopher propounds determines, and is determined by the interpretation given to the history of philosophy. Only in proportion as he consciously realizes this, does he look before and after, and show the philosophic mind. And if we may argue not only from the past to the future, but from the character of the present situation to the remedy for its confusions and defects, surely we may conclude



that no one of the three standpoints has yet outlived its usefulness. Would not the liberality of thought and the progressiveness of philosophy be seriously endangered if only one of the three were to be permanently suppressed, or were no longer able to gain supporters willing to yield to it their whole-hearted devotion?

My position may be further developed by reference to the influence exercised by temperament. That this is very considerable can not surely be questioned. Frequently it is of an entirely legitimate and beneficial character, tending by its psychological influence to clarity of judgment. A pessimistic temperament may render a thinker more sensitive to the facts of evil, and more willing to recognize them for what they truly are. The mystic's firm personal footing in immediate experience may conduce to a more acute and open-minded recognition of radical defects in the mediating labors of idealist thinkers. No doubt in both cases the advantage will be counterbalanced by corresponding limitations which the temperament will impose; but that need not prevent us from recognizing the quite invaluable rôle which it frequently plays.

But it is one thing to recognize the psychological value of varying temperaments; it is quite another to view them as *justifying* the conclusions to which they may lead. Philosophy is an enterprise no less purely intellectual than science itself. In dealing with the immediate experiences of religion, of art, and of social and individual life, it must aim exclusively at theoretical interpretation. Such feelings can be reckoned with only in proportion as they are found to possess some cognitive significance. Even if we might assume that the various temperaments tend to generate specific types of philosophy, it would still have to be recognized that each must justify its preference by arguments that can be intellectually tested. But any such assumption is surely contrary to all experience. Is there any respectable type of philosophical system which may not afford adequate scope for all possible temperaments? The Marxian socialist is frequently mystical and idealistic in the enthusiasm of his materialistic creed; and many idealists are of the exclusively logical cast of mind. And as a rule temperament, it would seem, chiefly displays itself in some such manner. It does not so much determine the type of system adopted, as lend to it the emotional atmosphere in which it is suffused.

The really fundamental reason why equally competent philosophical thinkers may arrive at diametrically opposite results is not, I believe, to be looked for in temperament, but rather in the complexity of the problems, and in the limitations which personal experience, necessarily incomplete and differing from one individual to another, imposes upon us. Owing to the multiplicity of the elements which

we are called upon to coördinate, omission of certain factors and the distribution of emphasis among those that are retained, are all-important in determining the outcome. This, of course, affords temperament its supreme opportunity. But in ultimate analysis it is not temperament itself, but the complexity of the data that makes this situation possible at all. And the sole escape from the perverting influence of subjectivity lies in progressive intellectualization of the experiences which generate and support it. Recognition of temperament as a universally present and subtly illusive psychological influence does not in any wise conflict with the ideal demand for a rigorous enforcement of impersonal standards.

If thinkers can sincerely differ in such radical fashion, ought we not rather to argue that the material which awaits scientific treatment, and which meantime can only allow of the tentative insight that we call philosophy, must be extraordinarily rich in significant data, and must on fuller knowledge yield conclusions that will immensely deepen and greatly revolutionize our present theories?

The criticisms passed upon current systems for their lack of agreement would apply equally well to the pre-Socratic philosophers, and yet, arbitrary as their conflicting views may at first sight seem, there is surely no more fascinating period in the whole history of human thought. For we there find truth in its manifold aspects coming to its own through the devious channels of opposing minds. The pre-Socratics cooperated through their very diversity more fruitfully than they could possibly have done had they all belonged within a single school. What is purely arbitrary, merely temperamental, due to ignorance or confusion, is gradually eliminated, while the really fruitful problems and the truly helpful methods are retained and developed.

The willing acceptance by the individual of mutually irreconcilable beliefs, *i. e.*, pluralism within the individual mind, is the "happy despatch" of philosophy. The cooperative pluralism of divergent thinkers may, on the other hand, prove its salvation. Though logical consistency is a far from reliable guide in the affairs of life, it must none the less be accepted as a universally valid criterion of truth. The only field of legitimate pluralism lies outside the individual mind in the sphere of historical development, and in the encouragement in our present-day thinking of everything that favors individual reaction. For we have to recognize that while mutual agreement may perhaps be the ultimate goal, it can not reasonably be looked for in the near future. The situation does not allow of it. Should it come about, by the tyranny (it could be nothing else) of a dominant school, such as that of the Hegelian philosophy in Germany in the beginning of the nineteenth century, phi-



losophy itself would cease to fulfill its critical function, and the scientific philistine would deserve, for the greater good of his generation, again to reign supreme. When experts in science contrive to be of one mind, benefits result to society at large; but when metaphysicians consent to agree, philosophy may safely be counted as being on the decline. Science is able to discover more or less final truth, and so all scientists may unite to voice a common rejoicing; but philosophy with its merely tentative and always inadequate formulations must regard each step forward as a challenge for criticism, and as a call for counter-emphasis upon omitted facts. The duty of scientists is to arrive at mutual agreement upon fundamentals; the best service which one philosopher can do another is to supply effective and damaging criticism. No doubt such a mode of statement exaggerates the differences. But it is these that seem to me chiefly relevant.

I do not wish to argue against the formation of groups or schools. Thinkers tend to group themselves according to affinities. In the difficult task of developing a novel theory against the damaging onslaughts of ingenious and forceful opponents who will always have the advantage of deriving ready-made weapons from the armory of established and therefore more fully elaborated philosophies, the sympathetic backing of an understanding group is certainly a helpful and legitimate support. But such agreement does not, I think, require to be artificially fostered. It comes about of itself, and frequently in the most unlooked for fashion. When consciously sought, as it was in France under Cousin's domination of university teaching, it may all too easily prove dangerously harmful. Even when more or less unified groups exist, a member of one group may learn more from the members of opposed groups than from those of his own school.

Science, Bacon has declared, is a discipline in humility of mind. But surely philosophy is so in even greater degree. It is not gregarious like science—not even in conferences, for we meet only to learn from our mutual differences. Philosophy still pursues, in tenor of its ancient ways, a life solitary and itinerant, devoted to problems which may be illusive and refractory, but which seem to it to make up by centrality of interest for anything they may lack in definiteness of detail or in finality of statement. We here find one of the most striking manifestations of the influence of temperament. The scientist has a liking for the one type of problem, the philosopher for the other. May both continue to flourish to their mutual benefit! Probably the best aid to the their mutual understanding lies in a frank canvassing of what in the present situation would seem to be their ineradicable differences.

This indicates my answer to the last of the questions in the dis-

cussion programme. The point of view which inspired the elaborate organization of last year's discussion seems to me to involve an impossible ignoring of the radical differences between scientific and philosophical inquiry. Though both interesting and valuable as an experiment, it seemed to me, on trial, to have proved self-defeating. That did not happen through any fault of the committee on definitions; their difficult task was, I think, most admirably executed. But the initial agreement which they sought to establish was really impossible. Science may start from agreed principles and defined terms, since it has behind it a body of universally accepted knowledge from which such principles and definitions may be obtained. But it is just upon the question of how to define ultimate terms that all our philosophical disputes really turn. Such imitation of scientific procedure would therefore seem to be altogether impossible. The formulations given, whether of terms or of postulates, have to be lacking in precision in order to allow of use by differing disputants. And being indefinite they are ambiguous, and so defeat the very purpose for which they are formulated.

The committee's discussion programme for the coming meeting seems better calculated to achieve the purposes which our Association has in view. It does not assume that we can start from points of agreement; it aims only at better mutual understanding of our points of difference, in the hope that we may—for such is in almost all cases the sole outcome of friendly discussion on such fundamental topics—thereafter be more clear minded in regard to our own tenets, and better appreciative of the more inward aspects of our opponents posi-

<sup>a</sup> I can not resist quoting the following passage from the President-elect's "Constitutional Government" (p. 104): "Many a radical programme may get what will seem to be almost general approval if you listen only to those who know that they will not have to handle the perilous matter of action and to those who have merely formed an independent, that is, an isolated opinion, and have not entered into common counsel; but you will seldom find a deliberative assembly acting half so radically as its several members professed themselves ready to act before they came together into one place and talked the matter over and contrived statutes. It is not that they lose heart or prove unfaithful to the promises made on the stump. They have really for the first time laid their minds alongside other minds of different views, of different experience, of different prepossessions. They have seen the men with whom they differ, face to face, and have come to understand how honestly and with what force of genuine character and disinterested conviction, or with what convincing array of practical arguments opposite views may be held. They have learned more than any one man could beforehand have known. Common counsel is not aggregate counsel. It is not a sum in addition, counting heads. It is compounded out of many views in actual contact; it is a living thing made out of the vital substance of many minds, many personalities, many experiences; and it can be made up only by the vital contacts of actual conference, only in face to face debate, only by word of mouth and the direct clash of mind with mind."



tions.<sup>3</sup> Our purpose is increased understanding of what are almost certain to continue to be our lines of divergence, and not what, as I have argued, would under present conditions be a most undesirable consummation, mutual conversion to a common standpoint. Reciprocal enlightenment is surely more likely to descend upon us when each uses his terms in the individual manner that most naturally expresses the trend of his thought.

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### IS AGREEMENT DESIRABLE?

THE first question for debate before the Philosophical Association this season is more properly settled in print than on the floor. For the eye follows its discussion more readily than does the ear, inasmuch as the issue is one of pure logical analysis, not one of interpretation or discovery. I should therefore prefer to speak of it here and reserve my allotted minutes before the Association for the wider, more matter-of-fact questions with which it is concerned.

"Is continuous progress toward unanimity among philosophers on the more fundamental philosophical issues desirable?" So runs the query. And it bewilders me not a little. I am unable to regard it as a genuine interrogation, and for the following reasons.

The question is sensible, only if the desirability it asks about is not esthetic desirability but moral. "Desirable" here can not mean "appetizing" or "agreeable," for that would reduce the prospective debate to a mere census-taking of likes and dislikes. The discussion would be exactly as absurd as one over the pleasing flavor of sauerkraut. No, the real, the intended significance of the question must be this: "Does unanimity prove valuable, after all relevant facts have been weighed?" In other words, we have to do here with a moral problem, not with personal taste or mere immediate reactions.

Now, I suppose that nobody will deny that agreement on all ordinary moral problems is highly desirable. Where there is no accord, the people perish. For the issues of society, large and small, are such that united decision, followed by united action, is indispensable. Customs, traditions, manners, laws, and governmental institutions are but so many devices for bringing to pass, executing, and maintaining cooperations in thinking and acting. And they are necessarily such, because men live perforce in communities and, living thus, wish to thrive in comfortable peace, which they can do only by thinking out many difficult matters together and reaching a common conclusion. They can not trust either their impulsive personal reactions

or their personal encounters with other men or their private reasoning about affairs which they contemplate only from their private points of view.

How foolish, then, would he appear who sought to discuss whether agreement on the tax rate, or on child labor, or on the prevention of tuberculosis, or on public school appropriations were desirable! In honesty, there is no such question, once you admit that the problems are there awaiting discussion. It is sheer nonsense to ask whether agreement over the tax rate, for instance, is worth while: *For this very question presupposes that there is a tax rate problem, and the proposition that there is a tax rate problem presupposes a social order, citizens, public expenses, and the obligation to defray the expenses. And in this last presupposed situation there is contained the necessity of solving the problem by some sort of social enterprise, which, however its specific form may vary under varying circumstances, is in every instance some sort of cooperative thinking and acting.*

To all this most philosophers will give ready assent. But they will add: "What has it all to do with the question under debate?" Agreement over the tax rate is all very good, we shall be told; but agreement over the status of concepts or over the existence of gods or devils is a very different matter. The fundamental metaphysical issues lie in a realm alien to tax rates, and the solving of them is a matter of impression, temperament, point of view. Agreement over them is either an idle hope, or, if attainable, then profitless. But, I would inquire, can this opinion be defended by appeal to fact? Or is it prohibited by the very presuppositions of the alleged question in connection with which the doctrine is advanced? An inspection of these presuppositions may help us choose between the queries.

When we ask whether progress toward unanimity on fundamental philosophical issues is desirable, our question is, of course, material, not formal. That is, it expresses a doubt concerning a matter of fact, and the doubted matter of fact is indicated in and presupposed by the question itself. Now, what does this matter of fact contain? And what does it presuppose? Well, it either contains or presupposes (1) certain doubts, (2) certain doubters, and (3) certain matters which, with relation to certain basic relations (such as those employed in metaphysical explanations), are more fundamental than certain other (here indesignate) matters. And this last matter in turn presupposes that some matters are fundamental philosophically. Omit any one of these presuppositions, and the original question loses all meaning. What, for example, is the sense of asking whether agreement on any topic is desirable, if there are no doubts about it? What if there are no doubters? What if we do not as-



sume that there are fundamental philosophical issues? I take it, then, that the Discussion Committee—like myself and, I trust, like most other persons—assumes that there are doubters doubting about certain fundamental issues. But what follows upon these presuppositions? First and most disastrous, follows the implication that the question thus construed allows of no debate.

Consider what the presupposed existence of philosophic doubts implies materially. A doubt regarding any matter carries with it (not in mere logic, but in real life) the desirability of the doubt's annihilation. No demonstration can be adduced to strengthen this statement. The undesirability of doubt is a psychological axiom, just as the undesirability of pain is. It is an ultimate condition of life, and every human being is well aware of the fact. Before dwelling upon this, though, I must call attention again to the two meanings of "desirable" and warn the reader that doubt is undesirable primarily in the weaker sense of the adjective; that is, it is immediately, unreflectively undesirable, just as a color is immediately pleasant or sugar immediately sweet. Considered by itself, a doubt is something to be rid of; and to ask whether it is worth removing, is to utter an absurdity, *if we are talking about the immediate undesirability*. One might as well ask whether blue is a visible thing. In the higher and ethical connotation of desirability, though, a particular doubt may or may not be desirable; and the question about it is therefore justified. For, when we put the ethical query, we ask whether the removal of the doubt is going to involve the loss of something still more desirable than the clear cognizing of the doubted matter. Here, plainly, we are confronted with a problem of fact, and one which frequently proves intricate and obscure.

Now, as we had to construe the committee's original question as one which refers to just this ethical desirability and not at all to the mere esthetic flavor of philosophical agreement, we are at last in a position to see the difficulties of debating the topic. We are asked to decide whether agreement is desirable, but we are not informed of the particular alternative which is forced upon us. We have received no hint as to the nature of the conflict which generates the issue itself. We are forced, though, to presuppose that there is such a conflict, that there are alternatives, and that they are mutually exclusive. For were there no conflict between desirable things, nobody could reasonably ask whether any act or condition or possession or habit that was liked immediately was desirable. *For the moral issue is a question of preferences, and there is a question of preferences in the moral sense only when the attaining of one immediately desirable thing excludes the attaining of another. If this were not*

*the case, there could be no genuine question, inasmuch as all reciprocally compatible desirables are collectively desirable.*

We must seek, therefore, the incompatible alternatives which the committee has not designated. Judging from the entire context of the proposed debate, I am led to believe the query should be stated as follows: "Is progress toward unanimity more desirable than exclusively individual research?" And the assumption is that an advance toward unanimity is incompatible with individual research. If this is the assumption, one of two meanings may be placed upon it. It may mean that progress toward unanimity prevents individuals from thinking clearly and progressively. Or it may mean that individual thinking prevents progress toward unanimity. Which interpretation shall we choose, as a basis for the proposed discussion?

Certainly, every man who accepts the second presupposition must do so only on the strength of some still deeper metaphysical presupposition concerning the natural limitations of individual knowledge. He must hold that, in the very nature of cognition, there is some twist or whorl which marks off each mind's personal achievements from those of every other. If he does not assume this, he must either (a) assume the other alternative, or else (b) deny that the alleged alternatives are incompatible, thereby denying that there is any question as to desirability. If he chooses the latter course, there is no debate. Now let us suppose that he goes the other way. What then? He must make another assumption about the nature of individual cognition. He must assume that one man's reasoning disturbs his fellows—not accidentally, as through some mere misunderstanding over words or intents, but intrinsically in the very operation of comparing notes and arguing together. But obviously whoever assumes that assumes debate to be impossible; for debate is, by definition, an exchange and parrying of different men's opinions *over a single subject some of whose propositions have been agreed upon*. Men who differ completely on a subject can not debate *that*. They must at least come together in some one proposition concerning it, in order to fix a common universe of discourse.

Does it not follow, then, that no debate on the committee's first question is *logically* possible? For we have seen that desirability becomes an issue only when a choice is forced between incompatible goods; and we have also seen that, by assuming agreement and individual study to be incompatibles, we are driven into one of two metaphysical presuppositions about the inevitable limits of cognitive effort; and each of these presuppositions makes debate impossible for him who accepts the presupposition.

In conclusion, let me state my point in another, less exact but possibly more readily intelligible form. There is no sanity in asking



whether agreement on a given problem is desirable, unless the problem exists. For without the problem, agreement is neither wished nor unwished, neither good nor ill, neither consequential nor futile. Therefore, the Discussion Committee must raise the prior question for debate; *it must, in its first query, mean to ask us whether there are any fundamental philosophical issues or not.* And we who discuss should address ourselves to the novel task of deciding whether there is a problem of the concept, or a problem of the immortality of the soul, or a problem of God, or a problem of the relation of mind to body, or a problem of the status and function of perception. If all these do exist; if, that is to say, each one of them is a certain matter of fact which men have not yet come to understand, then the desirability of men's agreeing upon them is self-evident. But if there are no such issues at all—well, that is another story which only those who believe it should tell.

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## AGREEMENT

THE "task of philosophy" may indeed be infinite; hide whoever may behind this pretext, no "science" urges its infinitude as an excuse for lack of agreement amongst its workers. Is agreement desirable? *De gustibus*, etc. It would be better to ask: how much agreement is *necessary*? We of to-day are in a transition period, and I, for one, believe that the change in our philosophic thinking will be revolutionary. This makes any form of agreement more difficult, but also more tempting, more urgent.

Those who think a philosophical platform both "desirable and possible" do not look for merely *implicit* agreement: they are trying to make such agreement *explicit*. But they do not mean that everybody should agree with everybody else; nor that there should be complete agreement on all questions; nor that propositions on which an agreement has been reached should, forever after, be exempt from the tooth of time. We do not mean to stem the flux of time, to stop the growth of living thought; neither does the mathematician, nor the physicist.

There is a certain *modicum of agreement*, below which we can not fall and still discuss at meetings, agree or disagree.

(a) *There must be certain common problems.* If my problem is nobody else's problem, I might as profitably go into the wilderness and discourse with wolves and foxes. If our statements do not lie in

the realm of the same problem, our arguments neither agree nor disagree,—they are irrelevant to each other.

(b) It is not necessary that our solutions of the same problem should be *identical*; on the contrary, it is much better that they should *not*; but they should be *equivalent* with respect to truth.

(c) How is this possible unless there is a *common set of criteria* by which the solutions are to be judged? It is not the *definition* of truth which matters primarily, but the *criteria* of truth.

(d) Such a set of criteria requires, I believe, that the solution be of a definite *type*, *i. e.*, that there be agreement on the *structure* of the solution.

This modicum of agreement does not commit one to any "school of philosophy."

We may to-day go further, I think, than this: an agreement on *method* seems quite possible.

The whole platform question has been put in a new light by the appearance of the platform of the Six Realists, elaborated in their book "The New Realism." A discussion of the platform idea must lead to a discussion of this notable example of cooperation amongst philosophers.

On many points I find myself in substantial agreement with the Neo-Realists. We seem to differ on a point of method. I say "seem," because I believe that our positions here are complementary rather than exclusive of each other.

The Neo-Realists consider *analysis* as the prime method of exact thinking, sometimes even identifying the two. Analysis treats the problematic as a "complex" which it dissolves into the "simples" and their relations.

In its application to *logical* complexes (and these are the ones of particular interest to the philosopher) this method produces the *illusion* that the "simples" of a given "complex" are uniquely determined, *i. e.*, that there are certain "*indefinables*" and certain "*indemonstrables*" into which concepts and propositions ultimately resolve.

And it is *insufficient*; it shows that certain "simples" are present in a "complex"; but it does not itself show that these "simples" *exhaust* the "complex."

*Analysis*, as the "careful, systematic and exhaustive examination of any topic of discourse" is a necessary *preliminary*; and much of our philosophizing to-day can not get beyond this stage; but logic at least has proceeded to the second stage, the *synthesis*, in which the "complex" is *constructed* out of certain "simples."

This "*postulate-method*" is the necessary complement of the analytical method. It shows that "simples" are such only in a given



system; that what is a "simple" in one system may be a "complex" in another, and *vice versa*. It discards the criterion of "self-evidence." And it shows that many solutions of a given problem are possible; many systems of logic. But *vera philosophia una?*

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Die Philosophie des Als Ob. System der theoretischen, praktischen und religiösen Fiktionen der Menschheit auf Grund eines idealistischen Positivismus. Mit einem Anhang über Kant und Nietzsche.* H. VAIHINGER. Berlin: Verlag von Reuther & Reichard. 1911. Pp. xxxv + 804.

This important book, written more than thirty years ago, but not published until last year, when the author suddenly realized the kinship between his radical views and other revolutionary tendencies in recent philosophy, such as neo-Fichtean voluntarism, radical empiricism, pragmatism, Bergsonianism,—might well claim to be called, as its full title indicates, a critique of human reason. One may agree or not with Professor Vaihinger, but there is little possibility of misunderstanding a philosophy whose presuppositions are so clearly formulated. They may be summarized as follows: (1) All the reality that we are justified in assuming are sensations and their complexes (empiricism); (2) thought and being are not identical,—the former is but an organic function and has merely instrumental value (pragmatism); (3) thought, serving only as a means to the individual for the better orientation in the sensational flux, general terms must be regarded as having no other than a practical value (nominalism and anti-intellectualism). From these points of view Vaihinger develops the theory that *all* concepts, laws, and theories are merely fictions. Fictions, in Vaihinger's usage, are not identical with figments, such as centaur or fairy, nor are they hypotheses capable of verification. They are deliberate devices (*Kunstgriffe*) on the part of thought for the practical purpose of successful orientation in and perfect control over the environment. Theoretically they are absolutely valueless. Applied with a knowledge of their fictitious character, they will lead to the intended practical results, but used as hypotheses, they must necessarily create confusion and false theories, for a fiction is defined as that which is both contradictory in itself and which has no correspondence with reality (sensational flux).

To illustrate the nature of fictions, Professor Vaihinger has collected examples from various fields of thought. Many illustrations taken from mathematics will be regarded by modern investigators as antiquated, but those borrowed from other realms are certainly impressive. Dichotomous artificial divisions of nature (organic and inorganic, animate and inanimate, etc.); the Linnæan or other classifications of plants; over-simplifi-

eation, excessive abstraction, and over complication of the real world by all sciences; analogies in mathematics, economics, theology, and other fields; hypostatic, anthropomorphic, and animistic scientific concepts; ethical postulates, logical principles, and epistemological categories—all these are fictions in Vaihinger's sense, all these are deliberately artificial, mental constructs to which nothing corresponds in reality (sensational flux) and whose sole justification lies in their practical usefulness.

The epistemological lesson which Professor Vaihinger wishes us to draw from his "Fiction-Theory" is this: Knowledge of the real world by means of categories is impossible, since all categories are fictions, and discursive thinking consists in the application of fictitious static concepts to the real flux of sensations. The world such as we "know" it is an interpretation, but an interpretation by means of fictions. But although a "theory" of the universe is impossible, for the sake of useful and successful action certain fictions must be regarded as if they were more true than others. Truth is nothing but error constantly and progressively regulated. Thought with its complex of fictions may be compared to the mechanism of a machine. The ideal is to do the greatest possible amount of work with the least possible amount of effort. What screws, levers, pulleys, planes, and the like are to mechanics, fictions are to thought. As rational beings we must always operate with them, but our rationality consists in the recognition of their fictitiousness. And this, according to Vaihinger, is the tragedy of life—to live and to act as if fiction were theoretically true.

The task of logic is, according to this philosophy, very definite: the study of the relative usefulness of fictions. The business of a complete methodology is to bring order into the shifting fictions which humanity has invented in its struggle with the sensational flux, to classify them, to define their extent and limits, to assign relative values to them. But the logician should always remember that logic is not *Selbstzweck*; beyond their practical value all logical theories and systems as such are equally *nül*. This is "Critical Positivism," as Vaihinger calls his "theory," which he interestingly relates to Kant and to Nietzsche.

The obvious critical comment to be made upon this philosophy is that its presuppositions—unless they are thrust upon us dogmatically—demand a theoretical standard for their justification. The equation of reality with the sensational flux, the denial of theoretical interests for their own sake, the ascription of merely instrumental value to thinking and ultimate, or at least prepotent, value to acting—all these are theoretical assumptions which presuppose a meta-practical point of view for their acceptance or rejection. Besides, one may agree with the spirit of Vaihinger's "Fiction-Theory" without being forced into an admission of either his presuppositions or conclusions. That every science, because it offers a mere fragmentary view of reality, is dealing with fictions; that every science must for the sake of its practical interests regard its fictions as if they were true; that scientific truth may be looked upon as error constantly regulated,—are theses equally, indeed more, compatible with idealistic presuppositions and conclusions. But Vaihinger's book, though both



its fundamental assumptions and final theses may be rejected, is a philosophic work whose importance it is impossible to exaggerate. As a criticism of science it is an extremely significant contribution to the field of methodology and as an exposition of pragmatism,—though the author repudiates the title and scornfully identifies American pragmatism with mere utilitarianism,—it is the only coherent and systematic expression of this “new name for some old ways of thinking.”

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## JOURNALS AND NEW BOOKS

MIND. July, 1912. *On Relations; and in Particular the Cognitive Relation* (pp. 305–328): S. ALEXANDER.—As to relations in general, all are as substantive as their terms. As to internality and externality, neither alternative is strictly true. Knowing is the togetherness of a mind and its object. This relation of togetherness is extremely elementary and simple. It is experienced in “my enjoyment of the perceiving.” *Notes on the Problem of Time* (pp. 329–346): J. S. MACKENZIE.—A summing up of the main results of recent discussions of the problems of time. The results are stated in connection with, and chiefly in contrast to, Kant’s treatment of the subject. *The Analysis of ἑΠΙΣΤΗΜΗ in Plato’s Seventh Epistle* (pp. 347–370): A. E. TAYLOR.—Deals with the genuineness of a disputed passage (342a, 344d) in Plato’s seventh *Epistle*. Argues that “the whole section has a definite purpose, that its leading contentions are in principle sound.” Answers the charge of digression by maintaining the relevancy and connection of the passage and the charge of unintelligibility by translating and interpreting the passage. *The Ethical System of Richard Cumberland and its Place in the History of British Ethics* (pp. 371–398): FRANK CHAPMAN SHARP.—It is maintained that the ethical system of Cumberland is “one of the three or four most powerful influences in the history of British ethics.” An account of the system is given. The eighteenth-century British moralists were profoundly influenced by Clarke and Shaftesbury, and these in turn, it is held, based their moral systems upon the writings of Cumberland to an extent hitherto scarcely suspected. *Discussions: The Nature of Sense-Data* (pp. 399–409): G. DAWES HICKS.—An examination of Mr. Bertrand Russell’s view of sense-apprehension as set forth in his *The Problems of Philosophy*. *Euler’s Circles and Adjacent Space* (pp. 410–415): L. E. HICKS.—Points out the difficulties of diagrammatic methods in Logic. *Critical Notes*: B. Bosanquet, *The Principle of Individuality and Value: the Gifford Lectures (Edinburgh) for 1911*: J. E. McTAGGART. J. Ward, *The Realm of Ends, or Pluralism and Theism: the Gifford Lectures (St. Andrews) delivered 1907–1910*: A. E. TAYLOR. A. E. Taylor, *Varia Socratica*, First Series: H. W. BLUNT. W. Wells Denton, *John Wesley Young: Lectures on Fundamental Concepts of Algebra and*

*Geometry*: P. E. B. JOURDAIN. *New Books. Philosophical Periodicals. Notes.*

Calkins, Mary W. *Persistent Problems of Philosophy*. Third revised edition. New York: The Macmillan Company. 1912. Pp. xvi + 577. \$2.50.

Calkins, Mary W. *A First Book in Psychology*. Third Revised Edition. New York: The Macmillan Company. 1912. Pp. xix + 426. \$1.90.

Martin, Ernest G. *The Measurement of Induction Shocks*. New York: John Wiley and Sons. 1912. Pp. vii + 117. \$1.25.

Martin, Lillien J. *Die Projektionsmethode und die Lokalisation visueller und anderer Vorstellungsbilder*. Leipzig: Verlag von Johann A. Barth. 1912. Pp. 231. M. 6.

Moore, G. E. *Ethics*. New York: Henry Holt and Company. 1912. Pp. v + 256. \$0.50.

## NOTES AND NEWS

### LETTER FROM PROFESSOR LOVEJOY

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS:

In a review in a recent number of this JOURNAL reference was made by me to "the imposture in the pseudo-voluntarism of the neo-Fichteans." It appears that some readers have understood this phrase (a) to refer to absolute idealists in general; (b) to impute to those to whom it referred some sort of conscious and deliberate deceit. The former interpretation is, I believe, expressly excluded by the language of the paragraph in which the phrase occurred; the reference was plainly to a more limited school. But in any case, the word "imposture," since it doubtless may convey the implication mentioned, should, I think, be withdrawn,—not only as "unparliamentary," but also as ill-chosen to convey the criticism intended. My purpose—since I am not a neo-realist, and therefore am not so well acquainted with other men's minds as with my own—was not to dogmatize concerning the intentions, still less to judge of the motives, but to call attention to the actual result of the manner of expression employed by certain philosophers. The inevitableness of that result does, indeed, appear to me so clear that I find it surprising that it should not be clear to those who use the sort of language which is in question. But I have no ground for asserting that it is so, or for denying that the writers themselves were the first to be imposed upon by their own rhetoric. And even if that result has been in some degree foreseen by some of the writers criticized, their use of such modes of expression may well be, and doubtless is, due to highly honorable and amiable motives: to an irenic spirit which desires to maximize agreement with the prevailing beliefs of mankind; to a temperamental sympathy with those beliefs; or to a wish to put philosophy into terms that make for religious consolation or moral edification. These motives have, I surmise, greatly influenced



many of the most earnest and sincere philosophers, who have at the same time been religiously-minded or irenically-disposed philosophers, throughout history. But, whatever the intent or the motive, I can not but think a use of language which gives to a philosophical system—even, perhaps, in the eyes of its author—an air of meaning something not identical with its precise and entire logical import, is an unfortunate use. And the tendency—to which all of us are in some degree subject in philosophical writing—to accommodate common terms to meanings which differ in essence from the common meaning, seems to me to be in the long run detrimental to the credit of philosophy as a science.

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IN accordance with the plan recently adopted by the bishops in charge of the catholic institutions in France, the teaching of philosophy in these institutions is undergoing a reorganization and development. The movement started in the Catholic Institute of Paris and now Toulouse and Lille have undertaken a similar task. At Toulouse, the number of courses offered in philosophy has been increased from four to ten, while at Lille the institute of philosophy has been established. It is also reported that Mgr. Kiss delivered his inaugural address at the University of Budapest on "The Importance of Philosophy." He urged the faculty of philosophy of the University to found a chair of scholastic philosophy.

THE *Revue des Sciences Philosophiques et Théologiques* announces that all editorial matter should hereafter be addressed to the Couvent des Dominicains, Le Saulchoir, à Kain, Belgium, and all communications regarding subscriptions, etc., should be sent to M. J. Gabalda, Editeur, rue Bonaparte, 90, Paris, VI<sup>e</sup>.

DR. HUGO DE VRIES, professor of botany in the University of Amsterdam, gave two informal seminars at Columbia University, December 6 and 9, on "The Mutation Theory and Its Bearing on Evolution and Genetics."

THE twenty-first meeting of the American Psychological Association will be held in Cleveland, Ohio, on December 30, 31, and January 1.

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