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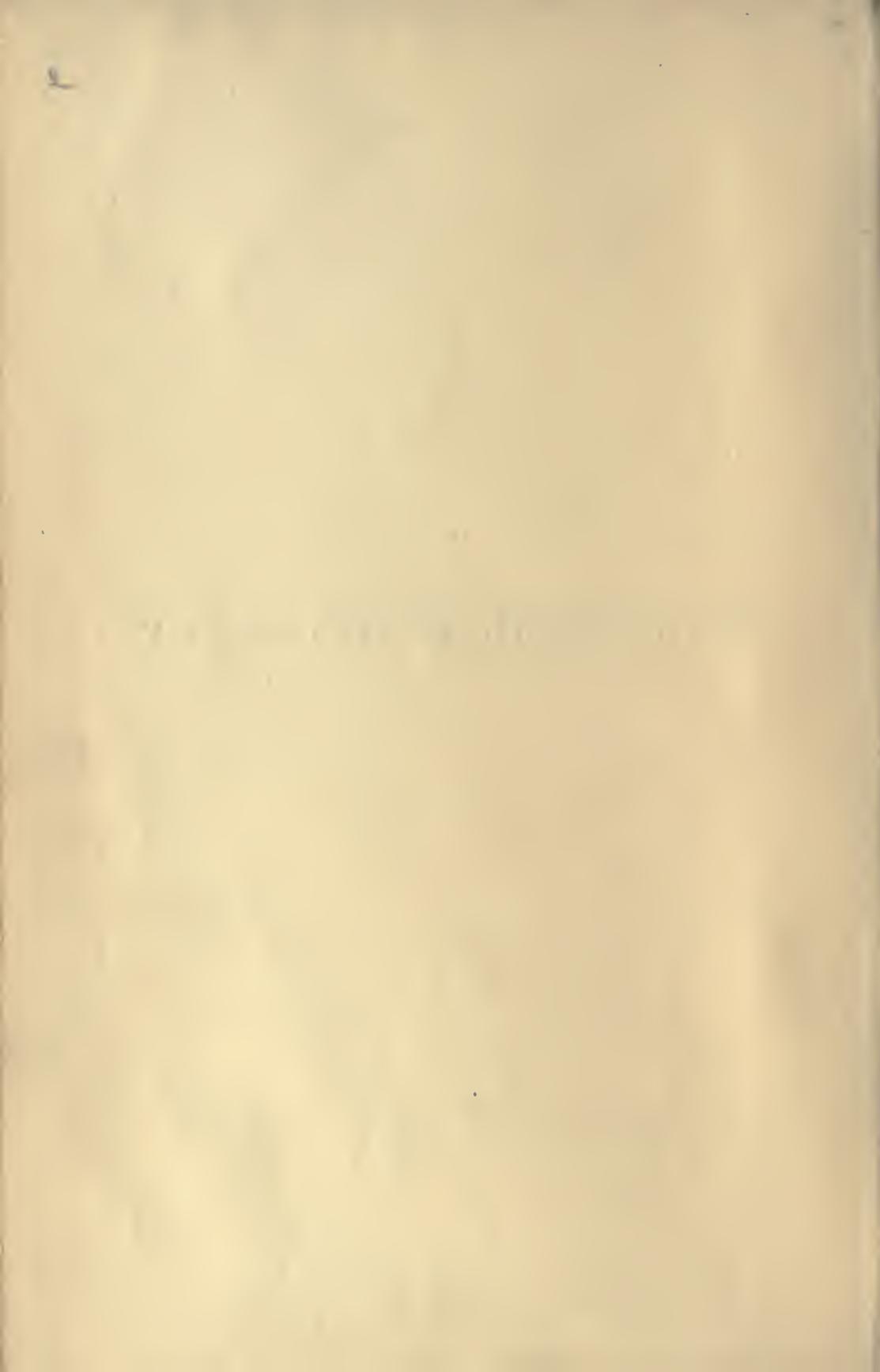
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SANTAYANA AND MODERN LIBERAL PROTESTANTISM

I

PROFESSOR SANTAYANA'S work has come in years when thinking men have agreed, in general, upon the necessity of readjustments in the theory of religion and ethics. To many readers his restatement is especially significant as an attempt to indicate (rather than discuss) how the doctrines and forms of an old theology and of a still older mythology, may in a sense be retained in a new world characterized by reason. To other readers the work is noteworthy as a step toward setting ethics free from the restraints imposed by alleged authoritative institutions, and even from necessities supposedly inherent in physical nature. The author's literary style calls up before one the picture of a river—for the most part, smoothly flowing; sometimes so profound that its surface is quite dark, but as often tossing up a spray of epigram to glisten in the sunlight; occasionally, it must also be said, bearing in its current and sweeping out to sea something which has long served as a landmark of conduct or as a foundation of faith.

He challenges the ancient claims of religion to the possession of literal truth and moral authority. For him the historic formulations of faith in an objective sanction of the religious experience are not expressions of any actual conditions, but are rather reflections of things not seen as yet, things whose true meaning lies in the fact that they are desired and dreamed. And correspondingly, the moral pronouncements and demands of organized religion are unwarranted; they express not what must be, but what may be. For Santayana there are objective factors involved in all thought and effort; but these provide starting-points and abiding conditions rather than sanctions. The sanctions of religion and morality are not existential, unless the subsistential can be said to exist; they are not actual, unless the possible is in a sense actual; they are not real, except as ideals are real. In religion, as in other human pursuits, the bases of things are of less importance than their fulfillments. The "life of reason" consists in an organization of ex-

perience with reference to ideal ends. In primitive nations magical rites and mythical interpretations of nature and society marked the beginnings of this organization. Particularly in Greece, myths about the gods served political and ethical ends. But during the Christian centuries, owing to an influx of Aristotelian metaphysics and oriental mysticism, the older religious mythology, with its ethical function, has been sublimated into a non-verifiable doctrine of the existence of God, with attendant anomalies in the doctrines of creation, providence and redemption. This metaphysical and mystical influx Santayana would purge away, restoring the ancient quality of the myths in a philosophy freed from any implications concerning the external existence of its objects, a philosophy in which Christian theology would be rendered into a dramatic representation, a poetic symbol for the ethical virtues of piety toward the past, spirituality toward the ideal future, and charity for one's contemporaries.

It is difficult to meet such an argument with anything but assent—it exposes so much extravagance and punctures so many pretensions, it offers so much in the way of emancipation, and of an unspoiled, Grecian-like view of the world. In favor of it there is the testimony of many who, making a virtue of what they deem to be a necessity, find that the values of religion and ethics which once involved existential concepts, survive for them as poetry with a beauty enhanced, because no longer subjected to the contortions and mutilations once suffered for the sake of conformity to a world of existences, and with an ethical effectiveness increased, because frankly including elements of the imaginative which are able to lift one above any too narrowly empirical levels and goals.

II

But there are other thinkers for whom existence is itself a capital element in value, and for whom ideal fulfilments seem too precarious, if all they have in the universe, beyond their own inherent excellences as ideals, is a kind of natural spring-board from which to leap up. One leaps up from a spring-board, but one afterward comes down. The men who do not follow Santayana might not deny that ideals are worth while for their own sake, regardless of God or freedom or immortality; but they would hold that any given ideal, if it can be objectively sanctioned, must be said to have at least an added value. Among these men are the theologians—and their position is bound to be more and more interesting as the argument develops. It must be admitted that among them Santayana is slow to attain adequate recognition—but fifteen or twenty

years is not long in the history of thought. Sooner or later the question will arise; What do, or what can, the theologians say?

The question has fresh significance not with regard to those theologians who say what they have always said, but with regard to the more liberal thinkers who would greatly modify, but still, in the large, justify the historic claims of the Church. For these latter, it would have to be argued, first, that the case of Santayana *v.* the theologians is a case, so to speak, not in law but in equity—one which should be tried, not according to the letter of ecclesiastical standards, but according to the spirit of contemporary thinkers, as yet not formulated into anything like dogma.

If this change of venue be allowed, attention ought to be called to some facts which it may be well to have on record for purposes beyond that of the present case, because critics of the Church so often fail to allow for them. The liberal Protestant thinkers are not troubled by the fact, for instance, that Hebraism took over Babylonian and Persian myths. Nor are they disturbed to think that Christianity took over a Hebraist Bible, or a Roman polity, or a Greek philosophy, or any other fruit of pagan custom or barbarian genius. It has never been any humiliation to Christianity to acknowledge its manifold indebtedness; the theologians, in fact, glory in this assimilative capacity of the movement and look to see it absorb other human values and achievements as it goes along. Modern Protestantism knows, again, that the ancient arguments for the existence of God, for his attributes of omniscience, omnipotence, and so on, and for the persons of the Trinity are to be reckoned not so much among men's logical achievements as among their psychological data—the facts are that men have tried to find God by thinking of him along these lines. But these unmanageable arguments are now seen to mark the limits of thinking rather than to constitute the fruits thereof. The liberal Protestants, no less than Santayana, accept these modifications of older views.

Of the chief points wherein they differ, one is made by those whom Santayana might call mystics, and the other by those whom he might call fanatics, but the Republic of Philosophy is a free country, in which epithets are not necessarily epithaphs.

First, a point easily allied with mysticism, though really independent of it. The liberal Protestant can still say that Santayana *does not disprove* the essential doctrine of theism; he shifts the ground of discussion, but he must still *leave room for faith*, whether the theologian can find anything positive to put in that room or not. Reason, says the theologian, need not expect to exhaust the content of religion—because religion belongs essentially not to reason, but to the wider realm of life. Reason is, after all, a dissection and a

fixation of reality; and the world of reality, in its basis as well as in its fulfilment, is at least as likely to be personal as to be impersonal. It is possible, perhaps even unavoidable, in thinking to separate the concomitants, and to say that everything social, personal, or teleological is in us, and that the rest of the world is impersonal and mechanical; or, as Santayana puts it (*Reason in Religion*, p. 249) "the value of existences is wholly borrowed from their ideality, without direct consideration of their fate, while the existence of ideals is wholly determined by natural forces, without direct relation to their fulfilment. Existence and ideal value can, therefore, be initially felt and observed apart." But the Protestant thinkers would regard this as a dubious way of dealing ultimately with the world. They hold that, however convenient such distinctions may be for certain purposes, there are other values which such a distinction cuts through and destroys. If this be mysticism, or anti-intellectualism, or absolute idealism, they would say, make the most of it; but one has to choose between some such inclusiveness of reason's distinctions within a living unity, or, on the other hand, a stopping short of an abstracting reason before any adequate account has been rendered of the concrete world.

So the first point of the theologians, albeit negative, would be that, with all Santayana says, there is still room for faith in an objective sanction of religious experiences. The second point would be that liberal Protestantism has something positive to offer as a content of faith. It is necessary here to be pious in the Santayanian sense, but it is also no more than just. Men for whom the absurdity of a *Hamlet* with the Prince of Denmark left out has passed into a proverb must in an estimate of Christianity afford more than a passing mention of its founder. For the Protestant theologians, accounts with Jesus of Nazareth are not settled when he is called the hero of an epic or one of the characters of a drama. There is no question among the theologians that myths galore have gathered around the historic character; there are wide differences of opinion among them as to how much in the records is picture and how much is frame. Many of them make the mistake of thinking of Jesus apart from the movement to which he gave the chief formative impulse; but some, like Troeltsch, would think of the two together—and it could then be said that not in Christ alone, but in Christendom, we have a great concrete social process which, like the Gulf Stream in the Atlantic, may show that the ocean of history is not altogether an unresponsive tumbling of waters. The liberal theologians regard the Christian movement as so significant that they can conceive nothing else worthy of the faith—which, as we saw, they regard as possible—than that

the movement is the human working out of a trans-human process, which they go on to identify with a superhuman plan. So far as the argument goes, it would appear that they might be content with a "religion of humanity," in which God could be thought of as "the common will." But, because the movement of Christendom is worth more to them than anything else in the world, they think of the rest of the world as involved with it and under the same auspices. Either, as idealists, they proffer a demonstration that it can not be otherwise, or else, as pragmatists, they say that the chance is worth taking, and that the belief progressively verifies itself. Value judgments, and processes by other names that mean the same, are the basis for a claim of a substantial truth and an attendant moral authority for the pronouncements of the Church. The Christian writings are held to be true in the sense that, although often cast in the forms of myth and legend, they record what are held to have been actual experiences with a superhuman power; and they are held to have moral authority in the sense that, although often formulated in outgrown and impossible precepts, they contain a fund of accumulated experience which can not be disregarded because it is linked up with that superhuman power, which either controls or aspires to control the universe.

Santayana apparently has in mind efforts like those of the pragmatists when he says (p. 206) "An oracular morality or revealed religion can hope to support its singular claims only by showing its general conformity to natural reason and its perfect beneficence in the world." The pragmatist theologians would reply that not all this is necessary—that the claims of Christianity to the measure of truth and authority noted above would be justified, even if not absolutely established, by showing that these claims do not contradict the requirements of reason, and involve an increasing measure of beneficence in an evolving world.

III

If the case were tried before a judge gifted with insight it might very well be adjourned pending the gathering of fresh evidence and its reformulation; for both Santayana and the Protestant theologians exhibit the same weakness—namely, a failure to thoroughly consider the problem afforded by the material universe.

In the case of Santayana, the problem is indeed considered; but the fact that he recognizes it leaves him open to a criticism of inconsistency. He says, in a passage above cited, that "a complete description would lay bare physical necessities in the ideals entertained and inevitable ideal harmonies among the facts discovered." Again (*Reason in Society*, p. 192), "The community recognized in patriotism is imbedded in a larger one embracing all living creatures.

While in some respects we find sympathy the more complete the nearer home we remain, in another sense there is no true companionship except with the universe." Once more (*Reason in Religion*): "Human life, lying as it does in the midst of a larger process, will surely not be without some congruity with the universe (p. 249)." "Why should we not regard the universe with piety? . . . Where there is such infinite and laborious potency there is room for every hope (p. 191)." But he does not follow out such possibilities, and it may be urged that it is somewhat premature to relegate all objective sanctions to the realm of poetry before such possibilities have been explored.

The older theologians disregarded the material universe as a thing evil and unworthy; the newer theologians, as we saw, adopt it into their theistic systems without any very close examination. They ground their arguments for objective sanctions elsewhere, and fail even to try out the constructive possibilities of materialism.

If it could be shown that there is ground for holding that the structure of the universe—or perhaps better, the structure of *a* universe large enough and detailed enough to correspond to the fields of the sciences—is like the structure of our bodies or our brains or our societies, we might have the benefit of considerations which are now scouted or disregarded. Such a structural resemblance if it could be demonstrated would not show in Fechnerian fashion that the universe has a soul, or a mind, or a consciousness; but it might show that such a soul or mind or consciousness as we manifest in our most significant social movements—that is, in our religions—is a kind of concentrated essence of the world-process, a focusing lens which unites in one image what would otherwise be a flood of imperfectly correlated rays. It is conceivable that thus the natural basis might be shown to have more kinship than Santayana allows with the ideal fulfilment.

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INTELLIGENCE AND BEHAVIOR

IT is now approximately four years since the appearance of the volume entitled *Creative Intelligence*, in which a group of writers undertook to set forth certain views concerning the nature and implications of intelligence. The doctrine of intelligence embodied in this book has recently been subjected to a keen and discriminating analysis by Professor Lovejoy.¹ The quality of the

¹ This JOURNAL, Vol. XVII., pp. 589-596 and 622-632.

criticism is so unusual in its insight and judicial temper that it can not be passed over in silence. It is easily the most penetrating criticism that has come from a hostile camp since the appearance of the book.

Before attempting to discuss the points raised by Professor Lovejoy, I wish to say that I have no authority to speak for any of my colleagues. Moreover, I have no desire to undertake a defense of the book in question. So far as Professor Lovejoy's discussion of my own essay in that volume is concerned, I am disposed to concede in advance that he has put his finger on a real weakness or worse. My present purpose is rather to contribute something, if I can, to the clarity of the points at issue, and in doing so to emulate his example of hewing to the line and letting the chips fall where they may.

The fundamental contention of Professor Lovejoy's articles, as I read them, may be briefly summarized as follows: The pragmatic doctrine of intelligence, with its emphasis upon the quality of "creativity" is an assertion of the efficacy of consciousness in the control of behavior. Negatively the doctrine is a rejection of the "self-stultifying idea" that thinking is "a vast irrelevancy, having no part in the causation of man's behavior or in the shaping of his fortunes—a mysterious redundancy in a cosmos which would follow precisely the same course without it."² This assertion of efficacy, however, is coupled with a second contention, for which the critic is unable to find sufficient warrant, *viz.*, the denial of interaction between mind and matter. To all appearances, this denial means that the pragmatist, in his iconoclastic zeal, must needs saw off the very branch on which he is sitting. How can mind be efficacious if interaction be excluded? The denial of interaction, so it would seem, is not based on a study of the facts, but springs from a prejudice against the belief in the existence of psychic "entities" or "states" which may become interpolated in the chain of causes and effects. Hence the attempt is made to give an account of intelligent behavior without having recourse to such entities, an account, however, which rests on a confusion, or, as the critic mildly puts it, on an "incomplete analysis." The point of departure is the contention that conscious behavior can be explained in terms of body and environment, without the intervention of a third order of fact as distinct links in the causal chain, to wit mind or psychic state. Intelligence is just a name which designates a peculiar form of control on the part of the environment. Presently, however, it appears that "control by the future" need not involve any explicit reference to the future; but this admission is not seen to carry with

² *Ibid.*, p. 632.

it the implication that conscious behavior has been robbed of its distinctive trait. "It is a description of 'intelligence' from which all that makes intelligence 'intelligent' has been expressly excluded as non-essential."³

As I have already intimated, Professor Lovejoy's criticism possesses more substance than just plausibility. Before going into details, however, I beg leave to give a brief restatement of the position under discussion, in the hope that a different distribution of emphasis will help to clear up the meaning of the doctrine and thus furnish a more serviceable point of orientation. The central feature of the doctrine is the contention that "consciousness" is identifiable with a certain unique type of control; in other words, that it involves a certain peculiar kind of stimulus. As a simple illustration of such stimulus let us take the hearing of a noise. The noise is, so far forth, just a noise, possessing various properties or qualities that are appropriate subject-matter for the physicist. But in addition to these qualities there is a further trait or quality, which is commonly left out of the reckoning, but which is of vital importance in the present connection. The noise causes the individual concerned to cock his ear, to turn his eyes, perhaps to get up and step to the window in order to ascertain the meaning of the noise. The noise has an indescribable "what-is-it" quality, an "inherent incompleteness," which is as much a part of the noise as heard as is any of its other traits. The limitations of my vocabulary do not permit me to go much beyond lame phrases, of the kind just used, to indicate this unique quality. A still more roundabout phrasing of the matter is that the noise is such as to set on foot activities which are directed towards getting a better stimulus. The listening and the looking are directed towards the end of completing the present incompleteness. So far, I submit the statement, bungling as it is, is just a statement of fact. It is precisely this elusive trait which Professor Mead,⁴ if I interpret him correctly, has identified with the psychic and which furnishes the clue to the peculiar type of behavior that is labelled in pragmatic doctrine as consciousness.

The illustrations of this "psychic" element are naturally taken by preference from situations of doubt and uncertainty, in which the "unfinished" character of the stimulus, the "blur" which attention seeks to eliminate, is sufficiently prominent to be recognized and abstracted without difficulty. It is true that on the level of experiences in which adjustments are relatively unimpeded this

³ *Ibid.*, p. 626.

⁴ "The Definition of the Psychological," *Decennial Publications of the University of Chicago*, Vol. III., Part II.

peculiarity of the stimulus is much less in evidence. By hypothesis, however, the conscious stimulus is conditioned throughout upon a conflict of reactions which require continuous adjustment, so that the type of procedure remains the same. If we accept the dictum of psychology that attention is coextensive with consciousness, there is warrant for the view that consciousness has to do with just this curious "incompleteness," by virtue of which the present stimulus makes provision for its own successor. And if we bear in mind that the incompleteness is intrinsic to the stimulus, or inherent in it, we seem to have come upon a trait which constitutes a genuine differentia of the psychic and which makes it possible to draw a sharp line between conscious and mechanical behavior. In so far as a stimulus is of this sort, behavior becomes "forward-looking"; it becomes behavior that is "controlled by the future." The stimulus that is sought is one that will adjust the conflicting reactions; but the process of securing this stimulus is always to some extent a matter of discovery, of trial and error, the empirical filling-in of an antecedent framework or outline.

From this standpoint it is clear that the status of the "psychic" in the scheme of things is different from that which is assigned to it in traditional doctrine. The psychic becomes a distinguishable aspect, but not a separate link, in the chain of causation. What we find here is, to all appearances, a concomitant and simultaneous development of stimulus and response, which calls for a category different from that of ordinary cause and effect as based on temporal sequences. The relation of stimulus and response is rather analogous to the relation of gravitation among physical bodies, or to the relation of the two poles in a magnetic field. For this reason the position under discussion undertakes to combine the assertion that intelligence is efficacious for conduct with the denial of interactionism. Behavior is conscious or intelligent, not because there are psychic links that get themselves inserted in the series of events, but because the process as a whole presents a specifiable differentiating trait.

The point at issue here can perhaps be given more substance and outline in connection with Lovejoy's comments on Dewey's charge that representationism violates the "continuity of nature" and is based, in the last analysis, upon "supernaturalism." In Lovejoy's view this charge is more relevant to Dewey's own position. Representationism is, at worst, a minor offender, since "after all, mere representationism is a function which, though external to the system dealt with by the physical sciences, does not disturb that system, or limit the applicability of the laws of those sciences." This is more than can be said for Dewey's doctrine, for "the control of 'things'

by a unique, non-mechanistic process of 'intelligence'—nay, the creation of new content of reality, the introduction into the physical order of genuine novelties, by man's reflection and contrivance—this is not a mere external addition to, but an interjection of a foreign element into, the system of nature known to physical science."⁵

This reply, as it seems to me, misses the point of the original criticism, which is directed towards the status of the mental or psychic. If I may venture to interpret Professor Dewey's meaning, his insistence on continuity is not in the least intended to rule out the possibility of new agencies or forms of activity. On the contrary, his aim is precisely to accord them proper recognition and to make provision for the advent of novelty, wherever it may occur. Nature is genuinely creative, not simply at the moment when consciousness arises, but all along the line. The product of hydrogen and oxygen is something that is wet; the chick, when hatched, exhibits a multitude of attributes or qualities that were not to be found in the egg. In all these cases we are in the presence of facts that are not reducible to their antecedents. The wetness that results from the combination of oxygen and hydrogen is undeniably a novel trait, yet it is continuous with the antecedent situation from which it emerges, in the sense that it occurs as the result of an orderly process of change taking place in this situation. In the case of representationism, however, if I read Professor Dewey's meaning aright, no room is left for any such change. The objects concerned necessarily remain wholly indifferent, so as to protect the integrity of knowledge, and the change is located elsewhere, *viz.*, in a hypothetical "mind" or "consciousness." The accusation of "supernaturalism" does not have reference to the advent of novelty as such, but to the belief in a novelty which is so "external to the system dealt with by the physical sciences" that all the king's horses and all the king's men are unable to put the *disjecta membra* together again. As against such discontinuity Professor Dewey's plea for continuity is pertinent and deserving of serious consideration.

This elaboration will perhaps serve to explain, at least in part, why instrumentalism is so reluctant to bring in mental states or psychic existences in accounting for conscious behavior. Its concern being with this distinctive character of the stimulus and the corresponding type of behavior, it can not afford to give countenance to entities or existences the chief purpose of which, so far as I can make out, is just to translate this distinctive character into mechanical equivalents. Traditional theory has always started with the assumption that physical objects are necessarily characterized by stark

⁵ This JOURNAL, Vol. XVII., p. 623.

rigidity and close-clipped edges, so that their mutations naturally fall within narrow boundaries. This restriction inevitably created the temptation to assume that consciousness must either be reducible, in materialistic fashion, to a mode of motion, or else be recognized as a totally different kind of entity, after the manner of dualism. The result has been the creation of an elaborate psychological stock-in-trade, consisting likewise of hard, finished products; so that, instead of gaining insight into the distinctive quality of conscious behavior we merely fell heir to the dreary problem of the relation of mind and body. The offense of concealing the true nature of the facts was not mitigated, but merely glossed over, by the insistence that psychology is concerned with mental *processes* and not with static entities, for the reason that this refinement had no relevancy to the peculiar and essential quality of the process involved in conscious behavior. Until this quality is recognized and emphasized, we are without a significant clue; when it is properly evaluated, the emphasis shifts inevitably from mental states in the traditional sense to this peculiar type of control as exercised by *objects*. As Professor Lovejoy rightly suggests, the principal quarrel of pragmatism should be with "mechanistic naturalism." My point just now is that we do not get off the plane of mechanistic naturalism in our dealings with the facts of experience unless we give a new interpretation to conscious behavior.

As was intimated earlier, however, Professor Lovejoy's criticism is, in part, well taken. The illustration of the razor to which he refers at some length is undoubtedly incorrect and misleading. The statement, indeed, that the perception of the razor as sharp is conditioned by the reinstatement of an antecedent reaction to a cut is presumably correct. But, as Lovejoy points out, the import of all this is simply (a) that the response is, in fact, adaptive, and (b) that the present response is the effect of a previous response in a similar situation. To put it differently, the response is "anticipatory" only in a metaphorical sense, *i.e.*, from the standpoint of a bystander, and so provides no distinguishing trait for its classification as conscious behavior. The justice of this criticism must be admitted. It is possible to go still further and argue that even if we assume an anticipation of an injury, we still have not reached an explanation of conscious behavior. Whether the quality "sharp" be perceived directly or be present as something that is indicated, *i.e.*, 'present as absent,' we still are concerned with objects, sensuous or conceptual, and not with behavior. To cite another passage from the essay in which the razor illustration occurs: "A quality such as 'sharp' or 'hot' is not mental or constituted by consciousness, but the function of the quality in giving direction to behavior *is* consciousness."⁶ This function

⁶ *Creative Intelligence*, p. 256.

of the quality is precisely what the illustration leaves out of account.⁷ The reaction to "sharp" figures in conscious behavior, not simply because it is a present reaction to a future injury, but because this reaction, through conflict with other reactions, gives to the stimulus the "unfinished" or "incomplete" character previously discussed and so induces the search for a better stimulus. It is this search which is "forward-looking" or "controlled by the future"; and, so far as I am able to see, it possesses this trait independently of any explicit reference to the future. The illustration in question fails to distinguish between "anticipation" which is either metaphorical or conceptual in character and "antieipation" as descriptive of the "unfinished" stimulus, and so far justifies the strictures which Professor Lovejoy passes upon it.

If we keep our eye upon this unique character of the stimulus, we get perhaps an indication of the direction in which we must go for an answer to Professor Lovejoy's question as to the conditions that determine the development of a conscious situation. "By virtue of what property or relation does one possible bit of content get attended to, taken account of, perhaps taken up into the organized plan itself, while other bits are ignored or eventually excluded?"⁸ It requires no argument, I take it, to show that the stimulus of the given moment necessarily varies with the situation, since no two instances of reaction are precisely alike. It follows, therefore, that the "better" stimulus which is demanded in order to harmonize the conflicting reactions will likewise vary. In the razor illustration, for example, if the reaction to "sharp" is to be harmonized with a conflicting reaction of reaching and grasping, the solution lies in picking it up so as not to cut the fingers; if the conflicting reactions are those connected with an effort to break a rope or string, the razor offers itself as a suitable tool; if the perception of the razor occurs as an intrusion upon some other process to which it is irrelevant, the adjustment is perhaps best achieved by permitting the object to drop from view. I have no desire, of course, to give an appearance of simplicity to processes which are, as a matter of fact, discouragingly complex, but neither am I able to convince myself that the endless gradations and colorings of what James calls the fringe are insufficient, in principle, to account for the entire range of conscious behavior.

If this interpretation of conscious behavior be conceded, we may hope that other seeming difficulties will shrink to smaller dimensions

⁷ This function of experienced qualities or objects is described more at length in the essay, pp. 246-250.

⁸ This JOURNAL, Vol. XVII., p. 629.

on closer approach. We need not, for example, take serious exception to Lovejoy's contention that concepts are "mental entities," in the sense that they may be "actually given at any moment in any context of experience, but can not be regarded as forming a part, at the same moment, of the complex of masses and forces, in a single, 'public' space, which constitutes the world of physical science."⁹ That concepts exist in some form and that there is a discernible difference between them and physical objects is an indubitable fact. The important issue is not whether concepts exist, but whether the classification of concepts as "mental" is to be made to accord with the foregoing theory of conscious behavior. If construed in the spirit of instrumentalism, concepts are essentially substitutes for sensuous objects; in Dewey's language, they are "tools" or objects occupying the peculiar status of being merely suggested objects. So far as conscious behavior is concerned, they function in much the same way as physical objects, in that they likewise present this distinctive "incompleteness" by virtue of which they control behavior in such fashion as to make it a quest for a more adequate stimulus. There is no ground for Lovejoy's contention that if concepts are admitted to their legitimate place, "it follows that, rightly construed and consistently thought through, pragmatism means interactionism."¹⁰ Unless we abandon the category of interactionism we are back on the level of mechanistic naturalism, from which the position of instrumentalism is intended to provide a means of escape.

I trust it has been made clear why I can not regard philosophy as under the obligation to furnish "a more serious and thorough examination of the psychophysical problem than it has yet given us."¹¹ The problem itself looks suspicious. If mind is the sort of thing it has been supposed to be in the past, then indeed there is no escape from the mind-body problem and the weary manipulation of categories such as interaction and parallelism. But if this is not the case, it may well be that the road of progress, to adapt a saying of James, does not lead through the psychophysical problem at all, but around it. At all events, it is worth while to put the suggestion to a serious test.

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⁹ *Ibid.*, p. 629.

¹⁰ *Ibid.*, p. 629.

¹¹ *Ibid.*, p. 632.

REVIEWS AND ABSTRACTS OF LITERATURE

Lehrbuch der Logik auf positivistischer Grundlage mit Berücksichtigung der Geschichte der Logik. TH. ZIEHEN. Bonn: A. Mareus & E. Webers Verlag, 1920. Pp. viii + 866.

The positivistic standpoint is concerned with the given, and Ziehen's "binomistic" analysis of this reveals (1) R-elements (a kind of knowable things-in-themselves) interacting according to the law of causation, and (2) the same R-elements entering consciousness by way of sensation, according to the law of parallelism. Our psychological experiencing, however, is variable and untrustworthy, liable to all sorts of confusions and mistakes.¹ On these there is only one natural check—the law of the singularity of becoming, the "gignomenological law of identity." According to this law, it is factually impossible for us both to think *A* and not to think in a single moment—*i. e.*, in the duration of a single act of thought. This natural check is, however, only momentary, and if our developed thinking is ever to give us a system of ideas, on the accuracy of whose correspondence with the interrelations of the R-elements we can rely, it will be necessary to rise above the fluctuating level of psychological experiences which are only to be trusted in isolated moments, and standardize our thinking in terms of logical norms.

This is done by extending the element of "identity" which we find in the simple momentary experience, so as to apply it to the complex constructs which constitute most of our ideas. We cut off certain contents from the flux of experience, and arbitrarily endow them with an ideal uniformity, *i. e.*, an identical core of meaning, which is fixed by a definition. As abstracted once for all from the continuity of becoming, such a general idea is more than a summing up of a certain group of past experiences. It has "transgressive" character, *i. e.*, constitutes a type, and contains "vacant places" to be filled by similar experiences arising in the future. The concept is thus a standardized or logical idea. Judgment is like a complex concept, consisting of at least *two* standardized ideas bound together, not by the accident of a fluctuating psychological association, but in a standardized or constant way, with at least partial coincidence in space and time. This coincidence in turn is, of course, standardized, *i. e.*, withdrawn from the flux of chance associations, and fixed by the mind so as to conform to the ideal demands of the principle of identity. So too with inference, which is a series of standardized judgments leading in a single direction

¹ *Alienationen.* Ziehen regards the *quaternio terminorum* as the type of fallacy *par excellence*.

and culminating in a conclusion which sums up the series in a standard way, also according to the demands of the principle of identity. Corresponding to these standardized processes are standardized objects or "things," which, at least in the first instance, represent hypostatizations or mental fictions. Fictitious, however, as they may be, they are yet essential if we are to think laws—constant, uniform relations between the R-elements whose interaction according to definite laws constitutes reality. For constant relations imply terms which are themselves constant, and while the terms may be, as least in part, fictitious, the relations are not.

Thus we see that, by the thorough-going use of the principle of identity which is found in our fragmentary thinking, we are able to construct standardized thought-complexes which are at least capable of representing the uniformity of law in the world of reality; furthermore, since (1) the elementary psychological experiences *are* the R-elements reflected in sensation, and since (2) the principle of identity, by the use of which we have built up our logical thought-complexes, is a "gignomenological" principle, *i. e.*, a principle according to which the R-elements themselves behave, it follows that our logical thought-structures, to a considerable extent at least, can correspond to the inter-relations of the R-elements which constitute the real. Precisely in such empirical correspondences, and not at all in reference to *a priori* standards, consist truth and knowledge.

To investigate the possibility of such correspondence on its *material* side—*i. e.*, to consider how far the results of our thinking represent adequately the factual situation—is, in detail, a question for the special sciences, and, in principle, a matter of theory and criticism of knowledge. It is only so far as the R-elements are (1) correctly apprehended by our senses, and (2) correctly standardized in accordance with the principle of identity, that we attain to material truth or objective validity. Logic, as a science, is concerned wholly with the second of these requirements, *viz.* the various applications of the principle of identity in such a way as to standardize our thinking. Logic is thus *formal* rather than *material*, and may be characterized as the science of concrepancy and discrepancy, or as the study of the formal uniformity of thinking, in virtue of which it is either correct or false.

Of the volume in which Ziehen lays down these positions and deduces their consequences in detail, the greater part is taken up by what we should call "prolegomena." There is an introduction, a history of logic (part I), an epistemological *Grundlegung*, a psychological, a linguistic, a mathematical (part II), and an autochthonous *Grundlegung* (part III), before we finally come to the logic

itself (part IV). This deals with the concept, judgment, inference, proof, and theory of the sciences (chs. 1-5). The writer apologizes for a certain condensation in this portion of the work, and lays the blame upon the rising cost of printing, promising, however, to publish elsewhere and at greater length what has here been abbreviated.²

The impression made upon the reader by these various divisions in which the subject is treated, is one of stupendous erudition. The book contains, in principle, a psychology and a theory of knowledge, as well as a logic, and a history of logic as well as a systematic logic. In every field, the views of other thinkers are referred to individually, voluminous references are given to the literature, and wherever the writer takes up a definite position, it is always after discussion of alternative positions as maintained by other writers, and with full reasons assigned for not accepting such alternative positions. The views thus discussed range over the whole field of the history of logic and epistemology, from Plato and Aristotle down to the German publications during the War Period. Authorities most frequently referred to are Plato, Aristotle, Wolff, Kant, the lectures of Schroeder, and the logics of Sigwart, Wundt, and Benno Erdmann. With an only slightly lesser degree of frequency he refers to the Stoics, Sextus Empiricus, Petrus Hispanus, St. Thomas, Leibniz, Arnauld, Baumgarten, Hegel, and Mill, as well as to the work of Husserl, Ueberweg, Bolzano, Brentano, Meinong, Trendelenburg, Heinrich Haier, Krug, *etc.* The views of these writers receive consideration on all topics of importance, and in more special cases the more special literature is further cited. The general tone of the book is thus one of simple omniscience.

That countless volumes from German libraries have "lain before" Ziehen, is beyond doubt. That he has either made, or has caused to have made and classified, countless extracts from these various volumes, is also beyond doubt. But that a single human being, who has spent a good part of his life publishing in other fields, should have been able personally to read and assimilate the whole of this vast material, seems antecedently improbable, and a careful examination confirms the suspicion that some of the apparent erudition is external and superficial. The student can not help observing that much of the historical part is concerned mainly with establishing the precise *words* used by the various authors, but that little or no attempt is made to penetrate behind the terms used, to what the author means by them. This is especially the case with the Greeks and Scholastics, but in the case of the moderns also, Ziehen permits slight differences

² As an example of such condensation, *cf.* p. 741, where, after a very brief statement of the syllogistic rule *re* two particular premises, he adds, in the text, "For thorough-going exposition, see Ueberweg, p. 351."

of phraseology to blind him to essential resemblances of standpoint between the view he is criticizing, and the view he is defending. Thus Locke is taken to task for his "extreme sensualistic standpoint, which gives no possible basis for the development of a scientific logic" (113, *cf.* 154). But Locke, as is well known,³ believes in a world of interacting substances, which become known to man *via* the simple idea, and the "modes" which constitute science are extensions of the simple idea by means of a standardization of the principle of identity. The content of knowledge is derived from the substances, and the form is an extension of the formal principle inherent in the simple idea, so that the modes, while arbitrary in the sense that they are mental constructs, still follow the main outlines of reality. The resemblance between this position, and the basic position of Ziehen himself, is so close, that if a scientific logic is impossible on Locke's principles, it must also be impossible upon Ziehen's, for he similarly founds knowledge upon sense-data given to us in isolated "moments."

So too in the case of F. H. Bradley. It is difficult, in spite of the frequent references to chapter I of the *Principles of Logic*, to believe that Ziehen can ever really have read the whole of that chapter. Thus, he criticizes Bradley's well known formula for judgment, on the ground that in "This is an oak," *not only* "this," *but also* "oak" refer to reality (!) (620). Furthermore, in his treatment of analysis and synthesis, he displays complete ignorance of Bradley's very important demonstration of their inter-connection. In actual fact, there is a fairly close general resemblance between Bradley's idea of the "reference to reality," and Ziehen's own account of the existential element in judgment (632).

In the case of Plato, who is referred to very frequently, there are sins of commission and sins of omission. Thus, we are informed that while Plato has no technical terminology, *dianoia* is his frequent equivalent for *Urteil*. To the best knowledge of the reviewer, *dianoia* is nowhere employed in this sense. As a rule, it is the equivalent of "mind" or "intellect" used in a somewhat general sense. In a passage to which Ziehen perhaps refers (Rep. 511), it means the intellectual attitude of the scientist, *Verstand* as opposed to *Vernunft*, in Kant's terminology. Ziehen appears to be wholly ignorant that authorities like Bonitz and Natorp regard *doxa*, *doxazein*, and kindred expressions, as the nearest equivalent to *Urteil*. Again, in dealing with the "co-ordinate" view of affirmation and negation, he claims in a historical note that the view probably goes back as far

³ Cf. Lodge, *The Meaning and Function of Simple Modes in the Philosophy of John Locke*, 1918, ch. V.

as Aristotle. The treatment of negation in the *Sophistes* sufficiently proves that the view discussed goes as far back as Plato, but Ziehen appears wholly ignorant of this. What is still more astonishing, is, that he quotes Natorp in the same note, but appears to be unaware that Natorp rests definitely upon the Platonic treatment in the *Sophistes*. In general, it may be said that, in dealing with Greek writers, Ziehen tends to rest upon poor authorities (Zeller, Gomperz, Lutoslawski).

There are many similar ignorances. Thus, in spite of a careful analysis of Mill, he misunderstands Mill's treatment of the "representative idea" theory, and appears wholly ignorant that the famous "methods" (as has been pointed out by S. H. Mellone) are not original, but are derived from Herschel. Even with present-day writers in Germany, he is at times in error. Thus to state that Wundt "returned to the ancient tradition" of formal logic (203) is, in a sense, true, but misleading, and hard to reconcile with the further account of Wundt's work (209), as well as with the preface to Wundt's *Logik*. But the criticism of Wundt, as making analysis the sole characteristic attribute of judgment (367) is worse than misleading, as it is plainly contradictory in spirit and in letter to p. 162 in Wundt's *Logik*, where it is explained that judgment is the analysis of a thought (*Begriffszusammenhang*) which has arisen (genetically) by *synthesis*—a position closely resembling Ziehen's own. So again, even in the case of Erdmann, Ziehen appears wholly ignorant that he has Erdmann against him on the value of treating the concept "at the head of his theory." Not only Plouquet and Gruppe, but also Erdmann is to be counted among those who relegate the doctrine of the concept to the *Methodenlehre*.

These examples furnish, perhaps, sufficient evidence that Ziehen's omniscience is in part merely apparent. But let us leave these questions of erudition, and turn to the logical doctrine itself, and take the distinction between concept, judgment, and inference, as a test of Ziehen's powers of analysis. The relation between the concept and judgment, Ziehen treats as follows: Judgment can be considered either as a process taking place in time (without prejudice to its logical, *i. e.*, standardized, character), or as the result of such a process. The concept, however, is considered as the result of a process, never as a process. The difference between them is thus, that judgment possesses the characteristic of succession, whereas the concept does not. This difference is established by refusing to compare concept and judgment from a single standpoint. Regarded as processes, the process of concept-formation and the process of judging are indistinguishable (p. 372). Regarded as results, the concept—at

any rate the composite concept—and the judgment are indistinguishable (604). Yet the concept is declared to be psychologically and epistemologically prior to the judgment (453). How the flat oppositions between these standpoints are to be reconciled, is nowhere made clear.

On the relation between judgment and inference, he is scarcely more satisfactory. The following distinctions are twice enumerated: (1) Inference always consists of a number of judgments (at least two), while the (compound) judgment, though it may be analyzed into a certain relation between two judgments, still, as judged, expresses essentially a unity—*i. e.*, apprehends, in a single act of thought, the relation between the two contained judgments. (2) The judgments which together constitute an inference are so related that they lead to a single judgment (the conclusion) which “dominates” the series. (3) The element of succession is peculiarly prominent in inference. The principle of distinction here is identical with the principle by which Ziehen endeavored to distinguish between concepts and judgments. He regards the judgment as a result, and inference as a process, and refuses to compare them from one and the same basis. He is, of course, far too good a psychologist not to know that *every* judgment, as actually judged, is reached by inferential processes which sum up evidence derived from experience, and terminate in a sort of conclusion, so that, as processes, judgment and inference are indistinguishable (702). Similarly, the result of inference—*viz.*, the conclusion, in which, the ground *M* being “eliminated,” we are left with *S is P*—is explicitly recognized as a judgment: so that, as results, judgment and inference are indistinguishable. But he steadily refuses to recognize the essential identity of conception, judgment, and inference, and utterly fails to see the serious inconsistencies into which his persistent refusal leads him.

On induction, he is weak. He believes that nothing essentially new has been discovered since the work of Mill (*sic*), and makes the formal distinction between (1) conclusions which are on the same level of generality as their premises (equations), (2) conclusions on a lower level of generality (deductive reasoning), and (3) conclusions on a higher level (inductive reasoning). There seems to be no insight into the nowadays well known fact that *all* our thinking is both inductive and deductive, and consequently his treatment of the Archaeopteryx as an example of inductive reasoning from a single instance, is puerile and out of date. His work in this field is formal and conventional.

So much by way of negative criticism. In spite of these and similar deficiencies in respect of logical penetration, and in spite of

occasional lapses from the high standard of erudition which he has set himself, there is still a definite place for his book. With its copious masses of references to the literature, it is a perfect mine of useful information, and in matters of detail, it is full of suggestions and points of view which are substantially new. Thus, the graphical treatment of the various types of opposition between concepts leads to results which are new. The treatment of definition, for all its wearisome elaboration of detail, is largely admirable (especially in the summary), and largely new. His recognition of the value of two particular, two negative premises, of the value of arguments from the affirmation of the consequent, *etc., etc.*, is largely new—in print, at any rate—though his conclusions are hardly as far-reaching as the case admits; and generally, throughout the book, there are to be found numerous passages which are either distinctly novel or distinctly illuminating. These are so numerous that it is impossible, within the limits of a single review, to treat them adequately. The value of the book, therefore, for students in our graduate seminars, is beyond praise. But if we look further and ask, is the book of so great value as to be esteemed above the books we already use—Erdmann, Wundt, Bradley, *etc.*?—we must answer in the negative. Ziehen's *Lehrbuch* will have to be considered, but only as one learned treatment among other treatments, of which none is more learned, but some are more profound.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. April, 1920. *Sir Thomas Wrightson's Theory of Hearing* (pp. 101-113): E. G. BORING and E. B. TITCHENER.—Wrightson presents many interesting mechanical and physiological facts concerning the nature and action of various parts of the middle and internal ear. These facts are of value but have not yet been developed into a theory of hearing. *On the Non-Visual Perception of the Length of Lifted Rods* (pp. 114-146): LOUIS B. HOISINGTON.—The perception of length arising from the lifting of a rod depends on the relations of the following impressions—intensity, time, pressure gradient and muscle strain. The perception of length can be synthetically produced. *A New Form of Stimuli for Lifted Weight Experiments* (pp. 147-151): SAMUEL W. FERNBERGER.—The use of hard rubber weights is suggested rather than wooden ones that vary in weight or metallic ones that give intense temperature sensations. *The Psychological Examination of Conscientious Objectors* (pp. 152-165):

MARK A. MAY.—The conscientious objectors were found to be superior in intelligence. There were three noticeable types, religious-literalists, religious-idealists and socialists. *The Vowel Character of Fork Tones* (pp. 166–193): A. P. WEISS.—The long *u* sound predominates for low tones while the *i* sound is found in high tones. *The Vocality of Fork, Violin and Piano Tone* (pp. 194–203): ESTHER L. GATEWOOD.—The *ū* and *ī* qualities are easily found in the low and high tones respectively. *Religious Belief and the Population Question* (pp. 204–207): WESLEY RAYMOND WELLS. The more religious have the highest birth rates which is evidence of its biological value. *A Note on Pen-Lapses, Initiated Visually* (pp. 208–209): JUNE E. DOWNEY.—In composition the cue is acoustic-vocal-motor. *Apparatus Notes From the Psychological Laboratory of Clark University* (pp. 210–211).—Protractor for color mixing, artificial daylight and exposure apparatus for memory experiments are described. *Notes from the Cornell Psychological Laboratory of Cornell University* (pp. 212–214): E. B. TITCHENER.—Descriptions of the following pieces of apparatus are given: (1) Electromagnetic control of stopwatch; (2) curve tracer; (3) models for the demonstration of sensory qualities; (4) sewing machine motor. *Note on the Experimental Study of Attention* (p. 215): K. M. DALLENBACH.—*Book Review* (pp. 216–27). Julius Pikler, *Anpassungstheorie des Empfindungsvorganges*: C. C. PRATT. *Book Notes* (pp. 218–219). William McDougall, *An Introduction to social psychology*. Elida Evans, *The Problem of the Nervous Child*. Th. Ziehen, *Lehrbuch der Logik*. Charles G. Shaw, *The ground and goal of human life*. J. C. Bose, *Life movements in plants*. Stewart Paton, *Education in war and peace*. Herbert E. Cushman, *A beginner's history of philosophy*. R. F. Alfred Hoernlé, *Studies in contemporary metaphysics*. Herbert Ellsworth Cory, *The intellectual and the wage workers*. C. A. Richardson, *Spiritual pluralism and recent philosophy*. Edward Carpenter, *Pagan and Christian creeds*. Leonard and Bianchi, *La Meccanica del cervello*. Michael Ornato, *Aphasia and associated speech problems*.

Alexander, Hartley Burr. Latin-American Mythology. (Volume XI. in *The Mythology of All Races*, edited by Louis Herbert Gray and George Foot Moore.) Boston: Marshall Jones Co. Pp. xvi + 424.

Naville, Adrien. Classification des sciences: les idées maîtresses des sciences et leur rapports. (Troisième édition, entièrement renouvelée.) Paris: Félix Alcan. 1920. Pp. 322. 10 fr. 50.

Nazzari, Rinaldo. Principî di Gnoseologia (Teoria della Cognizione).

- Turin: G. B. Paravia & C. 1920. Pp. xxiv + 272. L. 16, 50.
- Picard, Maurice. *Values Immediate and Contributory, and their Interrelation.* New York: New York University Press. 1920. Pp. x + 197. \$3.
- Rivers, W. H. R. *Instinct and the Unconscious: A Contribution to a Biological Theory of the Psycho-neuroses.* Cambridge University Press. 1920. Pp. vi + 252.
- Sweetser, Arthur. *The League of Nations at Work.* New York: Macmillan Co. 1920. Pp. 215. \$1.75.
- Thalheimer, Alvin. *The Meaning of the Terms: "Existence" and "Reality."* Princeton, N. J.; Princeton University Press. 1918. Pp. 116.
- Walston (Waldstein), Sir Charles. *Eugenics, Civics and Ethics.* Cambridge: University Press. 1920. Pp. 56.

NOTES AND NEWS

Beginning with this issue, the Editors, in response to repeated suggestions, have shortened the title of the *JOURNAL* to the form which is currently used in speaking of it, and which is more convenient for citation. The change in name implies no change in policy. That remains the same and may be expressed again, as *THE JOURNAL OF PHILOSOPHY* enters on its eighteenth year of publication, in words quoted from the first page of its first issue: "This journal does not protest against the spirit of specialization which makes our modern science and scholarship solid and strong, but it does protest against the prejudice that a detached specialization can give us the last word and can make correlation superfluous. It desires to stand for the unity of knowledge, aims to consider the fundamental conceptions which bind together all the specialistic results, seeks to inquire into the methods of science which bind together the scientific workers, and into the center of its sphere it puts philosophy."

A MEETING of the Aristotelian Society was held on December 6. Professor T. P. Nunn, Hon. Treasurer, in the chair. Professor W. P. Montague read a paper on "Variation, Heredity and Consciousness: a mechanist answer to the vitalist challenge." Bergson in France, McDougall in England, and Driesch in Germany, have attacked mechanistic philosophy, not only as inadequate to cope with the known facts of phylogeny, ontogeny and consciousness, but as definitely in conflict with them. In reply it was attempted to show

that in regard to each of the three sets of problems it is possible to point out a solution, statable in mechanistic terms, which at the same time provide full satisfaction to the demand of the vitalist that the purposive and psychic characters of life shall not be reduced to an epiphenomenal status of dependence upon blind processes, but recognized as genuinely operative factors in the economy of nature. In regard to the origin of useful variations, their rise in germ-plasm with greater frequency than is explicable on recognizable mechanistic principles may be explained by the conception of biological vectors. According to this conception the unpurposed yet purposeful products of telogenesis, not only in the germ-plasm, but in the brain when occupied with creative imagination, are results of a system of protoplasmic stresses. The problem of the manifold of hereditary determinants in the minute germ-cell may be met by conceiving the germ as a system of super-forces or superimposed stresses. These, which were compared to superposed twists in a rope, were embodiment of a manifold of invisible intensive determinants equal in richness, it was claimed, to the serial events of the germ's ancestral past and capable of unfolding and reproducing its own pattern by a kind of induction through the serial stages of embryonic growth. The more difficult problem of explaining mind in physical terms was met by the suggestion that the structure of conscious life is analogous to the structure of life in general and capable of being explained in the same way, except that the system of cerebral super-forces in which the past is stored up in the present, is composed of traces of potential energy acquired by the brain through the transformation of the kinetic energies of sensory nerve currents. For a physical interpretation of the essentially specific and quantitative nature of mental elements a new category "Anergy" was suggested, to stand for the form of durational being produced whenever the energy of motion is transformed into the invisible phase we call potential. At the conclusion of the discussion on the paper, the Chairman moved a vote of thanks to Professor Montague and asked him to convey the greeting of the Aristotelian Society to the American Philosophical Association, as representative of which and as chairman of its delegation to the Congress of Oxford in September Professor Montague had visited this country.

IN order to provide an enduring memorial for the one hundred and twenty-seven Field Service men who gave their lives in the war, and in order to perpetuate among future generations of French and American youth the mutual understanding and fraternity of spirit which marked their relations during the war, an organization has been established, known as the American Field Service Fellowships

for French Universities, formerly the Society for American Fellowships in French Universities. This organization proposes to award fellowships for advance study in France to students selected from American colleges, universities, and technical establishments and occasional fellowships for French students in American universities. These fellowships will, when endowed, be named after the men of the American Field Service who died in France; and it is intended, if sufficient funds can be obtained, to name a fellowship in memory of each one of these men.

The fellowships for 1921-22, not to exceed twenty-five in number, will be of the value of \$200 plus 10,000 francs, and are tenable for one year. They will be renewable for another year upon application, provided circumstances warrant it. These fellowships are offered in the following fields of study:

Agriculture	History
Anthropology	Law
Archeology and History of Art	Mathematics
Astronomy	Medicine and Surgery
Biology	Oriental Languages and Literature
Botany	Philosophy
Chemistry	Physics
Classical Languages and Literature	Political Science and International Law
Criminology	Psychology
Economics	Religion
Education	Romance Languages and Literature
Engineering	Slavic Languages and Literature
English Language and Literature	Semitic Languages and Literature
Geography	Sociology
Geology	Zoology

Applicants must be citizens of the United States and between twenty and thirty years of age. They must be:

1. Graduates of a college requiring four years of study for a degree, based on fourteen units of high school work; or,
2. Graduates of a professional school requiring three years of study for a degree; or,
3. If not qualified in either of these ways, must be twenty-four years of age and have spent five years in an industrial establishment in work requiring technical skill.

Applicants must be of good moral character and intellectual ability, and must have a practical ability to use French books.

Further information about the fellowships may be obtained from the Secretary, Dr. I. L. Kandel, 522 Fifth Avenue, New York.

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THE JOURNAL OF PHILOSOPHY

A CONCEPTION OF PHILOSOPHY

IT is with some misgivings that one embarks upon the adventure of telling philosophers what philosophy is about. It might prove as perilous as a similar attempt to disclose to artists the aims of art and the metaphysical implications of creative activity. Even though they should not take your words unto themselves—responding blandly “yes’m,” or waxing indignant at some unintentional imputation (and I know not which is the worse)—there is always the possibility of their dismissing the whole matter with a shrug (which would be worst of all). And might they not be right? Why bother with a definition of art? It is the work of art which is important. Why define philosophy either? Why take so much trouble to explain what you are doing and why you are doing it? It’s a sign of decadence!

And yet so much of the philosophy of to-day is engaged in defining itself—philosophy which breathes of a philosophical renaissance rather than of decadence. Of course, there is precedent for it. Plato it was, I believe, who began it, and in this respect at least there have been those who have not failed to profit by his example. Witness the numerous articles appearing in this JOURNAL. Philosophers do seem to find it necessary to talk about the function of philosophy. Bertrand Russell, for instance, begins his *Problems of Philosophy* by asking: “Is there any knowledge in the world which is so certain that no reasonable man could doubt it?” and elsewhere admonishes us against forgetting that “the philosophy which is to be genuinely inspired by the scientific spirit must deal with somewhat dry and abstract matters, and must not hope to find an answer to the practical problems of life.” It is “the theoretical understanding of the world, which is the aim of philosophy.”

Professor Dewey, as leader of the Creative Intelligenzia, voices their views somewhat differently: “Philosophy,” he says, “claims to be one form or mode of knowing. If, then, the conclusion is reached that knowing is a way of employing empirical occurrences with respect to increasing power to direct the consequences which flow

from things, the application of the conclusion must be made to philosophy. It, too, becomes not a contemplative survey of existence nor an analysis of what is past and done with, but an outlook upon future possibilities with reference to attaining the better and averting the worse."

The New Realists, in their turn, inform us that their aim is among other things, the "correction of established habits of thought."

In this Russell, and Dewey, and the New Realists do agree, that most of the philosophy up to Russell or Dewey or Neo-Realism, as the case may be, has misconceived its function, and that if the claims of philosophers had not been absurd, their achievements would have been greater. And then each proceeds to explain what philosophy should be and what philosophers should do. And thereupon they cease to speak alike.

Now, I can not quite bring myself to the point of believing that most of the philosophy since Plato, or since Bacon, or even since Spinoza, has so completely mistaken what it was about. I wonder if there might not be five and forty ways of being a philosopher, as there are of composing tribal lays, and every single one of them—or almost every one—right, for a particular reason. And I wonder whether the reason for the rightness can not be expressed in some other way than by a weighing of evidence, a consideration of worth and of shortcomings, and an inevitable arrival at the irritatingly moderate conclusion that "there is much to be said on both sides."

I, too, would play the game of defining philosophy, not, however, as a prelude to the sudden production of any philosophical system or carefully unsystematized philosophy, as the case may be, which depends upon my definition; but rather as a protest that so much energy should be expended on preliminary flourishes, statements of policy—on polemics, in short—which might be used either in the organization of a body of scientifically philosophical truth, or in discovering and pursuing definite means for the improvement of the conditions of life here below.

For philosophers have, broadly speaking and in the main, divided in their view about the relative importance of these two types of philosophical activity. The line of cleavage has been particularly marked since what is generally viewed as the opening of the modern era in philosophy. Descartes and Spinoza, with their passion for clarity of thought, precision, and scientific certainty, are the intellectual forbears of such philosophers as Russell and the six Realists and the German logicians. And Bacon, in his radical protest against the formalism of Scholastic philosophy, and his declaration that knowledge means the power to utilize theory in the interest of

human life, is the not so very remote ancestor of Professor Dewey in his reaction against the idealistic formalism of Germany, England, and America, in his demand for a sweeping away of traditional philosophic problems whose genuineness is questionable, and in his emphasis on the necessary connection between concreteness of thought and activity which is to be *both* moral and successful.

In this paper I am not attempting to derive my definition of philosophy from a consideration of these two quite different notions of what philosophy should be. What I am trying to do is to set forth a conception of philosophy in terms of which both the instrumentalist and the scientific views of philosophy find a common, broader interpretation.

Let me recall to your minds the well-known view that philosophy is the attempt to evaluate the conclusions of the various sciences, "taking its material ready-made from the sciences," in Miss Calkins's words, "and simply reasoning about them and from them." According to James too "philosophy has come to denote ideas of universal scope . . . and the philosopher is the man who finds the most to say about them." The definition of philosophy as the science of sciences, and the figure of the wheel, with the sciences as the spokes and philosophy at the hub, come to mind at once. I believe, however, that the position of philosophy is at once more humble and more arduous. It may well begin, not with the aim of achieving an organization from above, of being inclusive, but of being exact in any small realm which it may choose to isolate. For when any sort of inquiry becomes self-conscious, looks about itself, and examines the assumptions on which it is proceeding, or considers its relations to any other human activity, it promptly turns into philosophy. Thus philosophy, as I understand it, does not reside permanently and peacefully at the hub of the wheel, but spends at least as great a part of the time as a wanderer along the rim, a traveler from spoke to spoke. There are frequent excursions hubward, it is true, and temporary surveys from this central vantage point. But sooner or later philosophy must return to its more humble position. Or, it might be possible to imagine philosophy as a dual personality, having the strange power of being in two places at once. At any rate, the figure of philosophy as a dweller on the periphery rather than at the center of the circle, does greater justice, I think, than the older view to the fact that a philosophy which is not intimately bound up with at least one important branch of human enquiry, which does not receive its impetus or take its departure from an intimate, vivid acquaintance with some specific science or art, so often seems futile and empty.

When philosophy is viewed as the attempt to discover and express the relationships between the various interests and activities of human life, certain aspects of the philosophic enterprise come to light. One is that philosophy is simply an intensifying, an amplifying, and a clarifying, of ordinary living, and that there is a perfect continuity between the most esoteric and abstract philosophy and common every-day experience. For both represent the constant and universal human demand for a consistent, organized experience, a perspective on life, so to speak. It is impossible for me to prove this by a description of the way in which meaningful experience begins and develops. I never was a baby, that I remember; none of the babies with whom I am acquainted tell their thoughts; and it seems even more futile to appeal to fox-terriers and earth-worms. But it might be illuminating to consider what really happens when an ordinary human being—not a philosopher, except in spite of himself—reads a novel, for example. He understands it in terms of his acquaintance with people; or he may bring to bear his knowledge of history, or of the social or political or economic conditions which it depicts or interprets; or of these conditions as its author's back-ground of experience and their influence on his ideas and his attitude toward life. He may relate it to other novels and other authors, with respect to its style, or its subject-matter, or just a few wayward and incidental notions which it may happen to contain. In other words, in proportion as the experience of reading that novel is rich and vivid and absorbing, it is a relating of the novel in as many ways as possible to the reader's background of experience. Sometimes—as in the case of one's first acquaintance with a Russian novel, for example, in which the technique and the subject-matter are relatively unfamiliar; or in one's first encounter with the German Romantic poets, or with impressionism in music or painting or verse, or with Japanese drama—the relating is not easily done, and sometimes necessitates the working over of a great part of the background against which the new experience is projected. In other words, our standards do change as our experience grows. And sometimes the new experience is rejected as comparatively meaningless, or at any rate temporarily unassimilable. But the rejection itself has meaning, and in this sense the experience is related to a more or less organized larger whole.

This tying up of meanings and memories extends right through the experience of every-day, from the tasting of a strange new breakfast food, to considering the prospective site for the town fire-house, or the advisability of sending missionaries to the Esquimaux. A new experience, in short, if it is at all intelligible is understood in

terms of a whole system of experiences, and is criticized in the light of it. The new experience is placed against a background of principles or presuppositions, the residue of a tentatively organized past in a similar attempt to make a whole of conscious life. And often, as I said before, it is impossible to assimilate the new experience without adjusting or reworking the background, and changing at least some of the presuppositions.

When the reader of novels or the listener to music or the viewer of paintings, becomes conscious of what he is doing, does it deliberately, and publicly voices his opinions, we call him a critic. And, not immediately, perhaps, but in the long run, I think, we call his criticisms good just to the extent to which they furnish us with a technique, however imperfect, for the organizing, however tentative, of similar experiences—and, of course, by differentiating, of contrasting ones.

Now, the philosopher, I take it, consciously or unconsciously is trying to do for some or all of the experiences¹ and activities and values of life what the literary critic, for example, is or ought to be trying to do for literature—that is, trying to discover their relationship to the other experiences¹ and activities and values of life, and perhaps to life as a whole. He is a Critic, in the most complete and general sense of the word. For criticism is simply a consideration of things in their relations to each other. When you criticize a thing, you view it in the light of another fact or group of facts, and try to formulate the relation between them. For criticism is not evaluation, if evaluation be taken to mean putting a value on something which is originally negative or inherently valueless. Values are spontaneous, as much given as the greenness of the grass, or the hardness of granite, or the shortest distance from here to San Francisco, or the perplexing circularity of Columbia Library. These things are not created by our experience. They are discovered. And similarly we do not create values. We discover them. It is perfectly natural that we should prize health, and comfort, and clear cool air, and friendship, and good-tasting food, and economic independence, and beautiful paintings, and courage, and the satisfaction of curiosity. The important thing is to see them in their relation to each other, to achieve a perspective. And the attempt to attain this perspective we call philosophy.

Emphasis is often laid on the valuing aspect of philosophy. The relationship between values (with the stress on values rather than on the relating of them) is, I believe, often taken to be the

¹ The term "experience" being used to include the experience of fact in the realm of physical or logical "structure."

special field for the philosophy. The moral or the esthetic judgment, at first blush, does seem inevitable for work of philosophic significance. Yet what I feel I have not sufficiently made clear is that it is the relating, carried on in the most rigorous and thoroughgoing manner, which is the keynote of philosophic activity. The relating of values is only one phase or branch of this activity. Values are inevitably dealt with if the enterprise of relating be carried far enough. The value judgment does enter into philosophy, just as it does into the experience of reading a novel or a poem. But the relation of better or worse than something else, is only one of the relations discovered and articulated in that illuminating and rationalizing of experience which is philosophy. The desire to see things clearly and whole does include the wish to know the relative importance of this or that fact or endeavor in the light of human life as a whole. I think it is worth while, however, to emphasize the fact that *any* step in the process of integrating experience, so long as it be a conscious, rigorous attempt to see one thing in the light of another, may rightly be called philosophical. Not logic only, but all philosophy is a study of relations.

Such a view of philosophy is much more pluralistic than the older classic view. It gives the title of philosopher to those of less Protean capacity than the philosopher is usually supposed to exhibit. Whether or not it is possible to achieve any permanently significant conclusions from a consideration of, say, the relation of poetry to push-pin, or of economic conditions to standards of achievement, or of a novel to a political theory, without dealing with *all* the values of life and a general conception of life to boot, may be doubtful. But the question itself, as I see it, is not the crucial one. However far the philosopher may find himself driven toward inclusiveness as his enquiry proceeds, he is as much engaged in the pursuit of philosophy at the beginning of his task as later, a philosopher as well when he is engaged in discovering the relation of one science to another (of the methods and aims of history to those of anthropology, for instance), as when he is dealing with the significance for conduct of the theory of evolution, or with the relations of the great value groups—the beautiful, the true, and the good.

This means that philosophy is bound up with science, just as it is fused and interpenetrated and continuous with every-day living and with the esthetic experience. If, as Spencer says, "Philosophy is completely unified knowledge," then we have no philosophy at all. But if philosophy be the attempt to achieve a more complete unification of knowledge than we have at present, then philosophy is one phase of science and of art and of common experience. It is en-

lightening to recall the fact that among the ancients science and philosophy were largely identified. The mathematician was the philosopher, and the philosopher was the physicist. For to them philosophy was simply an intelligent attempt to understand the world in which we live. The philosopher, according to Plato, was one who knew "the true being of each thing." Even when one reads the history of the philosophy of not so very ancient times, he frequently finds it difficult to decide whether he is studying philosophy or science. And in spite of the growing tendency of the scientists and the philosophers to hedge off porcupinely from each other, I should say that the difficulty exists even to-day. Is Bertrand Russell a philosopher when he is criticizing the primary concepts of number, or when he is engaged in the attempt to reduce mathematics to logic (*i.e.*, when he is relating these sciences)? Or is he a philosopher only when he is considering the subject of mathematics itself as one interest among others that human beings pursue, and expressing a judgment as to its supreme value and beauty. Or is it only when he is giving an interpretation of the meaning of life as a whole, as in *The Free Man's Worship*? And what of logic and metaphysics themselves? Are we to consider them sciences or branches of philosophy? Their classification seems to me to be rather arbitrary, on the whole, depending to a great degree on your point of view and your native or acquired predispositions. If exactness of detail in the description of "structures" (to use Professor Woodbridge's term) be the mark of science, then logic, without a doubt, and metaphysics in proportion as it becomes exact, are sciences. But then esthetics, and even ethics—very slowly, perhaps, but none the less surely—are also on their way to become sciences. There seems to be a grain of truth in the cynicism that philosophy is nothing but bad science. It is a curious and rather pathetic situation for philosophy, that the results of the philosophic pursuit of relations, just to the extent to which they become exact and indisputable, are constantly being taken over by one or another of the sciences. And one by one mathematics, physics, astronomy, biology, psychology, and latest of all sociology, have left the philosophic roof-tree and gone off on their own, so to speak.

Yet the situation, rightly viewed, is not so discouraging for philosophy, after all. It simply means that a relation which is more or less completely determined and known may at times and according to one's point of view assume the status of a fact; and that any group of such clarified and interpreted facts, tentatively organized in the light of some determining principle or group of principles, is what we mean by a science.

There is no one region of philosophic fact, and no peculiarly labelled, quite indisputably philosophic problems. Philosophy takes its material to be criticized and reorganized wherever it may happen to find it. And however many young sciences go forth from the philosophic roof-tree, the house itself will never be empty so long as science finds anything left to discover and describe. What is more, there is a constant, if often unpremeditated returning, as it were, of the sciences to the house of philosophy. For the moment mathematics, for example, raises its head from the contemplation of its own particular discoveries and considers its relation to logic or music or chemistry or the Beautiful, that moment it turns into philosophy. And the moment the economist or the lawyer or the politician articulates to himself the place of his particular occupation in any larger setting, he becomes a philosopher. Philosophy is found not only above, "relating the big conclusions of the various branches of science," but right within the fields of the sciences. The two are mingled and interpenetrated. One might express their relationship by borrowing a figure from Professor Montague, but using it in a different connection. The line of chalk on the black-board is something more than an infinite number of points. These chalk-specks are arranged linear-fashion. And the arrangement is as real as the chalk-bits. Only, to have a *chalk*-line on the black-board, you must have both the infinite number of chalk-bits *and* the linear relation of them. One can not get one without the other. So with the relation of science and philosophy. The scientific enterprise is philosophical, just in so far as it is a "progressive integration of experience," to use a phrase of Santayana's.

This progressive organization, with the relating of interests and activities of every sort, makes intelligible the notion of different levels, as it were, of philosophy—of philosophies "of a higher order," just as there are "propositions of a higher order," to use Bertrand Russell's expression. And for the philosophies as for the propositions, the term *higher* carries no laudatory connotation whatsoever. It is simply a fact that the social sciences, for instance, are on a different relational level than the natural sciences, inasmuch as the social sciences themselves represent a wider, more comprehensive, more complete integration of interests and a partial evaluation of human activities. That is, with respect to their subject-matter they are on a different philosophical level than the natural sciences. And in a like manner, in the consideration of the relationship of the beautiful, the good, and the true, or in the criticism of the critical activity itself as one type of interest among others, we have philosophy on still higher levels—always bearing in mind

the perfectly neutral sense, so to speak, in which the term *higher* is used. An infinite regress in the discovery of relations and inter-relations and relations between relations, *is* set up. But then, the effect of an infinite upon you depends on your own attitude toward it.

But, you cry, isn't this all fantastic and absurd? What you are doing is not distinguishing and defining philosophy, but obliterating distinctions, stretching the term philosophy to include things with which it never dreamed of being associated. "If," as Professor Morris Cohen points out, "the Holy Sepulchre be everywhere, one can not effectively preach a crusade to redeem it from the infidel." Now, I believe that it is absurd to make such an extension in the use of terms that all distinctions are smothered under a blanket of inclusiveness. But I believe it is equally absurd to make distinctions where none exist in fact. Far truer than our present-day contrasting of science and philosophy, was the older distinction between "natural philosophy" and "moral philosophy," and I wish we might return to it. After all (if one could accomplish the feat without resembling too absurdly the glib narrator who piquantly ends his story in the fashion just opposite to the expectation which he had carefully aroused—a "sell," I believe it is technically termed) one might be tempted to voice one's wonder whether the supposedly indubitable importance of a distinction between science and philosophy might not be the result either of a too-jealous clinging to traditional and sometimes outworn philosophic problems and prerogatives; or of a not-quite-nicely balanced sense of values—a proverbially philosophic lack of humor might be another way of putting it. One might be tempted to wonder what difference it makes, after all, whether a problem be a problem for science or a problem for philosophy, so long as the problem itself be a genuine and significant one. And whether it is so tremendously necessary that we have any definition of philosophy, even though courses purporting to introduce us to the subject have still to be given. For philosophy, so far as I can see, is simply that love of wisdom of which Plato speaks. He might have added that the philosophic person is much more important, in the long run, than the philosophic problem. It might be a good thing, practically, if philosophers and scientists and artists forgot to argue about the function of philosophy and science and art, and devoted themselves to the discovery of things that are *so*, in whatever portion of the discoverable universe, natural or moral, most happens to interest them—whether it be the realm of mass and weight, or of logic, or of values, or of musical combinations, or of the reasons and the validity of stand-

ards of judgment themselves, or of the relation of any of these to any or all of the others.

And it is just this sort of thing that philosophers used to do. Most of them up until the time of Socrates were engaged in criticizing our notions of the physical world. It is true, they had a weakness for trying to solve all the problems of the nature of man and of the universe according to a single formula, and we smile at them—and do the same things ourselves, at least those of us who are idealists, or Freudians, or vegetarians, or Guild Socialists, or believers in New Thought. It is true also that the pre-Socratics sometimes tried to solve physical problems dialectically, poor souls. But the genuine philosophic impulse was there, the impulse to understand things in terms of each other; only, in the case of the Pythagoreans, for instance, the impulse was to understand everything in terms of their experience of number.

With the Sophists, philosophy takes the form of a criticism of the standards of morality and social life. Socrates continued this criticism, only with more rigor and honesty, criticizing as well the skeptical and individualistic tendency of the Sophists. His uncompromising demand that we say what we mean and mean what we say, led him also to demand that we criticize the concepts we employ, and find out what we mean by such notions as piety, justice, moderation, courage, cowardice and other terms whose meanings we usually take for granted.

Plato extended the Socratic criticism to cover the entire social life, which he judged according to ideals of human life and conduct which were themselves criticized.

We hear so much about the "critical" philosophy of Kant; and yet, so far as I can see, all philosophy is critical by reason of its very nature. When it is not, we call it poetry, or, if we are *very* severe in *our* criticism, or happen to have been particularly irritated by it, we call it dogmatism. It would be vain to attempt to trace even the main currents of the critical movements through its history, showing in what ways and in what various fields the critical activity has manifested itself. I shall simply point out a few of the interests of philosophers of the present day.

William James was chiefly interested in relating the results of investigation in the realm of the biological sciences to conduct, and in pointing out what he supposed to be the consequences for theoretical knowledge. The occupation of many of his and our contemporaries has been to criticize his methods and his conclusions. James's other main interest was the psychological warrant for religious faith.

Among living philosophers, Santayana is chiefly interested in criticizing the various values of life in the light of their relation to each other and to a conception of human life, which in turn he has tested in its relation to fact, to logic, and to practise. Incidentally, he is criticizing other philosophers and other attitudes toward life both logically and on the ground of their implications for the whole of life. His *Life of Reason* is a critique of human life in which science and art and religion and the social values are viewed, each in its relation to the other values of human life.

Bertrand Russell's interest in science is of a very different sort from that of Santayana. His earlier work is primarily concerned with problems of scientific method in their relation to logic. In his later social philosophy he is dealing with the relation between ideal and practical needs, with the relation of expressions of impulse to a satisfactory life and its conditions. He is engaged in describing the relations between economics, politics, education, industry, instinctive human nature and human ideals.

Poincaré, the great French scientist, becomes a philosopher when he examines his pursuit with the purpose of finding out just what it is he is doing. Like the earlier Russell, he is interested in discovering the interrelations of the various sciences and of analyzing their ultimate concepts. He is a philosopher on a different level, so to speak, when he steps aside to talk about the whole enterprise of science in its relation to the other phases of human activity and the place of the scientific and the practical interests in human life.

Sometimes the philosophical critics deal with the values of life in their relation to some special interest or some particular concept. Thus Mr. Laski is interested in criticizing the concept of sovereignty and of the state. Dean Pound is dealing with the nature and basis and ideal of law. The relation of the state to economic and industrial groups is the chief concern of the political philosophers of England and France, and lately of America—such men as J. A. Hobson, G. D. H. Cole, A. R. Orage and others of the Guild Socialist movement in England, and Duguit, Durkheim, Levine, and Sorel in France—to mention only a few.

Professor Dewey is interested in criticizing the values and activities of life, and the rôle of philosophy in life, particularly with reference to conduct and the improvement of the conditions necessary to a satisfactory life. "What serious-minded men not engaged in the professional business of philosophy want most to know," he says, in his essay on "The Recovery of Philosophy," is what modifications and abandonments of intellectual inheritance are required by the newer industrial, political, and social movements. They

want to know what these newer movements mean when translated into general ideas. Unless professional philosophy can mobilize itself sufficiently to assist in this clarification and redirection of men's thoughts, it is likely to get more and more side-tracked from the main currents of contemporary life." It is in the light of his conception of the rôle of philosophy in life that he questions the genuineness of traditional philosophic problems.

Thus, broadly speaking, the types of philosophy depend on the types of subject-matter dealt with. The line of cleavage, as I have noted, is between the "social" and the "scientific" philosophies. A recognition of the fundamental similarity of their enterprise would, however, do much toward clearing the intellectual atmosphere. Since Aristotelian completeness is an impossibility to-day, philosophers, if they are to accomplish anything of real importance, must of necessity be partial in their endeavors. The remedy for the possible evils of philosophical partiality is not a vain attempt to be all-inclusive, but rather wholeness of vision, a recognition of the relation of one type of philosophical activity to another.

By this I do not mean that every aspect and tenet of either philosophical humanism or philosophical intellectualism is equally acceptable or valid. But a philosopher may be a philosopher even though he make mistakes. What I am speaking of is the status of the different types of philosophical interest. Each is equally relevant to human life (an irritatingly moderate conclusion, I know), provided that neither commits the cardinal philosophical sin of taking itself, in its partiality, to be the sum of philosophy. So that when one considers human needs and values as somehow not inclusive of intellectual needs and values, he is making as vicious an abstraction as one who fails to remember that "the sincere dialectician," to use Santayana's words, "must stand upon human, Socratic ground."

By this I do not mean that everything that is being done in philosophy is quite as important as everything else. Some interests and some values *are* more fundamental than others. This itself is a philosophical question. I only mean that philosophy is philosophy on whatever level it is found. All criticism is not equally important. But it is all critical.

And, as I tried to make clear, to say that philosophy is criticism does not mean that philosophy is in any sense an evaluation from above. Philosophy is not the construction of ends, but the discernment and relating of them. And this illuminating and ordering of ends is only one phase of the Life of Reason, the "progressive integration of experience" in the attempt to satisfy an instinctive and

persistent craving for consistency in experience—in pure knowledge, as it were, and in conduct, and between the two. In Santayana's words (once again), "To understand is pre-eminently to live, moving not by stimulation and external compulsion, but by inner direction and control." The demand at the basis of the whole enterprise is, I believe, an esthetic demand, a passion for order and harmony and lucidity. The final test of a philosophy, I believe, is its power to satisfy this demand.

But is this not turning philosophy, or criticism, over to subjectivism and intellectual anarchy? If there are no objective standards of judgment—why then argue about a novel or a painting or a social theory or a philosophy of life? In matters of taste there can be no disputing. I do not believe, however, that such an interpretation of criticism means consigning it to the depths of "mere" impressionism. What the critics of the theory of the esthetic bias in the philosophic enterprise overlook, is that few human beings knowingly and willingly play the fool, even though it be the blessed fool, for the comfort of a superficial synthesis. The "will to believe" is not so strong as that. What they also overlook is that experience is not wholly a sub-cutaneous phenomenon. Why argue? Simply because conversation is a means of discovery. It is possible for human beings in some way or other to share and discuss and criticize each other's ideas. The mere existence of language bears witness to this. But this in turn implies a common ground as the possibility of such communication—namely, the obligation of every rational being as a rational being to endeavor to avoid contradicting himself.

What this means, in terms of criticism, is that a man has a right to his standards for interpreting his experiences, of whatever sort they may be, just so long as he finds them adequate, just so long as he can maintain them consistently against all comers—and against himself. An impressionism such as this, if this *be* impressionism, is curiously plastic under the pressure of logic and of fact.

SARAH UNNA.

MODERN LOGIC AND THE ELEMENTARY JUDGMENT

MY suggestion to exclude the term "elementary judgment" from modern logic, so as to avoid serious confusion with the *S is P* proposition in traditional logic,¹ has met with certain criticisms² which are of sufficient importance to require an answer, especially as my critic's position—he seems to have fallen into the very confusion against which I am protesting—appears to be fairly typical for many students of logic. As my earlier paper failed to remove certain grounds for this typical misunderstanding, I shall in what follows, first re-state what I take to be the fundamental positions (1) of traditional logic, (2) of certain partly modern logicians, and shall then state (3) the position which should, in my opinion, be taken by all modern logicians in accordance with the essential principles common to the whole movement. Having in this way made clear both what is included and what is excluded from modern logic, I shall then proceed to give concise answers to each of the contentions urged against me by my critic.

I

1. Traditional logic recognizes a distinction between simple and complex propositions, *e.g.*, between (a) propositions of the form *S is P*, and (b) propositions of the forms *S is P and Q is R*. *If S is P, Q is R*. *Either S is P or Q is R, etc.* Compound or complex propositions are so called, because, for certain purposes, they can be analyzed into two or more simple or elementary propositions connected in a special way.³ Along with this distinction between propositional forms, goes a secondary belief that logical thinking, which expresses a relation between the ideas *S* and *P*, is an apprehension of "corresponding" relations between real entities. That is to say, the traditional logician tends to regard reality as a system of entities, *s, p, q, r, etc.*, between which relations of inclusion or exclusion (*is—is not*) hold, and that these relations can be clearly apprehended and expressed in the traditional propositional forms. This belief is known as the "existential import of the copula."

¹ This JOURNAL, XVII., pp. 214 ff. The proposed exclusion is in the interests of intellectual clarity, and is in no sense an attempt to banish awkward psychological or logical facts.

² See L. E. Hicks, *Shall We Exclude Elementary Judgments from Logic?* This JOURNAL, XVII., pp. 493 ff.

³ For certain purposes, this kind of analysis appears to me to be perfectly legitimate (*Cf. my Intro. to Mod. Logic*, p. 9), and I do not understand what Dr. Hicks means by calling traditional logic "moribund" (p. 494).

2. Modern logicians recognize a distinction between infra-logical thinking⁴ and reflective or logical thinking. This is essentially a distinction between psychological and logical, and has nothing whatever in common with the traditional distinction between simple and complex propositional forms. Certain partly modern logicians⁵ place the propositional-form distinction (of simple and complex) under the head of "logical," excluding it entirely from the "psychological" side of the modern distinction.⁶ It should be added that Wundt and Erdmann, and perhaps also Sigwart, regard the distinction between simple and complex propositional forms as coinciding with a distinction between judgments as elementary and critical or reflective, respectively.

On the question of existential import there is an entire *volte-face* in modern logic. Reality is no longer envisaged as a system of entities between which simple relations of inclusion and exclusion hold—which relations can be simply apprehended and expressed in *S is P* judgments,⁷ but rather as a highly complex system of relations, the discovery of which furnishes problems of almost infinite complexity to our various departmental sciences. This is expressed by Lotze in his arrangement of certain well-known propositional forms in the order, *S ought to be P*, *S may be P*, *S is P*, where *S is P* represents the final establishment of a hypothesis, and is anything but an elementary or primal judgment. This view is characteristic of the modern movement taken as a whole, and the function of logical thought is generally regarded as the experimental establishment of hypotheses, which, until established, have the status of "floating adjectives."⁸

To make still clearer the comparison between traditional and modern logic on these points, the above statements are summarized in the following diagram.

⁴ *E.g.*, processes involved in sense-perception, association, memory, emotion, etc., which, while subsidiary to logical processes, are themselves, as such, infra-logical (Sigwart, Erdmann, Wundt, Ziehen).

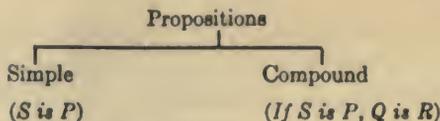
⁵ *E.g.*, "Concinnists"—from *concinmare*, a term proposed by Ziehen—such as Wundt and Erdmann.

⁶ Thus, it would be a serious blunder to identify the propositional form *S is P* with the psychological, infra-logical experiences, out of which the *standardized* thought-process which constitutes logical judgment arises.

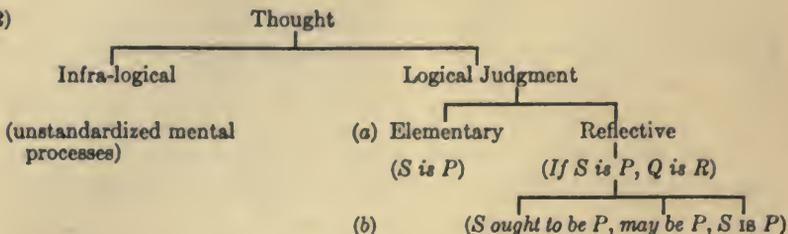
⁷ Certain exceptions must be noted. Husserl and his followers, such as Professor W. T. Marvin, hold that the logical intelligence apprehends certain very general, "noetic" relations, which hold good for all judgments, and Erdmann thinks that we apprehend relations which are "logically immanent" in the real world.

⁸ *Cf.* Bradley, *Principles of Logic*, Ch. I.: Sigwart, *Logic*, Ch. IV.

(1)



(2)



3. It seems to me that there is a dangerous ambiguity in the position of many modern logicians, and in particular that their view of "existential import," which assigns the *S is P* form to the end of the series which culminates in an approximation to completed judgment (2b), is hardly consistent with the "concinnist" attempt to retain the *S is P* form for the "elementary" as opposed to the "reflective" judgment (2a), and this would seem, as Dr. Hicks points out (p. 494), to assign the *S is P* form to the beginning of the series. We might speak of a lower and a higher categorical form, to mark the distinction between the preliminary and the more final form of judgment, but the danger of confusion is sufficiently apparent, and the further possibility of confusion with the *S is P* proposition of traditional logic, and even with the elementary, infra-logical processes recognized by modern logic, is, as a consideration of Dr. Hicks's treatment of "primal" or "elementary" judgments (pp. 494, 497-8) itself indicates, not to be disregarded.

The confusion in question seems to me to arise mainly from the "concinnist" attempt to find a place for, and to incorporate in modern logic, the formal distinction between simple and compound propositions. This distinction, which is of great importance to traditional logic, is without significance for characteristically modern logic, and can be entirely omitted, not only without loss, but with distinct gain in clearness and avoidance of confusion. It was for this reason that I suggested, in my earlier paper, that traditional and modern logic should be kept separate, and that the term "elementary" judgment, as represented by the *S is P* form, should be abandoned, as it tends to introduce confusion between (a) the simple proposition of traditional logic, (b) the infra-logical experiences out of which our clear-cut, standardized judgments arise, according to modern logic, (c) the simpler types of judgment,⁹ and

⁹ For confusion between (b) and (c), cf. Dr. Hicks's paper, pp. 494-495.

(d) the final ideal of judgment in modern logic. It tends further to introduce confusion between the naïve confidence of traditional logic and the scientific skepticism of modern logic (*cf.* Hicks, p. 497).

In making this suggestion, I would rest especially upon the work of Bradley, Bosanquet, and (recently) Ziehen. I would insist upon the value of the distinction between infra-logical processes and standardized thought. All standardized or logical thought I would regard as critical or reflective, and would insist that the substitution of experimental verification of hypotheses, recognized as such (in place of the naïve faith that "S is P"), is essential to the modern position, and that the importance of this explicit recognition of tested and standardized thinking is so great as to justify and necessitate the rigid exclusion of elements likely to re-introduce the naïve distinctions whose place is properly in traditional logic.

Modern logic includes all standardized thinking, as such, and necessarily involves a systematic study of the intellectual standards employed in such thinking, *plus* a brief description of the infra-logical processes, and a contrast of infra-logical with strictly logical and reflective thinking. In virtue of the contrast thus established, it excludes from logical study all further investigation of these psychological processes (except, perhaps, in the chapter on fallacies), and establishes the ideal of a thinking which shall be consistent, systematic, and thorough, as reflective and as critical as possible. It also excludes all consideration of traditional logic, with its characteristic distinctions and problems, as foreign to its own purpose, and as likely to cause confusion.

II

From the position thus outlined, I will give concise answers to Professor Hicks's detailed criticisms.

1. Dr. Hicks thinks that, if only *Beurteilungen* are admitted into modern logic, then concepts, identifying judgments ("That is a cow"), and many inferential judgments ("Yonder is fire"), will necessarily be omitted (pp. 494-5). Thought is a continuous process, and a line can nowhere be drawn, so that not only perceptual and many experiential judgments would be omitted, but eventually (in view of Bosanquet's contention that ideally there is only one judgment) "all human judgments would pass under the knife" (p. 496). My answer to this criticism is: There were, perhaps, grounds in the previous paper which make this misunderstanding possible. From the present standpoint, "judgment" being understood as a human approximation to the one absolute

judgment, *all* judgment, so far as we really *judge*, *i.e.*, so far as our thought conforms to the standards of identity, difference, and organization, is included. This is true not only of symbolie and transcendent judgments, but also of perceptual and experiential judgments. What is excluded is the vague experiences of infra-logical character which have not yet been raised to the intellectual level.¹⁰

2. Dr. Hicks thinks my treatment of the reflective level "unique," and my contention, that its acceptance renders insignificant the distinction between simple and compound propositions, inconsistent with the practise of "most logicians," who retain the elementary judgment as well as the reflective level (p. 496). To this I answer that the criticism is partly grounded. Wundt, Erdmann, and other partly modern logicians do attempt to retain both the reflective level and also the distinction between simple and compound propositions. My objection to this attempt is stated above—I. (3). My treatment is not "unique." It rests largely upon the work of Bradley and Bosanquet in showing that *all* our thinking is both categorical and hypothetical, categorical *qua* sensory and hypothetical *qua* intellectual, *i.e.*, hypothetical, so far as reorganizing sensory experience in terms of intellectual patterns and standards (*cf.* esp. Bradley's *Principles*, Ch. II). It rests further, in principle, upon the treatment, common to all characteristically "modern" logicians, of the rudimentary attempts at judgment—*e.g.*, leaping uncritically to conclusions—as belonging essentially to the infra-logical stage.

3. Dr. Hicks thinks I succeed "in banishing elementary judgments only by enveloping them in metaphysical mist," and challenges my authority among my "masters" for stating that "contact with reality is an ideal" (p. 497). To this I answer that if Dr. Hicks will glance over Bk. I. of Lotze's *Logic* he will find that Lotze regards the attempt characteristic of logical judgment to be, to seek for *grounded* thought, and that the attempt starts with superficial sensory judgments, and proceeds continuously without stop until it concludes in metaphysics. So too in ch. V. of Sigwart's *Logic*, he will find that the function of logical thinking consists largely in checking the naïve confidence which expresses itself in *S is P* affirmations, until the judgment has been adequately grounded and the hypothesis verified. If he will look over Bradley's *Principles*, *passim*, he will similarly discover, not only that logical thinking constructs floating adjectives and seeks to attach them, by successive

¹⁰ *Cf. Intro. to Mod. Logic*, pp. 38-44, 46-53, 55-64, etc. The term "experiential" is justified, not only by the usage of Erdmann, but also by Aristotle's well-known account of *ἐμπειρία*.

stages, to Reality, and is working towards a final (metaphysical) judgment of individuality, but also that a profound note of skepticism pervades the entire work. Similarly, Bosanquet's view of judgment as "the effort of thought to define reality" leads steadily, step by step, and pointing beyond itself at each step, to the final judgment of Omniscience. So, too, in so universally read a work as Part III. of Creighton's *Logic*, he will find the stages of judgment to be from simple sensory judgments of quality to the final judgment of "individuality." It is perhaps unnecessary to continue to pile up a list of "authorities," as the view is plainly characteristic of the attempt to realize the vast programme of modern science, in which each new discovery is regarded as of provisional and hypothetical character, subject to revision as knowledge advances, and in no sense to be regarded as final.

4. Dr. Hicks argues that judgments are not all "man-made," on the ground that "the real compels our thought" and that we have to think as reality dictates (p. 497). I answer that, in a sense, that is true, but the whole question is, in *what* sense? As I understand it, while we are, of course, always in *some* contact with reality, we are not always, or even usually, in valuable contact. Our contact tends to be superficial, misleading, unsatisfactory for scientific purposes. We do not know immediately, in the form of *S is P* judgments, what reality is. Our problem is, precisely, to find out by the trial-and-error method, introducing mental patterns, mind-made entities such as the x and y of simultaneous equations, into our thought-processes, so as to raise the level of our thinking from vague and unstandardized feelings to standardized, clear-cut judgments. It is thus in a very real and important sense that the consecutive hypotheses with which we approach the concrete situation can be regarded as "mind-made." The modern epistemological logic is precisely the logic involved in this formation and verification of mental models.

5. Finally, Dr. Hicks criticizes me (*passim*) for excluding spontaneity from modern logic in my zeal for critical thinking. "The tree of knowledge is rooted in spontaneous judgments" (p. 498). I answer that I am not quite clear in what sense Dr. Hicks uses the term "spontaneity." Surely, all thought is spontaneous, and we, its carriers and agents, at best, only follow it whithersoever it may lead. But two main senses can be distinguished. (1) We can restrict the term to the subconscious, in F. W. H. Myers's sense of that term, according to which instinctive impulses, emotions, obscure intimations of all sorts, "well up spontaneously from the depths of our nature." It would be idle to attempt to deny the existence of powerful, if obscure, motives which, arising from

this source, influence and largely assume direction of our thought. But is not this source often poisoned, giving rise (as Freud, Jung, *et al.*, have shown *ad nauseam*) to unworthy prejudices, freakish and fallacious assumptions, idle fancies, and dangerous longings? On the other hand (2) the cool, intelligent weighing of evidence, the critical control of impulsive tendencies of all kinds until they have satisfied our tests for rationality—is not this also to be called “spontaneous,” a matter of self-direction? Before the question, which of the two selves, (a) the instinctive, subconscious, animal self, or (b) the rational, critically self-conscious, human self, the logician should prefer, there can surely be no hesitation. All the armory of logic, its whole *raison d'être* as a philosophical discipline, is surely intended for one main purpose, and for one main purpose alone: to aid us in our fight for control over forces within as well as without, and to fit us for living the life of cool reason, the life of deliberate, self-knowing and self-directing activity, the life of idealized will rather than of brute instinct and mechanical habit, the life of the “higher” or rational self. The study of the obscure spirits which lurk in the subconscious, belongs, not to logic, but to psychology, and is relegated to that science by the unanimous voice of modern logicians.

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EDDINGTON ON EINSTEIN

LAST fall when the news that the British eclipse expeditions had confirmed Einstein's law of gravitation sent curious Americans scurrying to their Carnegies, they found that there was only one book in English giving an adequate account of the theory in its generalized form and that very few copies of this had come to America. This much demanded volume was Professor Eddington's *Report on the Relativity Theory of Gravitation* published by the Flectway Press for the Physical Society of London in 1918. The Cambridge Professor of Astronomy was a member of the expedition which was sent to the island of Principe in the bight of Africa to observe the eclipse of May 29, for the express purpose of ascertaining if the deflection of starlight predicted by Einstein took place. The plates taken in Africa and South America showed a deviation of the images of seven stars corresponding closely with those calculated from the theory and when Professor Eddington and his associates so reported to the joint session of the Royal and Astronomical Societies on November 6 it was declared by the Presi-

dent to be "one of the most momentous, if not the most momentous, pronouncements of human thought." A month later Professor Eddington gave a talk at Trinity College and one might have thought that a new play was opening for the cue of dons and undergraduates stretched half way across the Great Court while inside the dining hall there was "standing room only." In our country we have the amazing spectacle of "Einstein books," published hastily to meet the popular demand, stacked up on the quick sales counter of the bookstore to an altitude comparable to that of the latest novel.

Professor Eddington, as the foremost champion of *Einsteinismus* in English is pre-eminently qualified to satisfy the curiosity of the general reader as well as the needs of the serious student and his latest book, *Space, Time, and Gravitation*,¹ is excellently adapted to serve both classes. He employs mathematical formulæ as far as necessary, yet the non-mathematical reader can pick his way through the volume, as on stepping stones across a creek, on the paragraphs of summary or illustration that he understands better or thinks he does. The author, unlike some authorities, does not shy off from the sensational aspects of the theory of relativity. On the contrary he obviously takes delight in playing up its paradoxes. Sir Oliver Lodge, who as an adherent of the ether is antagonistic to the new notions, said in discussing Professor Eddington's address before the Royal Astronomical Society that one of the things which astonished him most about it was that Professor Eddington thought that he understood it.

What particularly puzzled Sir Oliver Lodge was the proposed replacement of the straight line as the path of a freely moving body by the "geodesic" which is the longest distance between two points. As Professor Eddington expresses it in his lecture, the earth in passing from the point it occupied a hundred years ago to the point it occupies now might have done it in no time, as judged by those traveling on it. For the earth might have cruised around with the velocity of light and turned up at its present point with its clocks at the same hour and its people at the same age. "But the earth did not do that. It was bound by the rules and the rule of the great trade union of matter is that the longest possible time must be taken over any job." So the earth pursues a leisurely spiral—"a circle in space drawn out into a spiral by continuous displacement in time. Any other course would have had a shorter interval length" (page 72). Or to give the law of motion its general expression: "Every particle moves so as to take the track of

¹ Cambridge University Press, 1920.

greatest interval-length between two events, except in so far as it is disturbed by impacts of other particles or electrical forces." There are any number of "shortest" paths; there is only one of the maximum interval-length through time and space. Einstein deduces the laws of motion from his law of gravitation. In Newton's theory there is no apparent connection. Einstein deals solely with the *course* of a gravitating body; he is not concerned with a hypothetical "force" of gravitation. Gravitational force is no more "real" than centrifugal force, since either may be annulled by choosing a suitable standard observer.

The presence of matter in space necessitates a non-Euclidean geometry for its measurements. This curvature of the empty space of a gravitational field can be calculated and might be measured if our instruments were exact enough. For instance if a massive particle is placed at the center of a circle the ratio of the circumference to the diameter would be a little less than π . "If the mass of a ton were placed inside a circle of 5 yards radius, the defect in the value of π would appear only in the twenty-fourth or twenty-fifth place of decimals" (page 104).

Although this curvature or "hummock" produced by matter can not be measured directly, it can be found indirectly by observation of the path of a planet, or of a ray of light near the sun. The author sums up his exposition of gravitation in these words:

The simplest type of hummock with this limited curvature has been investigated. It has a kind of infinite chimney at the summit, which we must suppose cut out and filled up with a region where this law is not obeyed, *i.e.*, with a particle of matter.

The tracks of the geodesics on the hummock are such as to give a very close accordance with the tracks computed by Newton's law of gravitation. The slight differences from the Newtonian law have been experimentally verified by the motion of Mercury and the deflection of light.

The hummock might more properly be described as a ridge extending linearly. Since the interval-length along it is real or time-like, the ridge can be taken as a time-direction. Matter has thus a continued existence in time. . . .

The laws of conservation of energy and momentum in mechanics can be deduced from this law of world-curvature.²

The student of philosophy and psychology rather than of scientific methods will turn with most eagerness to the final chapter wherein Professor Eddington discusses the speculative aspects of the relative theory. He gives this chapter the Lueretian title: "On the Nature of Things," and endeavors to forestall ridicule by quoting from *Midsummer Night's Dream*:

Hippolyta. This is the silliest stuff that ever I heard.

Theseus. The best in this kind are but shadows; and the worst are no worse, if imagination amend them.

² P. 151.

Here is his idea of the trend of the relativity theory:

This is how our theory now stands. We have a world of point-events with their primary interval-relations. Out of these an unlimited number of more complicated relations and qualities can be built up mathematically, describing various features of the state of the world. These exist in nature in the same sense as an unlimited number of walks exist on an open moor. But the existence is, as it were, latent unless some one gives a significance to the walk by following it; and in the same way the existence of any one of these qualities of the world only acquires significance above its fellows, if a mind singles it out for recognition. Mind filters out matter from the meaningless jumble of qualities, as the prism filters out the colors of the rainbow from the chaotic pulsations of white light. Mind exalts the permanent and ignores the transitory; and it appears from the mathematical study of relations that the only way in which mind can achieve her object is by picking out one particular quality as the permanent substance of the perceptual world, partitioning a perceptual time and space for it to be permanent in, and, as a necessary consequence of this Hobson's choice, the laws of gravitation and mechanics and geometry have to be obeyed. Is it too much to say that mind's search for permanence has created the world of physics? So that the world we perceive around us could scarcely have been other than it is? . . . The conclusion is that the whole of those laws of nature which have been woven into a unified scheme—mechanics, gravitation, electro-dynamics and optics—have their origin, not in any special mechanism of nature, but in the workings of the mind.

"Give me matter and motion," said Descartes, "and I will construct the universe." The mind reverses this. "Give me a world—a world in which there are relations—and I will construct matter and motion." . . .

We have found a strange foot-print on the shores of the unknown. We have devised profound theories, one after another, to account for its origin. At last, we have succeeded in reconstructing the creature that made the foot-print. And lo! it is our own.³

Some mathematicians and physicists have manifested impatience at the impertinent curiosity of the public and declare that Einstein's theory concerns only themselves, and whatever they may decide to do with it can have no possible effect upon anybody's religion, philosophy or view of life. But the public knows better. And Professor Eddington agrees with the majority on this question. Galileo, Newton and Darwin were specialists, speculating in fields remote from common life, yet they have revolutionized the thought and altered the conduct of the world. Einstein's theory is even more fundamental and unconventional and if it is verified by experiment or generally adopted as a working hypothesis it will be found in the course of time to have a profound influence upon the minds of men outside of the realm of science.

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³ P. 201.

REVIEWS AND ABSTRACTS OF LITERATURE

Implication and Linear Inference. BERNARD BOSANQUET. London and New York: Macmillan and Company. 1920. Pp. viii + 180.

In this book Dr. Bosanquet has undertaken, as he tells us, "to develop and elucidate the non-syllogistic principle" on which his *Logic* was founded. In doing this, he has brought his views on a number of fundamental logical questions into relation with those of certain other contemporary and recent writers, and thus given additional significance and interest to the present discussion. The book is the outcome of Dr. Bosanquet's long and fruitful occupation with this subject, and contains in clear and pointed form some of the more important logical doctrines at which he has arrived. It would be difficult to find anywhere within the same compass a treatment of inference so complete and philosophical. The discussions of the character of the true *a priori* (p. 94 *et passim*), of "logic and the study of the mind" (Chap. VII.), and of the relation of "Judgment and Supposition" (Chap. VIII.) are characterized by the insight and grasp that come from a well-examined and coherent view of the mind and its experiences.

It is true, I think, that readers who are familiar with Dr. Bosanquet's *Logic* as well as with his treatment of logical questions in his Gifford Lectures will find nothing in this volume that is substantially new in principle. But the author's logical principles here gain a new emphasis and perspective by being brought to bear upon the problems indicated by the title, and also by the illustration and support they receive from the many illuminating examples of various concrete types of reasoning which are examined in the course of the argument. One thus comes to feel to a remarkable degree the solid ground of experience beneath one's feet, and is made to realize anew that logical principles do not have their reality in an abstract realm apart, but are nothing but the expression of the movement and life of the mind. "Truth, in short, is not merely an antecedent framework, but a spirit and a function" (p. 163).

"Inference," Dr. Bosanquet tells us, "includes *prima facie* every process by which knowledge extends itself. When, by reason of one or more things you know, you believe yourself to have arrived at the knowledge of something further, you claim to have effected an inference" (p. 2). And it is impossible to doubt that we are in possession of some knowledge, that there is nothing true. "It is agreed in principle that we possess a province of assertion on the whole justified, which we call truth. . . . Thus it would seem to be a natural assumption that in establishing the details of our knowledge we

transfer the character of certainty which we primarily recognize in the provinces of truth as a whole, to the several matters which we progressively establish within it. And a general consideration which merely embodies this presumption might be rendered by some such formula as 'This is nothing.' The essence of an inference then would be in showing of any suggested assertion that unless we accepted it, our province of truth would as a whole be taken from us" (p. 3).

In developing this view of systematic inference the author is accordingly able to contrast his position both with the traditional view of the syllogism as maintained by formal logic at its worst, and with the standpoint of its opponents who attack it from the empirical point of view. Moreover, he is able to show convincingly that there is no distinction between these two views in fundamental principle: both proceed to a conclusion by means of "linear inference." As opposed to this, the true method of inference is through recognizing the "implications" of the system in which we find ourselves. The starting-point of inference is thus neither a general principle nor sense-data in the form of instances, but it proceeds from within a whole or system already apprehended as such. Two things are essential: concrete knowledge of the subject matter and some insight into the form or principle of the whole. Both the formal syllogism and the type of induction that depends upon enumeration of particular instances fail to conform to these requirements; the one by attempting to operate with the abstract form as sole principle, and the other by abandoning the lead of any kind of a principle and contenting itself in the end with a simple whole of enumeration. As Dr. Bosanquet points out, in neither of these methods of procedure do the extremes interpenetrate each other: they are both linear in that they simply go up or down and do not carry their starting-point with them in such a way as to transform the conclusion. Whether we go up or down the result is the same: there is no determination of one extreme by the other and, accordingly, no attainment of genuine rationality in the result.

If the reader is not already familiar with Dr. Bosanquet's thought and method of writing, there is danger that he may fail to appreciate the range and significance of the arguments set down here in such a condensed form. The theory of the *a priori*, to which I have already referred, follows as a consequence of the view of systematic inference in accordance with the principle of Implication. The author's Gifford Lectures of several years ago set forth the same interesting corollary upon which he here lays emphasis, *viz.*, that the parts of our knowledge that are really necessary and self-evident

do not exist as isolated formal propositions, but constitute whole concrete systems or aspects of our experience, such as art, or religion, or philosophy. I can mention only one other topic discussed in this most compact volume. As is well known, a great deal of discussion has gone on in regard to the relation of Logic and Psychology. In the years before the war there raged, especially in Germany, a sharp controversy in which the party names were *Psychologismus* and *Logismus*. It would be too much to claim that the question has been in any sense settled by the careful analysis of Dr. Bosanquet's chapter, but it seems to the reviewer to contribute greatly toward the clearing up of ideas on this subject and to furnish a new starting-point for the discussion of this most fundamental problem.

Bacon has said that some books are to be tasted, others to be swallowed, and some few to be chewed and digested. This book belongs by good right in the last mentioned class.

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Imagination and Its Place in Education. E. A. KIRKPATRICK.
Boston: Ginn and Company. 1920. Pp. 214.

"This power of viewing the absent as though it were present . . . is imagination." The book has three parts. Part I., "Imagination and Related Activities," is a review of current conceptions about mental images, association, memory, dreaming, and the relationship of feeling and of reasoning to imagination. Part II., "The Imaginative Life of Children," gives descriptive accounts of children's plays and day-dreams. There is also a discussion of the characteristics of imagination at different ages. Part III., "School Subjects and the Imagination," includes comments on the use of imagination in reading, spelling, drawing, arithmetic, *etc.*

The book is readable and straightforward, and is one that a student ought to grasp without much supplementary explanation. Some of the exercises at the end of the chapters, however, seem too large to be handled by the type of student for whom the text is designed. For example, the question on p. 166, "Does practise in using the creative imagination in one line increase originality in all lines? Give proofs." The book as a whole should prove useful and stimulating.

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JOURNALS AND NEW BOOKS

JOURNAL OF EDUCATIONAL PSYCHOLOGY. January, 1920. *The Translation Method of Teaching Latin* (pp. 1-15): W. H. FLETCHER. - An examination of the curriculum of junior high schools located in different sections of the country reveals a striking similarity of purpose on the part of administrators. The results of the translation method showed that the interest of the class is maintained at the highest pitch, the pupils like to translate Latin, and they like to study Latin. *The Psychology of Riddle Solution* (pp. 16-33): THOMAS RUSSELL GARTH. - An experiment was conducted with riddles. The writer concludes that one must believe in the trial-and-error character of the method employed in riddles solutions. Speedy guessing tends, as thus objectively determined, to militate against successful guessing. *An Inquiry into the Statistical Basis of a Conclusion Concerning Sex Differences* (pp. 34-38): GEORGE W. FRAZIER. - In 1915 Yerkes, Bridges and Hardwick published a monograph explaining the derivation and standardization of A Point Scale for Measuring Mental Ability. They were convinced that their data showed some pronounced sex differences. Two very interesting statistical points are involved in the method by which their conclusion was reached: (1) the wisdom of using the mode as a measure of central tendency and (2) the validity of conclusions drawn on so few data. The present writer gives tables showing no pronounced sex differences. Is it fair to make conclusions concerning general differences in mental ability, as judged by the point scale, on the basis of a 3.1 difference in arithmetical mean? Is the point scale method so refined that one can be sure that the P.E. might not be greater than any of the above differences? The second point concerning the statistical basis of the conclusions we are dealing with has to do with the number of cases considered. The authors were evidently justified in making their conclusions on the basis of the arrangement of the data as given in the monograph and were also conscious of the limited number of cases considered, but it appears from the rearrangement of the data that no differences between the sexes as great as indicated by Yerkes exists. *Communications and Discussions: Age-Grade Distribution and Intelligence Quotient*: ALLEN J. WILLIAMS. - A discussion following Supt. Witham's article in the *Journal* for November, 1919. *Editorial. News and Notes. Publications Received.*

Dunning, William Archibald. *A History of Political Theories, from Rousseau to Spencer.* New York: Macmillan Co. 1920. Pp. 446.

- Langfeld, Herbert Sidney. *The Æsthetic Attitude*. New York: Harcourt, Brace & Howe. 1920. Pp. xi + 287.
- Merriam, Charles Edward. *American Political Ideas: Studies in the Development of American Political Thought, 1865-1917*. New York: Macmillan Co. 1920. Pp. 480.
- Parker, DeWitt H. *The Principles of Æsthetics*. Boston: Silver, Burdett & Co. 1920. Pp. 380.

NOTES AND NEWS

ANNOUNCEMENT is made of the establishment of an Institute of Politics at Williamstown, Mass., during the summer months. This project was first undertaken by Williams College in 1913, but the plans for it had to be suspended during the war. Now, through the kindness of an unnamed benefactor, funds have been provided to carry on the work for three years, so that it will be possible to hold the first session this summer. The object of the institute is to advance the study of politics and to promote a better understanding of international relations. The subject chosen for this year's session is "International Relations." It will be treated in its historical, political, industrial, commercial and institutional phases. The work will be carried on by lectures given by men of national and international distinction, and by classes and round-table conferences conducted by professors from American colleges and universities. In addition, every facility will be offered for research, as a special library is being collected for this purpose. The lectures will be open to the public, but the classes and round-table discussions may be attended only by regularly registered members of the institute. Membership is limited to members of the faculties of colleges and universities and to those to whom, by reason of special training and experience in the field of politics, invitations will be sent. President Harry Augustus Garfield, of Williams College is the Chairman of the Administrative Board. The Board of Advisors is composed of the following members: Professor William Howard Taft, of Yale; Professor Archibald Cary Coolidge, of Harvard; Professor Philip Marshall Brown, of Princeton; Professor John Bassett Moore, of Columbia; President Edwin Anderson Alderman, of the University of Virginia; Professor Jesse Siddal Reeves, of the University of Michigan; President Edward Asahel Birge, of the University of Wisconsin; Professor Westel Woodbury Willoughby, of Johns Hopkins; President Harry Pratt Judson, of the University of Chicago, and Dr. James Brown Scott, Secretary of the Carnegie Endowment for International Peace.

THE JOURNAL OF PHILOSOPHY

THE MEANING OF "RELIGION" AND THE PLACE OF MYSTICISM IN RELIGIOUS LIFE

DETERMINED attempts have been made recently to extend the meaning of the term religion so as to make it synonymous with "the consciousness of the highest values." "All moral ideals," it is said, "are religious in the degree to which they are expression of great vital interests of society." Whoever seeks the welfare of society is religious. This view¹ fails to recognize the significance of the difference in psychological attitude that separates the adherents of any organized religion from the devoted agnostic or atheistic social worker;² it means the identification of morality with religion, as well as the obliteration of the radical distinction that exists between magic and religion. For, in that understanding, when magic is not practised in the interest of an individual but of a group, it is no longer separable from religion.³ Nothing in the recent deepened understanding of the rôle played by social consciousness in human development, and especially in the origin of religion, excuses this utter confusion of aspects of human life long ago separated by the application of different names.

¹ Set forth in France with great power and learning by Durkheim and his followers, the position has been taken up in this country by Irving King in his *Development of Religion* and by Edward S. Ames in *The Psychology of Religious Experience*. The preceding quotations are from this last book.

² The present time offers numberless instances of utter devotion to the public good by those whose affection and thought do not rise above humanity. This fact is probably the most important of the many great, omnipresent facts of which Christian traditions obscure the view. It can not be said, on the whole, that during the Great War the majority of the steadfast friends of humanity who fought generously for the betterment of mankind have been those who felt themselves in the kind of personal relation with God that is implied in the established Christian worship. Russia, in the decades preceding the Great Conflict, was of itself a sufficient illustration of the degree of heroic sacrifice to which the love of man may prompt, without reference to God or to immortality.

³ Ames writes, "It would be no exaggeration to say that all ceremonies in which the whole group cooperates with keen emotional interest are religious." *Loc. cit.*, p. 72.

In our understanding of the term (and we think that we are in agreement with the dominant usage), religion can not begin before the birth of some conception, however vague, of superhuman personal power or powers, whose existence is felt to be a matter of moment. Before that time, any ceremony that may have been performed was either merely social or magical. The contradiction which such religions as Buddhism and the Religion of Humanity of Comte seem to inflict to the affirmation that the notion of divinities in relation with man is necessary to the existence of the institutions is merely apparent. Original Buddhism died almost with its founder. Most of his disciples promptly deified and worshipped him; a small number remembered his teaching and continued to do him honor *as if* he were living. There are reasons to hold that these would long ago have given up their commemoration were it not for the support they get from the mass of the worshippers. As to the Religion of Humanity, it no longer exists. Comte's disciples lived in a time when the deification of man was no longer possible. They went as far as they could towards the personification of the *Grand Etre*, but they were on the whole too clear-sighted to find it possible to go as far as necessary for success.

The main cause⁴ of this unfortunate effort to do away with real differences is, I think, the conviction that metaphysical concepts are derived, whereas social relations are fundamental, and that, consequently, you may disregard religious metaphysical conceptions, when they prove untenable, without surrendering that which is primary in religious life, namely the social interests involved in the discarded metaphysical view of the world. However justifiable that conviction may be, it does in no way legitimize the transformation of the historical meaning of the word religion. If "religion" were to be used to denote all social forms of behavior, a new word would have to be found for those forms of behavior that involve belief in and relation with superhuman, anthropopathic beings. No such term has ever been suggested by the writers whom we criticize; they have apparently no use for one. "Religion" should continue to mean what it has meant in the past; and the expressions "social values," "social ceremony," "social work," should continue to designate those aspects of social activity which involve neither a conscious relation with superhuman powers nor the use of a magical force.

The appearance of beliefs in anthropopathic, intelligent agents

⁴ In certain influential quarters the extension of the meaning of the term religion to all social work, has back of it nothing more respectable than the desire to avoid the obloquy which attaches to those who do not describe themselves as religious.

in relation with man was most probably prepared by pre-religious, purely social practises. If it may be supposed that such practises ever existed without some sense of a transtribal power or powers, it may with much stronger reason be held than an increasingly clear notion of transhuman, personal power developed out of them, and that thus a certain god-idea arose.⁵

Some of the religious practises themselves were, doubtless, derived from pre-religious, merely social ceremonies. But since religion has reference to personal agents (willing, thinking, and feeling beings) some at least of these ceremonies had to be modified in order to fit the new relation. In other instances, the derivation of religious from purely social ceremonies consisted merely in the ascription of a new meaning. One can readily understand that, for instance, dances born of the play-impulse and built up under the influence of the love of rhythm, of rivalry, and of other elemental tendencies, came to be looked upon as efficacious either in a magical or a religious way.

As it is hardly possible to define religion without indicating its relation to magic, we shall say very briefly how magic is to be differentiated on the one hand from merely social behavior, and on the other from religion. Magic implies the action of an impersonal power, which, however, may be wielded by a person and made to act upon a person. It acts by coercion and not by successful appeal to feeling or intelligence. From the mechanical forces as known to the civilized man, the magical power differentiates itself in that neither a quantitative nor qualitative relation is necessarily implied between it and its effects. In the mechanical type of behavior (throwing a stone, fording a stream, bending a bow) observed at any degree whatever of culture, the existence of a quantitative relation between cause and effects is implied. When fording a stream, for instance, instead of relying entirely upon his own strength, the savage may seek by promises or other anthropopathic means to move a spirit into assisting him. In that case he behaves religiously. Or he may repeat some formula, perform various gestures that will bring him the help desired independently of the intervention of any spirit, or through the coercion of a spirit. In that case he acts magically.⁶ To confuse these two types of be-

⁵ In *A Psychological Study of Religion* I have considered several probable origins of the god-ideas. See Chapters V. and VI.

⁶ For a detailed comparative study of magic and religion, see Part II. of *A Psychological Study of Religion*. The substance of that Part was already contained in an earlier essay entitled *The Psychological Origin and the Nature of Religion*, London, Archbald Constable & Co., 1909. A quite similar view of magic and religion is set forth in Edwin Sidney Hartland's *Ritual and Belief*, New York, Scribner, 1914.

havior is to fail to apprehend one of the fundamental differences that can exist in human experience.

If there be a phase in human development when the separation into impersonal and personal powers does not yet exist, then, at that time, some pre-religious form of behavior and thought is present, but not religion. How can we know when primitive man has made that distinction? By the presence of the two modes of behavior: one persuasive, the other coercive. When he supplicates or offers food, he may fairly be said to think himself in relation with a personal power.

With this brief statement of the nature of religion and of its relation to merely social behavior and to magic, we turn to the relation of mysticism to religion. But what are we to understand by that much abused word "mysticism"? An experience taken to mean contact (not through the senses but "immediately") or union of the self with a larger-than-self, be it called the spirit world, God, or the Absolute, is for us a mystical experience. Any form of worship through which that experience is thought to be secured will, therefore, be regarded by us as mystical worship.

No one doubts that mysticism as defined above is included in the meaning of the term religion. But divergences exist as to whether all religions are mystical; or, as some put it, whether mysticism is not at the root of every religion, so that in its absence no religion would have come into existence and, with its withdrawal, all religions would die off.⁷ The answer we shall give to this question will follow logically from the genetic connection which seems to us to exist between mysticism and a certain group of innate tendencies.

From the point of view of the kind of social relation to which they prompt, the most important instincts and instinctive tendencies may be classified under two heads: those that would separate individuals and those that would bring them together. On the

⁷ William James, for instance, affirms, that "personal religious experience has its root and center in mystical consciousness," *The Varieties of Religious Experience*, page 379. Similarly, William Hocking writes of the mystics, "their technique which is the refinement of worship, often the exaggeration of worship, is at the same time the essence of all worship," *Mind*, Vol. XXI, N. S., p. 39. Delacroix, who in the preface to *Etudes d'Histoire et de Psychologie du Mysticisme* says that mysticism, understood as the immediate apprehension of the divine, is "at the origin of all religion," recognizes nevertheless, on page 306, that "The Christianity of Bossuet excludes the Christian mysticism of Mme. Guyon. One can not deny that there are here two different forms of Christianity." He opens a more recent article on *Le Mysticisme et la Religion* with the words, "There exist religions without mysticism." *Scientia*, Vol. XXI., 1917.

one side we find fear and the various reactions expressive of aggression and dislike. On the other, those expressive of curiosity, and of the tender emotion. The former seek satisfaction in disregard, or at the expense of other selves; they lead to methods of life that would separate the individual from the rest of the world. The latter seek cooperation with other selves; their method is that of association and union.

These categories of reaction may each be awakened under different circumstances by the religious objects, and thus two types of religious attitude and behavior come into existence. Mysticism appears to us as the expression in religion of the cooperating, uniting human tendencies.

Animal life began, it seems, with an endowment of conflict-instincts. The appearance of the parental instinct marked probably the introduction of the other type of endowment: the animal family became the cradle of the cooperative method of life. In humanity, the aggressive, self-sharpening attitude was for a long initial period the conspicuous one; the other was called forth mainly, or only, in the narrower circles of family and tribe. Even there, its expression was easily inhibited by the subjugating, destructive instincts. Slowly man discovered the objective value of the good-will and the subjective delight of spiritual union.

Christ's contribution to humanity was in the demonstration he offered of the surpassing value of loving relationship. His rule of conduct recognizes no other than the tendencies making for mutual helpfulness and association of the spirit of love.

These two different methods of life have not found equal application in every one of its phases. In business the aggressive opposition of self to self still prevails. The kind of cooperation by which it seems tempered, is too often for the more successful exploitation of the outsiders. In certain professions, however, such as that of the physician and the teacher, in the purely benevolent social activities, and in the individual love-relation involving the sex passion, the cooperating and uniting tendencies vigorously assert themselves. In religion their expression has culminated in a form of worship seeking complete love-union with the divine object, in such a way that the worshipper and "God" become one: that is the mystical strand in religious life.

The powerful instinctive tendencies that incline man to seek union of will and feeling with other selves receive assistance from two different directions: (1) Striving with resisting other selves and inanimate objects brings recurrent moments of weariness when the zest for the strife disappears. How delightful it is then to close one's eyes to the multiplicity of things, to ignore the challenge of

other wills, to renounce effort and to lose oneself in the silent, peaceful current of undifferentiated life! Both physical and moral causes bring on this inclination to self-surrender. The pace has been too fast and the jaded nerves demand rest. Or dispiriting queries have arisen: "What matters gains and conquests; what boot fortune, knowledge, human loves? Nothing is perfect and nothing endures. Would that I could overcome my spiritual isolation, destroy the barriers that separate me from my fellow men, be one with them, instead of struggling against them." In this mood the will-to-union is given full career.

(2) Mystical worship, rooted in primary instinctive tendencies and abetted by fatigue and moral failure, finds an ally in the natural tendency of thought to seek repose in generalization. Thinking includes a double movement. Consider the man of science or the philosopher; they do their work by alternating analyses and syntheses; they can not do it by one of these alone. There must be observation and discrimination; but when objects have multiplied under the analysing activity of the mind, the severed things must somehow be united again; they must be seen in their connections. And, at least for some men, a unification of all things must be reached; a universe must be built out of the discreet objects. Completed thinking implies these two movements:⁸ sundering and uniting. The analysis may be quite incomplete, and the ultimate generalization may be jumped at without much reference either to facts or logic; but some kind of an all-inclusive principle must be obtained that generates the sense of security belonging to a coherent world.

If religion is constituted by our relations with superhuman powers and if mysticism arises, as we say, from one group only of the instinctive tendencies prompting to intercourse with these powers, then there must be two kinds of religious worship. (1) The worship expressive of defensive purposes and of the sort of self-seeking that keeps man and God separate. Here transaction with God, however earnest, bears the mark of externality; there is no thought of absorption of the self into another self; God and the worshipper remain apart, just as the seller and the buyer in a business transaction. (2) The worship prompted by the tendencies to association, cooperation, union. It assumes the forms characteristic of mystical worship. Thus understood, mystical experience is neither the root nor at the root of all religions; it is one type of religious relation.

⁸ What the relation is between this double movement of thought and the two kinds of instincts mentioned above, is not a problem to be discussed here. There is a correspondence in the results; is it merely fortuitous?

The objective kind of religion is well illustrated in the dealings of Anyambie, a West African chief, with his god. "The great man," writes Miss Kingsley, "stood alone, conscious of the weight of responsibility on him of the lives and happiness of his people. He talked calmly, proudly, respectfully to the great god who, he knew, ruled the spirit world. It was like a great diplomat talking to another great diplomat. The grandeur of the thing charmed me."⁹ But, under other circumstances, this same Anyambie might have behaved in a totally different way towards that same god or towards a less clearly defined superhuman world. He might have acted as the Mexican Indians who swallow ten buttons of mescal and sit around a fire, passively enjoying beautiful colored visions and a sense of power and elation incomparably superior to anything earthly. The ceremony might have ended in an orgy in which sex was given satisfaction in a mysterious, sublimating setting. If this should have happened, Anyambie would have passed, in succession, through both the objective and the mystical type of religious experience.

It is quite evident that in early societies these two types of behavior coexist side by side, in complete toleration of each other. In Greece, for instance there was by the side of the religion of the Olympic gods, the mystical mystery cults. But when a particular religion made claim to universality and was able to enforce that claim within wide confines, as in the case of Roman Catholic Christianity, the independent organization of mystical propensity became difficult.

Man is after all, by nature and the physical circumstances of his existence, dominantly spatially minded: in order to think and act, he must objectify. He is not often permitted to lose sight of the opposition of the me and the not-me. For this essential reason, and for others into which this is not the place to enter, the *organization* of religious life assumes mainly the objective, non-mystical form. Provided one does not understand by "non-mystical" the total absence of mystical elements, but merely their subordination, one would be justified in saying that all the great popular religions are of the non-mystical type.

Now these highly organized, dominantly objective religious institutions soon come to realize the danger threatened by the individualism-inspiring mystical tendency. In his search for God, the mystic goes his own way. If need be, he will brush aside formulas, rites, and even the priest who would serve him as mediator. And

⁹ Mary H. Kingsley, "The Forms of Apparitions in West Africa," *Proc. Soc. for Psychological Research*, Vol. XIV., 1898, pp. 334-335.

he issues from the divine union with a superior sense of divine knowledge: he holds that ultimate truth has been revealed to him. Persons of this sort, harboring such convictions, may obviously be dangerous to the stability of any institution that has come to regard its truths as the only truths, and its way of worship as the only way. And so it comes to pass that the more highly institutionalized are the spatially minded religions, the less tolerant they are of mystical piety when it rises beyond the ordinary.

What becomes of the tendency to mystical religion in countries dominated by intolerant, objective religions making claims to universality? The mystically minded seek what expression is permitted them within the established religions. They follow their inclinations as far as the ecclesiastical authorities permit. When sufficiently subservient—either in fact or semblance—as St. Theresa and Marguerite Marie Alacoque, they are tolerated and, at times, even encouraged; when too independent and made intractable by the assurance of divine inspiration, as Mme. Guyon, they are suppressed.

But if the Church is uneasy and watchful in the presence of fully developed mysticism, it is quite hospitable to its rudimentary manifestations. Intercourse between sympathetic people constantly tends to pass from externality to the intimacy of united will and feeling. Hence, whenever the religious object is conceived as a loving Being, it becomes almost impossible for the worshipper not to glide into the trustful, self-surrendering, blessedly reposeful attitude which constitutes the first step towards complete mystical union. And so it comes to pass that the Christian worshipper ever tends to drift into mystical relation¹⁰ with his God. This tendency could not fail to be recognized and even encouraged in a religion whose God is officially a God of love. But though Christianity unites in some measure the traits of both types of worship, it is nevertheless dominantly an objective religion. According to the ritual, the worshipper comes into the presence of his God to acknowledge his sins and to be cleansed from them, to seek protection from bodily and moral harm, to return thanks for God's goodness, to praise him, and to rejoice in the assurance of his favor.

Held in subjection though it is, the mystical impulse performs in Christianity a vivifying function, the value of which can hardly be overestimated; for it represents the action of tendencies in which

¹⁰ It is in the light of the preceding remarks that I understand Delacroix when he speaks of the *présence virtuelle du mysticisme dans la religion, et son effacement souvent presque total et sa libération sitôt que fléchit le mécanisme réducteur*. "Le Mysticisme et la Religion," 2d Part. *Scientia*, Vol. XXII., 1917.

humanity sees its salvation, the tendencies to universal cooperation and love-union.¹¹

Let us say now, as a last word and perhaps a word unnecessary to those who are acquainted with fully developed religious mysticism, that no institution in which the mystical tendencies should remain unchecked could long continue to exist, for it would do too great violence to common sense. The non-mystical and the mystical tendencies *together* make a complete man and a complete religion. The problem of religion (one may say of civilization) is not to be set in terms of the suppression of one or of the other group of tendencies but in terms of their functional relation.

Had I wanted in this paper to indicate the instinctive source of all the main aspects of religious worship, I should have pointed out the presence in human nature of certain innate tendencies such as curiosity and self-abasement, from which arise reverence and admiration, and, by derivation, these conspicuous constituents of worship: praise and adoration. These instinct-emotions are self-regarding neither in the sense implied in fear and the lower aggressive tendencies that are the main roots of the objective religious relations nor in the sense of those other propensities that incite to cooperation and union. Because of their apparent total disinterestedness they are often regarded, mistakenly, I think, as the loftiest expressions of which man is capable.

It will be useful to add some instances of religion representing, as far as possible, the pure objective type. The ancient religions of Egypt, Babylonia, and Palestine contain only meager traces of mysticism. Originally, the God of Israel did not even maintain any relation with individuals; he dealt with the nation as a whole. When personal relations appeared, they remained for a long time external. Certain psalms and the later prophets contain the earliest expressions of mysticism in the religion of Yahweh.¹² Among the Greeks, the worship of the Olympian divinities was altogether non-mystical, and it is an open question how much mysticism is to be found in the Mysteries.

¹¹ It seems to me that no recent student of mysticism has displayed as much insight into the profounder significance of mysticism than Hocking. With regard to this conception of the relation of mysticism to religion and to life in general the reader is referred to chapters XXVII, and XXVIII. (The Principle of Alternation) of *The Meaning of God in Human Experience*.

¹² The mystical practises and theories among the Hebrews before that time did not belong to the religion of Yahweh. They were remnants of other and older cults. We refer, for instance, to the excitement, reaching a contagious frenzy, generated among bands of "prophets" and regarded as a mark of divine possession. See I Sam. X., 5 ff; XIX., 20 ff.

Perhaps no semi-civilized people was ever more free from mysticism, in our sense of the term, than the old Romans. "These people," says J. B. Carter,¹³ "could know nothing of their gods, beyond the activity which the gods manifested in their behalf; nor did they desire to know anything. The essence of religion was the establishment of a definite legal status between these powers and man, and the scrupulous observance of those things involved in the contractual relation, into which man entered with the gods. As in any legal matter, it was essential that this contract should be drawn up with a careful guarding of definition, and an especial regard to the proper address. Hence the great importance of the name of the god, and failing that, the address to the 'Unknown God.' A prayer was therefore a vow (*votum*), in which man, the party of the first part, agreed to perform certain acts to the god, the party of the second part, in return for certain specified services to be rendered. Were these services rendered, man, the party of the first part, was *compos voti*, bound to perform what he had promised. Were these services not rendered, the contract was void. In the great majority of cases the gods did not receive their payment until their work had been accomplished, for their worshippers were guided in this by the natural shrewdness of primitive man, and experience showed that in many cases the gods did not fulfill their portion of the contract which was thrust upon them by the worshippers. There were, however, other occasions, when a slightly different set of considerations entered in. In a moment of battle it might not seem sufficient to propose the ordinary contract, and an attempt was sometimes made to compel the god's action by performing the promised return in advance, and thus placing the deity in the delicate position of having received something for which he ought properly to make return." That is the objective religious relation in all its nakedness.

No one knows better than the Christian mystic himself that the ordinary religious life of Christendom is of another type than the mystical. The founder of Quietism, Molinos, speaks of these two attitudes as "diametrically contrary to one another." There are, he tells us, "two sorts of spiritual persons, internal and external: these seek God without, by discourse, by imagination and consideration: they endeavor mainly to get virtues by many abstinences, maceration of body, and mortification of the senses; bear the presence of God, forming Him present to themselves in their idea of

¹³ *Religious Life of Ancient Rome*, Boston, Houghton Mifflin Co. 1911. pp. 12-13.

Him, or their imagination, sometimes as a Pastor, sometimes as a Physician, and sometimes as a Father and Lord; they delight to be continually seeking of God, very often making fervent acts of love; and all this is art and meditation.

“But none of these ever arrives by that only to the mystical way, or to the excellence of union, transformation, simplicity, light, peace, tranquillity, and love, as he doth who is brought by the Divine grace, by the mystical way of contemplation.

“These men of learning, who are merely scholastical, don't know what the spirit is, nor what it is to be lost in God; nor are they come yet to the taste of the sweet *ambrosia*, which is in the inmost depth and bottom of the soul, where it keeps its throne, and communicates itself with incredible, intimate, and delicious affluence.”¹⁴

Similar statements could be quoted from probably all the great Christian mystics. Anyone interested in the place to be ascribed to mysticism in Christianity should read the account of the great quarrel about quietism in which Bossuet and Fénelon were the great protagonists and poor Mme. Guyon the victim.¹⁵ Bossuet represents here, with undeniable authority, rational, common sense Christianity: a Christianity in which man and God remain face to face with each other—the creature and the creator; the sinner and the Judge, albeit a forgiving and loving Judge!

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¹⁴ Molinos, *The Spiritual Guide*, John Thomson, Glasgow, 1885. Part I., Chap. I., 54, 65; Part II., Chap. XVIII., pp. 126–127.

¹⁵ An excellent summary of this quarrel will be found in H. Delacroix's *Etude d'Histoire et de Psychologie du Mysticism*, Chap. VIII.

In recent times, Ritschl has altogether rejected mysticism. He “will hear nothing of direct spiritual communion of the soul with God. Pietism in all its forms is an abomination to him. The one way of communion of the soul with God is through His historical manifestation in Jesus Christ, and experience due to a supposed immediate action of the Spirit in the soul can be regarded as an illusion. This is the side of Ritschl's teaching that has been specially taken up and developed by his disciple, Hermann.” Professor Orr, as quoted by Garvie in the *Ritschlian Theology*, p. 143.

Of Ritschl's main disciples, Garvie writes, “Kaftan, with Ritschl and Hermann, condemns mysticism in the two types which they describe, both as an attempt to secure union with God conceived as the Absolute, and as an endeavor to be joined through the imagination and the affections to Christ in His glorified state. But in his antagonism to mysticism he is not led, as Ritschl is, to deny there is in Christian experience a mystical element, a real communion of the soul with Christ.” *Ibid.*, p. 157. See also Hermann's work, *Verkehr des Christen mit Gott*.

PHILOSOPHY IN FRANCE

I

I FANCY there are in America not a few who like myself have often wished they might know what all those names in Alcan's catalogue stand for. At last we have an account of French philosophy during the period 1890-1914, with a sketch of its antecedents, an account remarkably rich and at once highly appreciative and very critical.¹ We do not learn what all the names in Alcan's list stand for, but we learn about many of them, and these, the writer assures us, are the names that best represent the recent tendencies. I translate M. Parodi's own words:

"It is, in fact, between 1885 and 1890 that French thought seems to show a singularly increased activity and a new spirit. At the same time philosophy begins to touch the larger public and to influence literary groups. We must not forget that the two most distinguished writers of the preceding generation, Taine and Renan, who had at this time reached their greatest fame and nearly finished their work, were philosophers essentially; under their influence the interest in ideas became universal, and the non-professional preoccupation with them (*'le dilettantisme'*) was a moral and a literary as well as a philosophical movement" (p. 13). "Jules Lemaitre has said somewhere that while in the preceding period it was the course in rhetoric that made the greatest impression on students, about 1890 it was unquestionably the course in philosophy" (p. 14). "It was the moment too when a series of famous theses opened new paths: that of M. Bergson was defended in 1889, and that of M. Durkheim in 1893. Notes of M. Jules Lachelier's courses were being passed about; the teaching of M. Boutroux had reached its brilliant point. It may be said that contemporary philosophy shows from this time on its distinctive traits" (p. 15).

What are these traits? They appear in the passing of the dialectical philosophy of preceding years, the increasing prevalence of the scientific temperament, and the emphasis upon empirical method that we are now familiar with. Many of the old problems are almost ignored. The problems that really interest are problems about the nature of science and its kind of validity. Parodi says they are exclusively of this type, and the statement is the more significant because he admits it with regret, and would like to see a certain revival of "rationalism." These problems get their philosophical shading, however, from their relation to the antinomy of mechanism

¹ *La Philosophie contemporaine en France. Essai de classification des doctrines.* D. Parodi. Paris: Félix Alcan. 1919. Pp. 502.

and freedom. "The problem of freedom has become decidedly the central problem of philosophy, the one around which all the others, the problem of knowledge included, have come to gravitate." French philosophy is thus at present electrified by the sting of problems about morals (pp. 17, 161). Moreover, in the intimate contact of philosophy with science, a striking fact is the agreement between the men of these two types of training. "Indeed the philosophy of the sciences, which some would like to make the total subject matter of philosophy, is, just now in any case, the field most cultivated and most honored" (p. 16).

But although contemporary philosophy has this general character, there is nothing like a doctrinal agreement. In the teaching of philosophy as it occurs in public instruction there is no dogmatic common direction, which is one proof, among others, that no school can be pointed to as more characteristic than another as regards its positive conclusions. Rationalism and idealism are still defended; LeRoy and Sorel can interpret Bergson in diametrically opposite ways. There is the spirit of Hamelin, and the spirit of Le Dantec. What gives to French philosophy of to-day its distinctive quality is that critical attitude that goes by the somewhat misleading name of "anti-intellectualism." This attitude by virtue of its empiricism and its reaction against a conceptualistic tradition, includes an interest in spontaneity, in life (*la vie inépuisable*), that, historically, has been the burden of romanticism. Over against what M. Parodi calls "*ce romantisme philosophique*" there is rationalism with an empirical and an idealistic emphasis. "Perhaps one might say from this point of view, that our period is a moment in the great conflict between romanticism and classicism in philosophy" (p. 457).

II

Whence this anti-intellectualism and what are its relations to the earlier movements? It is, at least, not a response to foreign influences, for on the whole, Parodi insists, French philosophy has not been greatly affected by them. Schopenhauer and Spencer, and in our own day Nietzsche and James, have touched the surface. Kant and his immediate successors went a little deeper. But the substance of French philosophy has been the product of French criticism (p. 21). And this, for the nineteenth century, can be described as showing four stages. Briefly these are the reaction after the Revolution (Bonald and de Maistre); the July Restoration, Cousin's official philosophy of compromise, and the psychological spiritualism of Maine de Biran; then the first period of Comte's influence, followed by Littré, Renan and Taine, the propertied class inclining nervously more and more to clericalism as to the social

rampart, while in all circles where criticism was alive, positivism prevailed with its indifference to metaphysics, its cult of facts and its confidence in science; fourth and last, 1870 and the Commune, the sense of a crisis for the nation's vitality and a will to think seriously and thoroughly. This stage shows three groups: (a) Littré, Taine, Berthelot, and the first disciples of Comte, the theory of evolution with its corollary of progress; (b) the influence of German scholarship and of German transcendentalism (Jules Lachelier); (c) Cournot and Renouvier.

A movement that could be called anti-intellectualistic would seem to be a reaction against these antecedents. But M. Parodi insists that it issues from the speculations that precede it. This may be so, but I am tempted to look outside of a philosophical tradition for some, at least, of the causes of the contemporary criticism of rationalism. For one thing, the extraordinary progress of science, coupled with the facts that rationalism was usually engaged in disguised apologetics, and that the habit of taking supernaturalism for granted in some phrasology of metaphysics has steadily been growing weaker, accounts for a great deal. Also the exciting social and political history of France, the friction between the government and ecclesiastical institutions, must have been immensely favorable to the cultivation of spontaneous curiosity and criticism. And after all, with fertile minds, a type of problem in time often becomes antiquated and stale. This is a kind of explanation which a rationalist like M. Parodi may not relish, but which I, for one, wish he had taken account of.

The contemporary period is described by M. Parodi in ten chapters, entitled: "Essays in Synthesis, philosophy that is comprehensive in a somewhat Spencerian fashion; The Historians; The Psychologists; Émile Durkheim and the School of Sociology; the Philosophy of Émile Boutroux; The Critique of Scientific Mechanism; The Philosophy of M. Bergson; Bergsonism and Intellectualism; The Moral Problem; Rationalism and Idealism." There is also a chapter of conclusions, and Chapter I. devoted to antecedents. It is impossible, of course, to say much about all these chapters, but the author is certainly entitled to praise for the admirable way in which his pages of exposition are free from criticism. The heart of the whole matter is in the chapter on the critique of mechanism. Here, following upon the names of Liard, Evellin, Hannequin, Meyerson, who raised the question somewhat incidentally, come the names of Milhaud, Poincaré and Duhem. The critique of mechanism was initiated mainly, however, by M. Boutroux, who attacked the dogmatism of the Cartesian tradition, first in his thesis of 1874 (*De la Contingence*

des lois de la nature), and subsequently in his more advanced *L'Idée de la loi naturelle*. And Parodi quotes the following: "Man circumscribes his own field of research; he purposes to consider only a certain order of facts, those that can be numbered and measured, and to ignore the rest. It is only 'by virtue of this restriction that we deal with objects of an appreciably mathematical character.'" As Parodi observes, this was an "*idée capitale, qui devait faire fortune parmi nos contemporaines*" (p. 179).

Parodi mentions many interesting writers and describes their philosophical contributions—names that must be omitted from this summary review. But Gaston Milhaud (*Les Conditions et les limites de la certitude logique*, 1894, and *Le Rationalisme*, 1897) must not be overlooked. Milhaud continues and completes the work of Liard, of Evellin and of Hannequin. Milhaud dispels the phantom of logical absolutes in the field of existence. Americans might do well to study his paper, *L'Idée de science* in *Memoires du Congrès de Philosophie de Genève*.

There is no space to pause on the historians of philosophy or on the psychologists. The chapter on Durkheim is clear and helpful. According to M. Parodi, the work of Espinas prepared directly that of Durkheim, presumably through the former's conception of a social conscience, since for Durkheim the specific mark of a social fact is the feature of obligation or duty that belongs to it. Espinas continued the biological theory of sociology made popular by Spencer, while Tarde stood for a psychological point of view. It was Durkheim, however, who demanded that social facts should be determined by their own specific character, and not by what characterized some other field of inquiry. The all-importance of the group for the individual ("*l'âme est fille de la cité*") was announced, though, by M. de Roberty and M. de Greef, not Frenchmen, but writing in French, and by M. Jean Izoulet (*La Cité moderne*, 1894). Important collaborators of Durkheim are M. Lévy-Bruhl and MM. Hubert and Mauss. An independent disciple of Durkheim is M. Bouglé (*Les Idées égalitaires* and *Le Régime des castes*).

There is much in the work of M. Boutroux that anticipates, somewhat dimly, of course, the ideas of M. Bergson. Parodi quotes this among other things: "*Et encore, ce n'est pas la nature des choses qui doit être l'objet suprême de nos recherches, c'est leur histoire.*" M. Bergson had M. Boutroux for one of his teachers when the latter was initiating the critique of scientific method. M. Parodi's exposition of the philosophy of Bergson is admirable, but I will not mutilate it by fragmentary paraphrase. It is interesting to know, however, that the philosophy of M. Bergson, in so far as this is a

reaction against the doctrine of mechanism and dialectical intellectualism, "marks the triumph of tendencies long active, not only in philosophy, but in modern imagination as a whole, and which one might follow back to Rousseau through French and German romanticism" (p. 290). A writer who, in certain respects, shows the same preoccupation as Bergson and some of the same influences, is Gabriel Séailles (*Essai sur le Génie dans l'Art*, 1883). M. Dunan reaches conclusions much like those of M. Bergson. The quotations from Dunan are interesting; here is one: "It is not more rigorous reasoning that we need, but new ideas, in closer touch with experience (*mieux orientés*) than those of our predecessors." For M. Georges Remaclé the traditional error of philosophy has been to consider consciousness as an image of things. It is more akin to the categories of art and of morals than to the categories of truth.

M. Bergson has not yet developed, himself, the practical implications of his philosophy, but "among French thinkers, those who have most emphatically claimed to be his disciples are concerned, first of all, with religious or social action." M. Maurice Blondel (*L'Action*, thesis defended in 1893, and of which the reprinting was forbidden by ecclesiastical authority) makes primary the spontaneity of the will. M. Le Roy is, however, the most explicit adapter of M. Bergson's ideas to confessional uses, making himself thereby the boldest and most original of the "modernist" group. Le Roy has applied Bergson's theory of concepts to the definition of dogma. "'Christianity is not a system of speculative philosophy, but a rule of life, a discipline of moral and religious action.' 'God is personal' means simply 'act, in your relations with God as you would with a human person.' 'Jesus is risen' signifies 'maintain those relations with Him that you would have maintained before His death, and that you would maintain toward a contemporary.' . . . At most, from the strictly intellectual point of view, dogma might have one other function, that of excluding certain errors, certain heresies which have been judged likely to contradict these practical and vital rules. . . . And no one, presumably, will be surprised, after this, at the condemnation included in the Syllabus of Pope Pius X, in article xxvi, which is directed especially against M. Le Roy: 'Anathema is whoever shall say, 'Dogmas are to be understood only according to their implications for action, that is, not as rules of faith but as rules of conduct'''" (p. 310).

Le Roy and Sorel are both men of technical competence. Le Roy is a professor of mathematics. Sorel is an engineer and technician, well informed in the history of science. M. Sorel contends that the history of science and of philosophy has been much influenced by the

progress of technique. "The aim of experimental science is, then, to construct an artificial nature (if such a term may be used), in place of real nature, by imitating the combinations that enter into experimental mechanisms." And, pressing his idea to the limit, he does not hesitate to conclude that "to speak accurately, there are no laws of nature, but only laws of mechanism, by means of which we reproduce under certain definite circumstances certain determinations similar to those (*voisine de celles*) that are given by natural bodies.' According to M. Sorel, 'savants of to-day no longer believe in determinism' " (p. 312).

If theories in physics are instruments of action, theories of politics and of society are even more obviously so, and the orthodox political theories are instruments of antiquated class domination.

It is a pity that M. Parodi has not told us more about Sorel. I have not, of course, repeated all that he tells, but Sorel is interesting on his own account, and not merely as formulating a left wing of Bergsonism. He is free of the usual academic flavor, and the ideas in his books and articles are ideas that students of philosophy have usually not met with before. And it may be that the syndicalist appropriation of creative evolution is one of the reasons why a return to the philosophy of clear and distinct ideas seems to M. Parodi so desirable.

Other writers who have handled the ethical side of M. Bergson's philosophy are Weber, de Gaultier, Pradines, Wilbois and Chide (pp. 315-24). As for the opposition, as early as 1898 M. B. Jacob raised a cry of alarm. In 1914 M. Maritain denounced Bergson's philosophy as the fountain-head of modernist heresy. Benda's clever but petulant little book appeared in 1912. M. René Berthelot published *Un romantisme utilitaire* in 1913.

The ultimate importance of all this for the French is, as M. Parodi insists, in its relation to ethics, and the great problem is how to write ethics in normative terms. I think I do not altogether understand, but to judge by M. Parodi's description, his colleagues are not quite prepared, with the exception of those of the school of Durkheim, to write ethics in terms of candid description. M. Lévy-Bruhl, it appears, "separates completely the two elements of the old concept of ethics. Every science is theoretical, but as such it can not be practical nor initiate action; its only purpose is to understand, it has no call to approve or to condemn. Every ethic, on the contrary is an affair of action and practise" (p. 356). "How is a normative science possible? Is there not a real contradiction between the idea of science and the idea of norm?" (p. 350). "*Telle est la crise inévitable de l'idée de morale théorique dans la pensée con-*

temporaine." Obviously, or so it seems to the present reviewer, the difficulty is unnecessary, and results, not from the data of morals being indescribable in consistent terms, but from an unwillingness to give up the dialectical method. Light should come naturally enough when critics no longer seek absolute sanctions outside of the region of empirical human affairs.

Again the sociologists Belot and Rauh have reinstated the individual conscience. Loisy has made his interesting contribution, coming at one point into close agreement with Durkheim, when he holds that religion is nothing else than the mystic form of the social bond (p. 372). Others who give more importance to the rational element are Lalande, Jacob, Séailles, Buisson, Darlu, Fouillée and Lapie. It is M. Paul Lapie who, M. Parodi believes, has shown the right path for rationalism in ethics; for Lapie, ethics is logic.

Another group of writers on social and political ethics—empiricists whose will is not effaced by their deference to facts, and whose aim is to direct and modify them—includes Bouglé, Jean Jaurès, Andler, Basch, Renard, Landry, Gide and Henry Michel. All of these make use of the idea of solidarity popularized by M. Léon Bourgeois.

There remains a group of writers, interesting not so much to students of philosophy as to students of recent French experience, the men who took the stand of M. Charles Maurras and *l'Action Française*. Of this group M. Parodi has given an excellent account in an earlier book, *Traditionalisme et Démocratie* (1909). It dates from the time of the Dreyfus trial, and stands for, or stood for, ultra-nationalistic and anti-democratic reaction. Its programme included restoration of the state religion and of the monarchy, and the exaltation of military and racial pride. The group is literary rather than professionally philosophical; its two most distinguished representatives are Paul Bourget and Maurice Barrès. To them the humanitarian idealism of the eighteenth century is naïve and gratuitous folly, and the Revolution the greatest calamity ever visited upon France. No society was ever really founded on ideas or on an argument. All social stability is built on habits, instincts, associations, something that can not be transplanted, but that is a patrimony that can not be thrown away without moral suicide. This position, it is claimed, is entirely empirical, an application of the position of Comte, emancipated from all ideology and amiable superstition, which the so-called "intellectuals" so innocently seek to popularize. The personal convictions which are here offered as empirical observations are not so unlike, M. Parodi remarks, the individual "intuitions" of another school. One give up the method of clear and distinct ideas,

which alone makes real criticism possible, and there is no longer any test of sanity—this is the message of Parodi's book. It is on this doctrine of intuition that Sorel bases his apology for revolution, and it is on something psychologically equivalent that Bourget and Barrès rest their argument for tradition.

Over against all this "anti-intellectualism" there is a vigorous protest of idealism, inspired largely by the influence of Lachelier, a systematic metaphysician of the classical type. This current of rationalism is represented by Jules Lagneau, Octave Hamelin, Léon Weber, and M. Brunschvicg. The work of Hamelin is, according to M. Parodi, the most vast and complete work of contemporary idealism (p. 432), while M. Brunschvicg represents "a sort of new idealism, idealism grown infinitely prudent and modest, ready to efface itself before positive science, limiting its ambition to understanding what science accomplishes, but upholding at the same time the essential point of view of systematic philosophy and the rights of reason" (p. 420). And M. Brunschvicg is given credit for "a new idea of truth": "Truth consists of those propositions which are substantiated"—*la vérité, c'est en somme ce qui se vérifie*—a view with which an American pragmatist should be entirely satisfied.

In spite of the work of Couturat, modern logic is, in Parodi's opinion, not a French enterprise, and so he gives it but slight attention. An effort of the most serious value, however, and a characteristically French one, initiated by M. André Lalande, is the "Philosophical Vocabulary," still unfinished, drawn up by the French Philosophical Society.

Where there is so much variety and fertility, conclusions are difficult and must be decidedly tentative. Of two things M. Parodi is sure: never has French philosophy been farther from having a unified doctrine; and, also, this lack of agreement is a sign of energy and constructive ability. Certainly a mark of French intelligence is the cooperation of philosophers and scientists in philosophical discussion. "If we consider the philosophy of science, it is remarkable there is not one of the distinguished savants of our period but has done work in philosophy at some time" (p. 387).

But when that has been said, M. Parodi ventures to speak of something like a crisis in French philosophy. Empiricism, under the influence of M. Bergson's criticism, is issuing in an intuitionism difficult to test or to describe, and lending itself to contradictory interpretations. The "unconscious," under one label or another, plays, it appears, an increasingly important rôle; but what is perhaps most serious is the degree to which a philosophy of intuition releases the individual from the control of objective criticism—in-

deed principles of evidence tend to disappear. Carried to this extent, where there is no longer any criterion of evidence, empiricism ceases to be empiricism in the scientific sense, and the heart is its own authority, as in pragmatism of the sentimental type. There is, of course, the opposition of the less adventurous, but conservatism is to-day at a disadvantage, however sound its criticism. But if empiricism of to-day has become more discriminating, more subtle and microscopic, rationalism, too, is more modest and more scientific than it used to be. Rationalism has had to go to school to science, and has learned so much that the old professional suspicions which each had of the other are largely forgotten. Apparently no French savant has any occasion to declare, as Mach had to, that he is not a philosopher and does not intend to be one.

III

M. Parodi has not given us a history of recent French philosophy, and he has not attempted to. But if French philosophy has its orientation in French life, if it includes, as one likes to suppose it does, a competent criticism of French experience, there must be many things in that experience that a student of French philosophy would like to know about. An episode need not have the dimensions of the French Revolution in order to influence discussion. French democracy was put to a very severe test by the Dreyfus affair, and M. Parodi tells in a most interesting way, particularly in his earlier book, the relation between "the affair" and certain utilizations of positivism. M. Le Roy is a Bergsonian because he is a modernist. One would like to know more about the influence of modernism on recent French formulations; whether there has been any such influence, whether any important thinkers have cared to adapt their phraseology to confessional tastes, or whether any were moved in the opposite direction by, let us say, such an incident as is connected with the name of M. Loisy. According to M. Parodi, the energy of recent philosophy has been focused on the authority of science. I well remember an address in America by M. Lévy-Bruhl, in which that distinguished philosopher said that this examination of science was, if I rightly recall, initiated by Brunetière's dramatic affirmation that science was bankrupt. One would like to know more about that. The polemic of Brunetière was, in any case, an intellectual event, however irrelevant it may have been to *la philosophie intégrale*.

It is impossible to believe that the Catholic Church in France is not a great factor in the country's intellectual life. An institution with so superb a tradition, symbolized by what is the Cathedral

of Chartres and what was the Cathedral of Rheims, is a possession for the imagination as well as a complication for politics. In many subtle ways it must help to form that fine thing we know the cultivated French mind to be. Does it affect the orientation of French philosophy, and how? And finally is not Sorel a symptom of something larger than the sum of his pages? Sorel has no good word for democracy, that compromise of middle-class domination and political corruption. It may be that democracy will soon have to be tested more severely than it was in France by the Dreyfus trial. Might one not expect that the concept of democracy would provide a central problem in French ethical discussion? I have the impression from M. Parodi's book that it does so, and in view of the trend of events it seems likely to do so more and more. Under the circumstances, criticism, foresight and direction—in a word, the rationalistic virtues—can not be esteemed too highly. Their necessary work can not be done by mysticism and individualistic intuition.

To what extent M. Parodi's exposition is influenced by the potential danger that disruptive social forces may seize upon a metaphysics of mystical intuition, I would not venture to guess. But the book is a document of firm patriotism; full of sympathy, however, with the spirit of progress and with all genuine aspiration. It is a review of what France has to offer in the way of philosophy to students from other nations that come to her universities. "*Il nous a paru bon aussi et opportun, à l'heure où nous sommes, d'exposer aux autres, et à nous mêmes, toute la richesse, toute la diversité toute la puissance de l'intelligence française.*" But that attempt, as M. Parodi surely will admit, calls for gifts and power that no single scholar can supply. I greatly wish that Parodi's fine effort might be supplemented with another review of the same ground, this time, perhaps, by some one of the school of Durkheim.

And a little skepticism may be permitted as to the danger latent in the word "intuition." M. Poincaré distinguishes two types of mathematicians, one of them holding to deductive logic, the other resorting to observation and experiment. The second type, says Poincaré, uses intuition. That M. Bergson means by the word just what Poincaré meant by it I will not insist, but there is, I believe, no reason for understanding it, in M. Bergson's usage, as meaning anything but highly expert empirical perception. Mr. Kreisler, the violinist, while serving with the Austrian army, was able, owing to the exceptional training of his ear, to distinguish differences in the sound of a moving shell that indicated something about its position or direction. The discrimination had not been made before, but to

an ear made sufficiently sensitive by experience it was a normal empirical perception, by whatever name it might be called. Intuition is, however, in spite of Poincaré's authority, an unfortunate word, for, after all, it is not M. Bergson that will misuse it, but those to whom the way of evidence and proof is too long and tedious. And these, as M. Parodi believes, may become in troubled times a danger not only to philosophy, but to the world.

WENDELL T. BUSH.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Industrial Administration, a series of lectures. Manchester: The University Press. New York: Longmans, Green & Co. 1920. Pp. 203.

Post-war England has shown a considerable interest in the problems of industrial efficiency including the problems of effective industrial administration. This interest has brought the universities into a closer touch with industry and business and has encouraged some of them to undertake the training of executives and administrators. At Manchester it has resulted in the creation of a Department of Industrial Administration in the College of Technology. The eight lectures which comprise the present volume were delivered in this department during the session of 1918-19.

The authors are almost without exception recognized in England as authorities in the special topics with which they deal and are for the most part reporting their experiences either in actual management or else in scientific investigations carried into industry. As is to be expected in such a series there is a considerable diversity both in choice of subjects and in the methods in which these subjects are handled, ranging from a generalized discussion of the possible applications of psychology to industry to a technical report on the relation of specific atmospheric conditions to efficiency. All of the papers, however, are dealing with some phase of the administration of the human problems in industry and are concerned with the management of men rather than with the management of machines, materials, finished products—or with such topics as "cost-accounting," "routing" or scientific management in the narrow sense. In America the volume may be described as dealing with various phases of "industrial relations" or of "personnel administration." If British experience in this field is accurately reflected in the present volume, it does not show any marked advance over the best American theory and practise.

The following are the lecturers and their topics.

B. Seebohm Rowntree, speaking as an employer, presents the social obligations of industry of labor, adopting as his premise "That Industry should everywhere and always serve the needs of citizenship." He gives in detail a cost-of-living study and discusses its relation to earnings. T. H. Pear, professor of psychology in the University of Manchester, is the author of the paper on the applications of psychology to industry. A. E. Berriman, chief engineer of a large automobile works (Daimler), has a paper on education as a function of management. Of particular interest in his discussion of the relations of the various existing educational agencies (elementary, secondary and higher school, trade apprenticeships, part-time schools, *etc.*) to each other and to the conditions of industrial employment. Charts and records for engineering training are reproduced. Dr. T. M. Legge, the Medical Inspector of Factories, reviews the recent progress in the attack on occupational diseases. Dr. Leonard Hill, Director of the Department of Applied Physiology, Medical Research Committee, in his lecture on atmospheric conditions and efficiency, corrects some popular beliefs as to the way in which bad air produces its harmful effects. He has devised an instrument, kata-thermometer, for studying the cooling power of atmosphere and on the basis of his records presents a chart showing probable optimum conditions of temperature and air movement for certain types of work. T. B. Johnson recounts his experiences with industrial councils and considers their possibilities. St. George Heath calls attention to the need of systematic training for factory administration. A. F. Stanley Kent, director of the department in which these lectures were given, contributes a brief lecture on industrial fatigue.

LEONARD OUTHWAITE.

BUREAU OF INDUSTRIAL RESEARCH, NEW YORK.

Lectures on Industrial Administration. B. MUSCIO, editor. London: Isaac Pitman & Sons. 1920. Pp. 276.

A companion volume to that on Industrial Administration from the University of Manchester (reviewed immediately above), is this series of lectures on industrial administration. The editor explains in a preface that the lectures were delivered in a school for the study of industrial management held at Cambridge in July 1919 under the general direction of Dr. C. S. Myers, Director of the Cambridge Psychological Laboratory.

The thirteen lectures in the book are divided in five parts dealing respectively with the ethical, administrative, psychological, phys-

iological and special research problems of industry. In the main the papers are simple and interesting reports of current tendencies in the field of industrial administration. There is nothing refreshingly novel or startlingly progressive to report.

Throughout the volume there is a gratifying acquaintance with American authorities and evidence of a debt to American experience. A. Robert Sterling discusses Taylor's principles in modern British management. Cyril Burt in dealing with vocational diagnosis in industry and at school reviews the work of Münsterberg, Whipple, Hollingworth, Seashore, the Division of Psychology of the Surgeon General's Department and the Committee on Classification of Personnel (unfortunately referred to as the American Personal Department). The lecture on the psychology of advertising is of course indebted to Scott, Hollingworth, Strong and Starch. T. H. Pear in a lecture on social psychology and the industrial system discusses at length Ordway Tead's *Instincts in Industry*. P. Sargant Florence contributes an article on the statistical measurement of the human factor in industry which is based on American experience, particularly on his own work for the United States Public Health Service. In dealing with industrial research A. P. M. Fleming calls attention to the extensive technical research work being carried on here by large companies (Westinghouse, General Electric, Eastman Kodak, etc.) as well as by such organizations as the Mellon Institute and the Bureau of Rolling-Mill Research at Carnegie Institute of Technology.

American managers and students will find a brief account of the British shop stewards' movement in E. M. Wrong's description of some tendencies in industry. They will benefit by a reading of the section on physiological problems of industry, particularly Dr. Edgar L. Collis' account of the practise of industrial welfare and health.

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BUREAU OF INDUSTRIAL RESEARCH, NEW YORK.

JOURNALS AND NEW BOOKS

MIND. April, 1920. *Sense-Knowledge* (3d art., pp. 129-144): JAMES WARD. - From the historical standpoint the continuity between perceptual and conceptual knowledge is shown in the cases of temporal order and number. *The Meaning of Matter and the Laws of Nature according to the Theory of Relativity* (pp. 145-158): A. S. EDDINGTON. - ". . . we have found one mode of thought tending towards the view that matter is a property of the world singled out

by mind on account of its permanence . . . that the so-called laws of nature . . . are implicitly contained in this identification and are therefore indirectly imposed by the mind; whereas the laws which we have hitherto been unable to fit into a rational scheme, are the true natural laws inherent in the external world, and mind has had no chance of moulding them in accordance with its own outlook." *Omnipotence and Personality* (pp. 158-185): W. M. THORBURN. — "God is good, and God is great. But it is mere poetry to call him Omnipotent. He is too obviously limited by the intractability of lifeless matter, and the wilfulness of His own living creatures. His plans for the harmonious perfection of the world are too conspicuously marred and thwarted by dolts, devils, and democrats." *Phenomenal Symbolism in Art* (pp. 186-206): P. J. HUGHESDON. — Considers "what it is that phenomena express, secondly, whether this expressiveness is essential or associative . . . thirdly, what is the difference in this expressiveness according as it is regarded from the esthetic or from the practical point of view." *Discussions*. Mr. Bosanquet on Croce's *Æsthetic*: H. WILDON CARR. Croce's *Æsthetic*: BERNARD BOSANQUET. *Critical Notices*. A. N. Whitehead, *The Principles of Natural Knowledge*: C. D. BROAD. *New Books*. *Aristotelian Society, Supplementary Vol. 2: Problems of Science and Philosophy*: C. D. BROAD. G. M. Stratton, *Theophrastus and the Greek Physiological Psychology before Aristotle*: W. D. ROSS. Vladimir Solovyof, *The Justification of the Good*: A. E. TAYLOR. I. I. Efros, *The Problem of Space in Jewish Medieval Philosophy*: C. T. HARLEY WALKER. Irving Babbitt, *Rousseau and Romanticism*: B. BOSANQUET. G. Pitt-Rivers, *Conscience and Fanaticism*: G. G. L. Stein, *Philosophical Currents of the Present Day*: F. C. S. SCHILLER. P. Decoster, *La Réforme de la Conscience*: L. J. RUSSELL. Count H. Keyserling, *Das Reisetagebuch eines Philosophen*: F. C. S. SCHILLER. G. Castellano, *Introduzione allo studio delle opere di Benedetto Croce*: H. WILDON CARR. G. Marchesini, *Lo Spirito Evangelico di Roberto Ardigò*: A. E. T. *Philosophical Periodicals*. Note.

Paul Barth, Erich Becher, Hans Driesch, Karl Joël, A. Meinong, Paul Natorp, Johannes Rehmke, Johannes Volkelt. *Die Deutsche Philosophie der Gegenwart in Selbstdarstellungen*. Leipzig: Felix Meiner. 1921. Pp. viii + 228. 60 m.

Child, Charles Manning. *The Origin and Development of the Nervous System from a Physiological Point of View*. Chicago: University of Chicago Press. 1921. Pp. 296. \$1.90.

Royce, Josiah. *Fugitive Essays*. Edited by J. Loewenberg. Cambridge: Harvard University Press. 1920. Pp. 429.

Santayana, George. *Character and Opinion in the United States: With Reminiscences of William James and Josiah Royce and Academic Life in America*. New York: Charles Scribner's Sons. 1920. Pp. viii + 233.

NOTES AND NEWS

THE following from *Nature* will interest American societies and individuals that would like to cooperate in any effort to help Russian men of science:

We have recently been able to get some direct communication from men of science and men of letters in North Russia. Their condition is one of great privation and limitation. They share in the consequences of the almost complete economic exhaustion of Russia; like most people in that country, they are ill-clad, underfed, and short of such physical essentials as make life tolerable.

Nevertheless, a certain amount of scientific research and some literary work still go on. The Bolsheviks were at first regardless, and even in some cases hostile, to these intellectual workers, but the Bolshevik government has apparently come to realize something of the importance of scientific and literary work to the community, and the remnant—for deaths among them have been very numerous—of these people, the flower of the mental life of Russia, has now been gathered together into special rationing organizations which ensure at least the bare necessities of life for them.

These organizations have their headquarters in two buildings known as the House of Science and the House of Literature and Art. Under the former we note such great names as those of Pavlov the physiologist and Nobel prizeman, Karpinsky the geologist, Borodin the botanist, Belopolsky the astronomer, Tagantzev the criminologist, Oldenburg the Orientalist and permanent secretary of the Petersburg Academy of Science, Koni, Bechterev, Satishev, Morozov, and many others familiar to the scientific world.

Several of these scientific men have been interviewed and affairs discussed with them, particularly as to whether anything could be done to help them. There were many matters in which it would be possible to assist them, but upon one particular they laid stress. Their thought and work are greatly impeded by the fact that they have seen practically no European books or publications since the Revolution. This is an inconvenience amounting to real intellectual distress. In the hope that this condition may be relieved by an appeal to British scientific workers, Professor Oldenburg formed a

small committee and made a comprehensive list of books and publications needed by the intellectual community in Russia if it is to keep alive and abreast of the rest of the world.

It is, of course, necessary to be assured that any aid of this kind provided for literary and scientific men in Russia would reach its destination. The Bolshevik government in Moscow, the Russian trade delegations in Reval and London, and our own authorities have therefore been consulted, and it would appear that there will be no obstacles to the transmission of this needed material to the House of Science and the House of Literature and Art. It can be got through by special facilities even under present conditions. Many of the publications named in Professor Oldenburg's list will have to be bought, the costs of transmission will be considerable, and accordingly the undersigned have formed themselves into a small committee for the collection and administration of a fund for the supply of scientific and literary publications, and possibly, if the amount subscribed permits of it, of other necessities, to these Russian *savants* and men of letters.

We hope to work in close association with the Royal Society and other leading learned societies in this matter. The British Science Guild has kindly granted the committee permission to use its address.

We appeal for subscriptions, and ask that cheques should be made out to the Treasurer, C. Hagberg Wright, LL.D., and sent to the British Committee for Aiding Men of Letters and Science in Russia, British Science Guild Offices, 6 John Street, Adelphi, London, W.C.2.

MONTAGUE OF BEAULIEU,
ERNEST BARKER,
E. P. CATHCART,
A. S. EDDINGTON,
I. GOLLANZ,
R. A. GREGORY,
P. CHALMERS MITCHELL,
BERNARD PARES,
ARTHUR SCHUSTER,
C. S. SHERRINGTON,
A. E. SHIPLEY,
H. G. WELLS,
A. SMITH WOODWARD,
C. HAGBERG WRIGHT.

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY :

Among the mental disturbances resulting from the war and commonly classed as "shell-shock" are many cases of battle blindness, usually evanescent though sometimes permanent. That this affliction is not due to modern artillery is proved by the fact that it was known long before the invention of high explosives. Perhaps the earliest instance on record is that told by Herodotus in his account of the battle of Marathon (VI., 117) :

The following prodigy occurred there: an Athenian, Epizelus, son of Cuphagoras, while fighting in the medley and behaving valiantly, was deprived of sight, though wounded in no part of his body, nor struck from a distance; and he continued to be blind from that time for the remainder of his life. I have heard that he used to give the following account of his loss. He thought that a large heavy-armed man stood before him, whose beard shaded the whole of his shield; this specter passed by him, and killed the man that stood by his side. Such is the account, I have been informed, Epizelus used to give.

Of course the valiant Athenian may in the stress of conflict have burst a blood vessel or started some other physiological injury but the accompanying hallucination would imply a case of psychical blindness, which might therefore be called "Epizelus's disease."

EDWIN E. SLOSSON.

WASHINGTON, D. C.

PROFESSOR ALEXIUS MEINONG, of the University of Graz, died on November 27, 1920, at the age of sixty-seven years. It is unnecessary to dwell upon the loss to philosophy in the death of so able a thinker at the maturity of his power.

GEHEIMRATH DR. RICHARD FALCKENBERG, professor at Erlangen since 1888, died after a brief illness, September 28, 1920. Professor Falkenberg's best-known work is his *Geschichte der neueren Philosophie*, now in its eighth edition; the final chapters of this edition are printing under the care of his son, Dr. Robert Falckenberg, himself a graduate in philosophy. Professor Falckenberg was also the editor of the series, *Frommanns Klassiker der Philosophie*, to which he contributed the volume on the life and works of Lotze, 1901, and co-editor of the *Zeitschrift für Philosophie und philosophische Kritik*.

THE JOURNAL OF PHILOSOPHY

A BEHAVIORISTIC VIEW OF PURPOSE

WHERE matters of fact are in question it is normally the office of the philosopher to trace the broader outlines of accepted fact rather than to contribute new items of fact. The features of human nature which have recently been assembled by psychology, and particularly the newer facts which have been brought to light by behavioristic and psychiatric observers have already begun to compose a physiognomy. For the first time since the moralists and theologians divided the soul from the body, man is beginning to find a place in nature without being stripped of his most distinctive characteristics. He has begun to move about on the surface of the planet while still retaining possession of his faculties. This achievement is due primarily to that general psychological tendency which has acquired the name of behaviorism from one of its particular and recent manifestations. Behaviorism in the generalized sense is simply a return to the original Aristotelian view that mind and body are related as activity and organ. Expressed in more modern terms this means that the mental life consists of those performances of an organism that immediately involve the exercise of its nervous system. The difference between psychology and physiology ceases to be a difference of subject-matter, like the difference between entomology and ornithology, where each deals exhaustively and exclusively with a class of objects; and becomes a difference of method and approach like that between chemistry and physics, where two sciences deal with interpenetrating type-complexes which contain common elements and are found in the same objects. Psychology deals with the grosser facts of organic behavior, and particularly with those external and internal adjustments by which the organism acts as a unit, while physiology deals with the more elementary constituent processes, such as metabolism or the nervous impulse. But in so far as psychology divides the organism it approaches physiology, and in so far as physiology integrates the organism it approaches psychology.

There is at present another difference that is likely in the near future to be obliterated. The nervous system of a highly developed

organism plays a double rôle. Or, as it is more commonly expressed, there are two nervous systems, the cerebro-spinal or central system, and the autonomic system. The former regulates the organism's external affairs and the latter its internal affairs. Now it is eustomary for psychology to concern itself primarily with the former, leaving the latter to physiology. In other words psychology views behavior as a commerce of the organism with its environment, in which the organism imports stimuli and exports acts. The central nervous system receives stimuli at the peripheral sense-organs and delivers acts at the skeletal muscles. It has also its executive offices in which a record is kept of all such transactions, and in which the rate and the form of exchange are determined. Meanwhile the autonomic nervous system is supposed to keep the plant in repair and supply the fuel. But as in most forms of business, it is difficult to draw any sharp line between up-keep and out-put. Certainly if the reserves of the human organism are seriously depleted, or if the machinery breaks down, all hands are called upon to repair the damage and for a time no other business is transacted. Indeed the executives would appear to be constantly in receipt of reports on the condition of the plant and largely to be governed in their policy by what is reported. There is much to be said even for the view that the care of the plant was originally the sole object of the business and that its commercial transactions developed out of the need for fuel. This is the view, now strongly supported,¹ that the central nervous system is an out-growth of the autonomic system. In any case from what we now know about emotion, and what we have always known, but have not yet succeeded in understanding, about feeling, it is evident that a powerful influence is exerted on the organism's behavior by the whole internal economy, including the glands of internal secretion as well as the major nutritive, respiratory and circulatory processes.

Waiving this last consideration for the present, let us return to that view of the organism which is defined by the functions of the central nervous system. The organism is on the plane of moving bodies and physical forces, where it is elbowed and trodden by all elements, but where it gives as good as it gets. Where does the "mind" fit into such a picture, and where the will and the reason? Somewhere, evidently, between the stimulus and the act. If you ask a man a question and get an answer, his mind has been at work between the question and the answer, between the sound waves which impinged on his auditory nerve and those which emanated from his vocal organs. From your standpoint as an untrained observer there is a hiatus. You put in your question and you wait

¹ Cf. e.g., Kempf, *The Autonomic System and the Personality*.

for your answer. If you are an introspective psychologist you ask another question, and get another answer. If you are a behaviorist you follow the stimulus towards its destination and the act towards its source until they meet and the gap is closed. If you are an introspectionist you regard the mind as something that *supervenes*, or hovers about the hiatus. If you are a behaviorist you regard the mind as something that *intervenes* as an arc or circuit of the general causal nexus. When so regarded the mind appears as a physical complex which receives, transmits, converts and gives out physical influences, and which is constantly changing its external and internal adjustments in consequence of its activities.

The elementary unit of conduct or behavior on the part of organisms having such a structure will be a movement induced by a stimulus. The specific character of the act will lie in its having effected just that movement in consequence of just that stimulus; and the characteristic property or state of such a mind will lie in the arrangement of parts conditioning such an act. An act of mind will be a response; and a state of mind will be a disposition to respond.

Now many will object that this is to leave out "consciousness." But what is this "consciousness" we are under obligation to include—is it a datum or a theory? It was once said that psychology omitted the soul. And so it did, in so far as the term "soul" was the name for a theory formulated in theology or "rational" psychology. But psychology never deliberately neglected any of the facts or problems lying within the field of the mental life of man; and as a result of omitting the older theory of the soul it reached a very much better understanding of the actual mode of existence in question. No one would now think of conceiving the soul as a simple, indivisible and incorruptible static entity, or as a naked act of pure reason. In every philosophy the soul is now a process; or a flowing, and more or less complexly organized, experience. When, therefore, we say the soul is lost, what we really mean is that a theory is more or less obsolete, as a result of its having been successfully ignored. The soul as an existent fact having a nature and an explanation, is not lost, but found.

Now something of this same outcome may with reasonable safety be predicted in the case of "consciousness." If a behaviorist be enlightened he will have no intention of omitting any facts, but only of abandoning a theory which he believes has proved unsatisfactory. He does not abandon *consciousness*, but the introspective *theory* of consciousness. This consists in taking the data of introspective analysis as the ultimate constituents of the mental life, the

units which in their own peculiar aggregations and sequences compose mind. Psychophysical parallelism and atomic sensationalism are developments of this theory, and are evidences of its weakness. It has in fact never worked. The most illuminating things that psychology has said have been said when it has allowed itself liberties with this theory, and introduced as much of the outlying physical and organic field as proved convenient. The behaviorist has emphasized the failure of the introspective theory to yield results comparable to those obtained in kindred sciences, and proposes to try another. He does not deny or intend to neglect any of the data of introspection. He merely believes that this is not the best place to begin, because the introspecting mind is a peculiarly complex form of the mental life. He regards an animal reflex or habit as a more elementary mental phenomenon than an introspectively discriminated sensory intensity.² He believes that introspection does not present mind as such, or characteristic mental phenomena or events; but that it may present pretty much any subject-matter, such as parts of physical nature within or without the organism. Beginning with any experience, introspection suspends further exploration and becomes more attentively observant of what was first in this way circumscribed. Features are now discriminated which were not at first noticed; and construed as a test of capacity, this doubtless indicates how many items of the physical world the human mind can discriminate. But the mental part of it should then be looked for not in what is discriminated, but rather in the act of discrimination. And since this is a relatively complex case of mental action it would appear to be the part of prudence to begin with some simpler act, such as the reflex. The behaviorist concedes that introspection and all its works must find a place in any comprehensive and adequate view of mind. When they do find their place they will perhaps have lost their present outlines, because of having been broken up and redistributed. But in so far as the new theory is more successful than the old, consciousness as a group of facts, as something that exists and happens, will have been found and not lost.³

² For an admirable discussion of this question and a behavioristic interpretation of sensation, cf. G. A. De Laguna: "Sensation and Perception," this JOURNAL, 1916, Vol. XIII., pp. 533, 617.

³ The behaviorists would hope, incidentally, to rescue consciousness from the hands of its parallelistic friends who in proportion as they insist upon its mental purity find themselves compelled to admit its causal impotence. Thus Professor H. C. Warren is driven by the very rigor of his scientific method to conclude that "To say that we are 'conscious of the performance' of the act does not add to the explanation of the physical changes which occur, nor does 'lapse of consciousness' add to the explanation of inappropriate reactions" ("The Mechan-

The failure of the introspective theory of consciousness has been most pronounced in the region of the will and the affections, in other words, in that department of human nature where there is now the greatest demand for light. That the introspective method should tend to a reduction of the mental life to sense-data is perhaps evidence if its being at bottom only an analysis of *objects of cognition*. In any case the failure of introspection to give any satisfactory account of feeling, desire, will, and conation does not admit of doubt. The dubious feelings of "pleasantness" and "unpleasantness," which if they *are* a unique species of introspective data ought to be indubitable, are held by some to be simple sensations, by others to be fusions of organic sensations, and by others to be acts or "attitudes" of liking and disliking. The notion of a feeling element serves for the present only to prevent opinion from swinging either towards a consistent sensationalism, or towards a consistent activism. The former would obliterate the distinction between cognition and motor-affection; the latter would involve the abandonment of the introspective method.

Meanwhile, wherever accounts of the motor-affective life preserve anything distinctive and peculiar, they incorporate something of the movement and action of the physical organism. The basic antithesis of favor and disfavor, which is said to distinguish active feelings, is an echo of the antithesis between positive and negative reactions.⁴ Desire viewed introspectively can never be anything but a combination of ideas and feelings. A. Meinong and other exponents of the introspective method have seen the difficulty of accounting in these terms for actual dynamic differences, such as that between desiring a thing and liking to think of it, or that between real desire and the sham-desire characteristic of play and esthetic detachment. But being an introspectionist, Meinong can not follow up the method of common sense and refine the evident differences of behavior and functional adjustment, but must simply invent *ad hoc* such entities as the *Annahme*, *Phantasiegefühl* and *Wissensgefühl*.⁵ C. V. Ehrenfels makes a truly heroic effort to "ics of Intelligence," *Philos. Rev.*, 1917, Vol. 26, p. 617). The better course would be so to interpret "consciousness" of the performance as to enable it to take its place among the determining conditions of the performance; that is to construe consciousness dynamically from the outset.

⁴ This appears to me to be the case, for example, with Schwarz's conception of *Gefallen* as distinguished from *Gefühl*. Cf. his *Glück und Sittlichkeit*, Halle, 1902. I do not deny the common opinion that the animistic view of nature is a projection into external objects of the experience of conation, but I do affirm that what is so projected is now understood to be mainly if not wholly an experience of bodily action.

⁵ Cf. *Ueber Annahmen*, 1902, *passim*.

define desire introspectively, and after observing that there is here no unique psychical element, proposes a peculiarly complicated combination of ideas and feelings. "*Was wir Begehren nennen, ist nichts anderes als die—eine relative Glücksförderung begründende—Vorstellung von der Ein-oder Ausschaltung irgend eines Objectes in das oder aus dem Causalgewebe um das Centrum der gegenwärtigen concreten Ichvorstellung.*"⁶ Waiving all doubts as to the introspective correctness of this description, it is to be noted that in so far as it remains rigorously introspective it fails to provide for the dynamic aspect of desire. The impelling force of desire is supposed to lie in feeling, in *Glücksförderung*. Since it is not clear whether Ehrenfels finds the distinctive feature of desire to lie in the possession of the mind by the idea, or in the tendency of the idea to be realized in fact, let us consider both cases. An idea of the creation or annihilation of an object enters the mind and keeps its place there whenever the subject in question would otherwise feel worse. But this less agreeable alternative never becomes an introspective datum, and Ehrenfels thus virtually explains desire in terms of the way the subject in question is *disposed* to feel. Or, let us suppose desire to be the tendency of the idea to be realized in fact. As Ehrenfels describes it, this means that an idea not only enters the mind and holds its place therein by virtue of its relatively agreeable character, but is superseded by a succession of ideas each of which in turn more nearly approximates the actuality of an object at first only remotely represented in idea. Thus the kinesthetic images of the bodily movements which immediately cause the object's actuality take the place of the first bare supposition of its actuality, and the process will culminate in the perception of the actuality as an accomplished fact. But how does *Glücksförderung* account for this succession? Again we can only say that if each step in this progressive realization had not been taken when it was taken the subject would have been less pleased than he was. The line from the idea to its realization is the line of most possible pleasure under the circumstances. But this only establishes a hypothetical concurrence of pleasure with realization. The pleasures themselves evidently do not account for the realization. They must themselves, along with the realization, be explained in terms of some tendency or disposition for which introspection has no eye. Desire is a state of mind with reference to an object such that the mind "won't be happy till it gets" the object. But to explain such a state of mind, or even to describe it in the sense of assembling the facts that out-

⁶ *System der Werttheorie*, 1897, I., pp. 248-249.

line and block it off, it is necessary to deal with the organism and the environment in their round physical dimensions.⁷

As to will, Münsterberg's reduction of this to such terms as *der Wahrnehmung des erreichten Effektes die Vorstellung desselben vorangeht*,⁸ perfectly illustrates the extent to which introspection forces its subject-matter into the cognitive form, or endeavors to make up the whole of will by piecing together its cognitive shreds and patches. Münsterberg deserves credit for the vigorous consistency with which he adhered to introspection when he did employ it, as well as for his recognition of the fact that the will when so regarded is not the real will at all.⁹

As to conation or effort, introspective records seem to be confined mainly to sensations or feelings of conation or effort, these being first conceived in some physiological sense. Thus for Ehrenfels striving (*streben*) differs from willing through the presence of *Bewegungsempfindungen* or *Anstrengungsempfindungen*.¹⁰ Stout speaks of a "mental striving," which "tends to realize itself," and of which the physiological correlate is "the tendency of a neural system to recover a relatively stable condition." What, one may fairly ask, is the common meaning of "tendency" on the mental and the physiological sides? Or is the latter the real tendency and the former the feeling of it?¹¹ McDougall argues from the principle of parallelism that we are justified

in assuming that the persistent striving towards its end which characterizes mental process and distinguishes instinctive behavior most clearly from mere reflex action, implies some such mode of experience as we call conative, the kind of experience which in its more developed forms is properly called desire or aversion, but which, in the blind form in which we sometimes have it and which is its usual form among the animals, is a mere impulse, or craving, or uneasy sense of want.¹²

Reading this author's account as a whole one can not but be convinced that he derives the structure of instinct altogether from its organic aspect, as when he says that "the innate psycho-physical disposition, which is an instinct, may be regarded as consisting of three corresponding parts, an afferent, a central, and a motor or efferent part, whose activities are the cognitive, the affective, and

⁷ Ehrenfels himself frequently appeals to *Gefühlsdispositionen*; e.g., *op. cit.*, I., p. 41. For criticisms of Ehrenfels similar to that offered above, but having a very different moral, cf. Meinong: *Über Annahmen*, 1902, pp. 293-296; W. M. Urban, *Valuation*, pp. 35-37. Cf. also Ehrenfels: *op. cit.*, I., p. 251, note.

⁸ Münsterberg's *Willenshandlung*, p. 88.

⁹ Cf. *Psychology and Life*, 1899, p. 208.

¹⁰ *Op. cit.*, I., p. 221.

¹¹ *Analytical Psychology*, II., pp. 82, 83.

¹² W. McDougall: *Social Psychology*, p. 28.

the conative features respectively of *the total instinctive process.*"¹³ Similarly he says that every instance of instinctive behavior involves "a striving *towards or away from*" an object; and that in all instinctive behavior there is "*a persistent striving towards the natural end of the process,*" which is intensified by obstacles.¹⁴ It is clear that neither the three-fold arrangement of instinct, involving the assignment of conation to the motor part, nor the direction of conation as "towards" or "away from" an object, nor the persistence of the striving appear at all in the field of introspection. In other words, all the characteristics of conation are borrowed from the behavior of the organism, except what is comprised under "feeling of" or "consciousness." What is really described is what one is conscious of when one is conscious of striving. It would seem reasonable, then, first to describe and explain *striving* as a general organic process, and then to discuss the further and necessarily ulterior question of the feeling or consciousness to which it gives rise.¹⁵

The defects of parallelistic introspectionism are especially flagrant in the motor-affective field of the mental life. Almost every recent advance in this field has resulted from the more or less complete abandonment of the introspective method of description and the parallelistic method of explanation. The most notable advance, an advance that has been accepted by the social sciences as well as by popular opinion, is the rejection of the once-classic calculating hedonism, the view that conduct is ruled by *selfish pleasure-pain reasons.*¹⁶ The chief cause for the obsolescence of this view has been the resort to biological in place of introspective methods of explaining human conduct. Pleasure and pain are peculiarly introspective entities; and an introspective account of action tends, as we have seen, to place the whole burden of explanation on feeling. As to the selfish and calculating part of it, that evidently arose from the introspective method of asking an agent to explain his own conduct. Such a question is ambiguous, and is commonly construed by the subject interrogated as a demand for reasons by which to justify his conduct. In the ordinary run of conduct the best a man can say in defense of his conduct is that it is prudent,

¹³ *Ibid.*, p. 32. The italics are mine.

¹⁴ *Ibid.*, pp. 26, 27. The italics are mine.

¹⁵ It has sometimes been argued that desire, will, *etc.*, must be complete in introspection because a subject may know infallibly that he is desiring, or willing without knowing anything about his bodily states. The argument has absolutely no force. Such knowledge is not infallible, nor is it entirely without bodily data. Furthermore there may be "infallible signs" which do not constitute either direct or complete experience of the event in question. Cf. B. Russell: "On the Nature of Acquaintance," *Monist*, 1914, XXII., 184.

¹⁶ Cf. G. Wallas, *Human Nature and Politics*, Ch. I.

that is conducive to his own satisfaction (which he is perfectly willing to *call* pleasure).

This "key" to human conduct has now been exchanged for a new one, or for a whole set of keys of a new type. The first of these to be adopted was the unit-instinct, and the most recent is the "complex."¹⁷ The unit-instinct made prominent by James, and at present exemplified in McDougall's widely read and widely quoted *Social Psychology*, is being questioned by psychologists at the same time that it is being very widely and uncritically adopted in sociology and economics.¹⁸ Meanwhile the influence of Freud has rapidly increased, and at the same time his fundamental conception of the "libido" has been generalized to free it from an exclusively sexual meaning.¹⁹ The "complex" has this advantage over the instinct, that it is not necessarily a genetic conception. It is true that orthodox Freudians trace all complexes to inherited and infantile eroticism. But in its generalized form the complex is essentially a present dynamic agency; in Hart's words, "a system of connected ideas, with a strong emotional tone, and a tendency to produce actions of a certain definite character."²⁰ A complex in this sense may be appealed to for explanatory purposes without identifying that most doubtful and elusive line that divides what is original from what is acquired.

But what have these two conceptions in common? Why may the instinct and the complex be said to be keys of the same type? In the first place, because both are essentially dispositions. They exist whether they are exercised or not. And when they are exercised they are activities, like circulation and respiration, describable in terms of characteristic organic and environmental changes, and not describable except in a most incomplete and misleading way,

¹⁷ One hesitates to group "complex" and "sentiment" with "instincts," "purpose" and "determining tendency" because the two former conceptions appear to regard an *object* as the source of unity, whereas the latter emphasizes a dominant activity. It does appear to be possible to divide a man into his "A-system" of responses, his "B-system," etc., or into ambitions, enterprises, problems, etc., which will involve many objects. I believe, however, that the more these things are analyzed the more indistinguishable they become. In so far as my A-responses have unity, as for example my love of my friend, some one instinct or emotion has become dominant in my dealings with him, and prescribes what my other reactions shall be. In other words I have something like a purpose with reference to my friend. A purpose on the other hand has a unique reference to certain objects, perhaps to one object, which is the object of its culminating and "satisfying" activity.

¹⁸ Cf. e.g., Th. Veblen: *The Instinct of Workmanship*, 1914; O. Tead: *Instincts in Industry*, 1918; C. H. Parker: "Motives in Economic Life," *Proc. of the Amer. Economics Assoc.*, 1917, pp. 212-231.

¹⁹ Cf. e.g., Hart: *Psychology of Insanity*, 1912.

²⁰ *Op. cit.*, p. 61.

in terms of introspective data. There are three possible ways of assigning a status to dispositions. Assuming that the mental is non-physical, and that dispositions are mental, they may be construed as belonging to an "unconscious" mental life. What this mental life is which is neither physical nor introspective no one has yet succeeded in making clear. And since every indication points to a physiological interpretation of dispositions, this conception of the "unconscious" is as gratuitous as it is unintelligible. Seeing the force of this, one may conclude that since dispositions are physiological they are therefore not mental. Or, thirdly, accepting the behavioristic version of mind, one may regard dispositions as both physical and mental: physical because consisting in certain physiological structures, mental because of the peculiar type of function or activity in which these structures are engaged. Instincts as a rule have been so interpreted largely because the conception was derived from the observation of animals, where mind has always in practice meant behavior. That complexes have not as a rule been so interpreted seems to be due to the fact that the Freudians have been primarily interested in the activities of the complex rather than in its structure and place in nature.²¹ Of one thing they have been sure, namely that this fundamental mode of mind is not a datum of introspection. Their interpretation in physiological terms would not contradict any observed properties which they possess; while it would have the great advantage of removing them from an obscure and doubtful region where they may be the victims of loose speculation and popular superstition, to a well-defined and open region where they may be further illuminated by the observations of the associated sciences.

The instinct and the complex are, then, first of all organic dispositions, or systematic arrangements in the physical organism which condition specific modes of performance. There are further common characteristics. In each case there are stored energies and channels arranged in groups and patterns. These channels, like river beds, have the property of transmitting and guiding energy and also of drawing energy by their lower resistance. In each case there must be stimuli, that is, conditions external to the system in question which release its stored energies and set it going. The system must possess a peculiar susceptibility to such influences, like the explosive's susceptibility to impacts or high temperatures. In each case the system tends to find expression in coordinated muscular changes usually causing a movement of the skeletal muscles and some change in external objects or in the relation of the organ-

²¹ For a physiological interpretation of complexes, cf. E. G. Holt, *The Freudian Wish*, 1915, pp. 3-99.

ism to them. Finally, in each case the system comes temporarily into possession of the organism as a whole, competing with other systems for the control of the common parts in which they overlap.

Emphasizing their points of similarity we obtain the broad outlines of a more fundamental conception, which they both exemplify and of which we may hope to find further exemplifications as well as improved and amplified statements. This more fundamental conception may perhaps best be termed *set* or *determining tendency*, a condition of the organism which qualifies and predisposes it to execute what Holt calls a specific "course of action," when a specific exciting condition occurs. Within the general framework of this conception let us now look for an interpretation of those characteristic modes of behavior that are supposed to distinguish the normal adult of the human species, such as acting interestedly, purposely, or rationally. This inquiry should lead us to the center of the motor-affective life, and of the intellectual life in its bearing on conduct. Our results will at best be rude schematic approximations. Science has not really penetrated into the wilderness of human nature. We are still camping on its frontiers or cruising off its coasts. But at such a time it is justifiable to make a hasty reconnaissance even though we may expect (and hope) that the maps we draw will soon be obsolete.

Let us start with that state of a man in which he is said to be prepared for future action, or to have his plans made so far as concerns what he is himself to do. A good example is afforded by the chess player who has a series of moves ready in advance, or the foresighted housewife who has made up her mind what to cook for each successive meal for the coming week. Future responses are at least partially organized, and are held in reserve in the order of their appropriate stimuli. As each in turn is called into play the next in order moves into its place, just as in baseball the "batter-up" moves towards the batter's box, selects his bat and makes a few preliminary swings. While the serial order of prepared responses is not always as clear as this, something of the kind is a constant feature of human conduct. Immediately behind what I am doing now there is what I am going to do next, and behind that, successive lines of reserves which advance toward the front as my action unfolds. A similar situation must be supposed to exist when a response is only partially executed. A football player about to catch and run back a punt has the whole action outlined in advance. At the same time that he is watching the ball in its course through the air he is ready with neuro-muscular coordinations of the arms and legs to grasp the ball, ward off tacklers and run down the field. At any given instant in the course of this action some part of it is

being carried out, while other parts are carried as far forward as is possible without interference with that part which is being carried out. So far are these preparations carried that the organism is at the time incapable of doing anything else, and will if "over-anxious" carry the preparation too far, as when the running-response crowds the catching-response and causes the player to fumble the ball.²²

We may say, then, that most human action instead of being born *de novo* at the moment of performance merely passes over from an implicit or partial state to an explicit or complete state. The organism is loaded and aimed, in short, before it is fired. Or the organism is ordinarily in a state of being committed in advance of performance. These reserve responses must be supposed to possess an unqualified physiological existence, even though they are not in action and even though they should never be called into action. It is unnecessary to dwell upon the various forms which these may assume. They may be so related that the action of each provides the stimulus for the action of the next, in which case they are in some sense parts of one plan; or they may be correlated with successive stimuli externally and independently supplied, as when one is prepared for a sequence of probable contingencies.

Now let us suppose such a reserve or partial response to be in the advanced stages of preparation and then to be checked through the non-appearance of the complementary stimulus or through some impediment. Either one of two things will happen. If there are other prepared responses for which the appropriate stimuli are present, the organism may go over to another course of action. If, however, the first course of action possesses a temporary monopoly of the energies of the organism, responses will occur which have the character of being auxiliary. These may assume the form of "random" activities, habits or inherited reflexes, for which suitable stimuli are presented. This will continue until some one of the random activities provides the complementary stimulus or removes the impediment and so permits the original response to complete itself. But in proportion as an organism is "experienced" in the matter such auxiliary activities are not random. Certain of the present stimuli have acquired "meaning." The immediate response which they excite is again, as in the case of the original response, the first of a series of acts. Successive ulterior acts are made ready

²² Or the anticipatory set may have so much momentum that it is impossible to readjust quickly to a change in the situation. A good example is afforded by the case of the subject who being prepared to lift a heavy weight is given a light one instead, with the result that it is flung high above the head with a wholly disproportionate expenditure of energy. (Quoted from Müller by James, *Principles*, 1890, II., p. 502, note.)

to take their turn. But in some cases these tentative reserves will coincide and in some cases they will conflict with the suspended response. Where the former is the case the tentative act will be performed and where the latter occurs the act will be abandoned after having been "considered."

We have now obtained a first approximation to a view of interested or purposive action. An act is performed because its prepared sequel or implicit phase coincides with the incomplete part of some course of action that is at the time dominating the organism. Under the tension created by a suspended response an organism performs one or more acts which *promise* the act or acts in which the response is carried out. Let us call the suspended response which for the time commands the energies of the organism, the *determining tendency*; and let us use the expression *auxiliary responses* for the acts which occur under the influence of such a tendency when its completion is delayed.

Suppose, for example, that my determining tendency is to obtain a book from my study. I approach the door and turn the knob, having in readiness and in serial order the neuro-muscular coordinations involved in pushing open the door, walking across the room and grasping the book. The door, however, resists my push. This act being checked, the ulterior acts are also checked and crowd it from the rear. I do not desist, responding irrelevantly to some other stimulus that happens to engage my attention, as a baffled kitten may turn to playing with its tail, but I "try," or engage in auxiliary responses. Being a person of experience, however, instead of kicking, pounding, shouting or running back and forth, I look around, that is I increase the number and range of stimuli that affect me. Finally I see a key hanging on a nail. This key means something to me. It has its immediate meaning as something to be grasped, and an ulterior meaning in terms of a series of anticipatory sets arranged in depth. In other words, when I grasp keys I also get ready to perform certain further acts in orderly succession. Near the head of this tentative line of action is that same anticipatory set (for pushing open the door) which now stands at the head of the original line, pressing for release. The implicit phase of the auxiliary course of action coincides with the suspended portion of the dominating tendency, and the auxiliary course of action is adopted.²³

The central feature of this conception of human behavior is that

²³ In this case the suspended course of action is resumed at the same point at which it was interrupted. I might have adopted a course of action whose reserve phases coincided with those of the dominating tendency later on. In other words I might have gone around and climbed in a window, or borrowed my neighbor's book.

general state of the organism which has been termed a determining tendency. The organism as a whole is for a time preoccupied with a certain task which absorbs its energy and appropriates its mechanisms. It must be assumed that synaptic resistances are lowered or heightened not merely as a result of the past history of the nervous system, but as the result of some present systematic readjustment.²⁴ The passing of impulses through certain channels must be conceived not as the result of past erosion, but as the result of a correlated raising and lowering of gates. Another analogy is afforded by the insertion in a mechanical musical instrument of a record or perforated roll which calls the parts of the instrument into play in simultaneous and successive patterns.

There can be little doubt that the organism is subject to such "seizures." Hitherto attention has been directed chiefly to their origin, or to their behavior under peculiar conditions, as when they are repressed.²⁵ It is here contended that whether such determining tendencies are congenital or acquired, whether they are the agents or the victims of repression, they do in any case exist and give to human (and much of animal) behavior its characteristic form. In discussions of the instincts it has been customary to dwell upon their congenital origin, and upon the specific pattern of the response; while little has been said about the power which an aroused instinct has to take possession of the entire organism. We have heard much of the stimuli to anger, much of the feeling of anger, and much of the more or less specific and more or less doubtful innate forms of response in which it expresses itself. But we have heard comparatively little of the state of *being angry*.²⁶ Cannon's

²⁴ As evidence of the willingness of psychologists to accept other determiners of action than recency, frequency and other items of the local history of the mechanisms immediately involved, it may be noted that Watson includes among such determiners "the general setting of the situation as a whole," and the experiences, "emotional tensions," etc., of the organism as a whole in the period immediately preceding the incidence of the stimulus. There should be added the general posture of the organism as a whole at the moment of the incidence of the stimulus. Cf. *Psychology from the Standpoint of a Behaviorist*, 1919, p. 3.

²⁵ Over and above the question of the formation of a determining tendency there is also the profoundly important question of its being called into play. What is it that puts any given determining tendency in the ascendancy at any given time and causes it to be successively superseded by others? Why am I now angry, now running to catch a train and now thinking out a problem? We may surmise what some of the causes are, such as routine, the onset of new stimuli, the completion of a previous course of action, health, fatigue, or the requirements of some long range "programme" of action. It is with no intention of slighting this question that it is omitted here. Whatever be the facts they will not invalidate anything that we may learn about the structure and working of the determining tendency when once it is in control.

²⁶ A notable exception is the passage in which James describes the situa-

experiments have shown, however, that in anger the whole organism is virtually commandeered for war purposes:

Thus are the body's reserves—the stored adrenin and the accumulated sugar—called forth for instant service; thus is the blood shifted to nerves and muscles that may have to bear the brunt of struggle; thus is the heart set rapidly beating to speed the circulation; and thus, also, are the activities of the digestive organs for the time abolished. Just as in war between nations the arts and industries which have brought wealth and contentment must suffer serious neglect or be wholly set aside both by the attacker and the attacked, and all the supplies and energies developed in the period of peace must be devoted to the present conflict; so, likewise, the functions which in quiet times establish and support the bodily reserves are, in times of stress, instantly checked or completely stopped, and these reserves lavishly drawn upon to increase power in the attack and in the defense or flight.²³

What is true of the bodily functions regulated by the autonomic nervous system is also true of the functions regulated by the central nervous system. In an angry organism bodily movements and postures, speech, imagery and ideation, attention, and even receptivity to sensory stimulation, are all drawn into one comprehensive response. Only stimuli whose meanings are congruent with this general cast of mind are responded to. Other responses involving different uses of the same parts and organs are temporarily inhibited. The organism literally lives and moves and has his being in anger.

While the major emotions exemplify the extent to which a determining tendency may master the total organism, they are in several respects peculiar. There is usually no specific end-response in which the course of action culminates. It is rather a series of acts of a similar type, such as abuse or blows in the case of anger. It is not highly articulated and subordinated, but moves from point to point upon the same level. Such action is usually too precipitate to be nicely selective. And, finally, such action is unique in the extent to which it interferes with the internal economy of the organism. Too much emphasis on the major emotions tends, therefore, to obscure the essential characteristics of the determining tendency. For a determining tendency may culminate in specific and delicate adjustment like the spelling of a word, or the picking of a lock. It may be highly organized, and convergent in long-delayed achievement. It is not necessary that the determining tendency should call the entire organism into play. One may prepare a lecture without disturbing one's digestive processes, or solve a problem without appreciable effect upon one's respiration. It is even possible that

tion in which "any strong emotional state whatever is upon us," or "the fever fit is on us": *Principles*, 1890, II., p. 563.

²³ W. B. Cannon, *Bodily Changes in Pain, Hunger, Fear and Rage*, 1915, p. 269.

two or more determining tendencies should be active at the same time and divide the organism between them. But the major emotions illustrate in an exaggerated form the distinguishing feature of the determining tendency, namely its selection of its own auxiliary and constituent activities.

If instincts be interpreted as determining tendencies, and if this be the mark of teleology, how are we to account for the difference between human behavior and the behavior of animals such as birds and insects whose rich instinctive endowment is proverbial? This question proves the importance of distinguishing between a *concatenation* and a *subordination* of responses. In the typical animal instinct a series or concatenation of responses is innately determined, owing to the fact that the successful completion of each component response in turn furnishes the stimulus for the next, the series culminating in a result that is useful to the organism. This is sometimes spoken of as a chain-reflex; but the term is misleading because it suggests that the component responses are pure reflexes, whereas the reflexive character lies rather in their sequence. The component responses themselves are tentative and intelligent. The segments of the nest-building operation, for example, such as the movements through space, and the selection, grasping and carrying of materials, are performed more or less experimentally and adapted to local conditions. The purposiveness of the behavior lies not in the appropriateness of the several phases to the end-result, but in the persistence and resourcefulness exhibited in each phase regarded by itself. The successive responses are not subordinated to the end-result as their purpose. The completed nest, in other words, is not anticipated. It is this which distinguishes the bird from a human house-builder. In the case of the latter the domestic complex is guiding the action throughout. Everything which the human agent does from the first consultation with his architect is in some measure qualified by this meaning and selected on this account. As a result there is not merely variability within each component, but variability of components. The human builder has subordinated his auxiliary acts to his determining tendency to a greater depth; and in order that this should be possible, he must be capable of a much more complicated far-flung play of meaning.

Let us now turn to certain salient characteristics of human behavior viewed as interested or teleological, for the purpose of verifying and amplifying the conception already outlined.

The central contention in William James's epoch-making *Principles of Psychology* is that selection, interest or purpose is the essential and distinguishing feature of mind. "Consciousness is at all

times primarily a selective agency.'²⁸ Our senses themselves are organs of selection. Attention, perception, thought, taste, and the moral will are all modes of choice by which a man's personality and his world are finally individuated and stabilized. In one of his early essays, an essay that has been too little read, James distinguishes between real teleology in which the agent asserts his own end, and "hypothetical" teleology, or the case in which an external observer finding the result of an action to be useful imputes them to the agent as an end:

We can describe the latter only in teleological terms, hypothetically, or else by the addition of a supposed contemplating mind which measures what it sees going on by its private teleological standard, and judges it intelligent. But consciousness itself is not merely intelligent in this sense. It is *intelligent intelligence*. It seems to supply both the means and the standard by which they are measured. It not only *serves* a final purpose, but *brings* a final purpose—posits, declares it.²⁹

No one would now be disposed to dispute the essential soundness of this position. The human individual does not merely do things that are useful as judged by an external observer, but by its own activity adopts and seeks that result in relation to which its deeds are useful. And as James has so persuasively shown, the individual's experience is not dictated to him by external events, so that his mind merely echoes what goes on around him; but his experience is always in some sense what he makes it, what he is himself disposed to look for. But granting this, let us inquire whether we must therefore follow James in his next step, when he says:

It seems hopelessly impossible to formulate anything of this sort in non-mental terms, and this is why I must still contend that the phenomenon of subjective "interest," as soon as the animal consciously realizes the latter, appears upon the scene as an absolutely new factor, which we can only suppose to be latent thitherto in the physical environment by crediting the physical atoms, *etc.*, each with a consciousness of its own, approving or condemning its motions.³⁰

In other words must we adopt a dualistic sundering of mind and body in order to provide for the individual's assertion of his interests against the world about him? Does "physical" mean "passive," "secondary," "compliant"? Not unless one wishes it to. If

²⁸ Vol. I., p. 139. The best statement (too long to quote) is to be found in Vol. I., pp. 289-90. Cf. also I., pp. 8, 11, 402, 583-84, 594; II., pp. 558-59, 584. In the account in I., pp. 583-84, of voluntary association James speaks of "some general interest which for the time has seized upon the mind"; and gives an admirable account of pressure exerted by an obstructed response.

²⁹ From "Spencer's Definition of Mind as Correspondence," *Jour. of Specul. Philos.*, 1878. This essay is now reprinted in a volume entitled *Collected Essays and Reviews*, 1920, and the passage quoted appears on p. 64.

³⁰ *Ibid.*, pp. 64-65.

one wishes to divide the individual into two parts and say that the part in which the environment is agent and the individual reagent is body, and that the part in which the individual is agent and the environment reagent is mind, one is entitled to do so, merely as a matter of terminology. But to go further and to identify the physical organism wholly with the first, leaving the second to be provided for by some alien and incommensurable factor, is certainly not warranted by what we know about the physical organism. In proportion as the organism is unified and functions as a whole its behavior is incapable of being translated into simple reactions correlated severally with external events. The observer with his eye on any given set of external conditions finds that he can not predict the organism's behavior. Its behavior is "spontaneous" or internally conditioned. The most recent developments in physiology as well as in psychology and psychiatry have emphasized the extent to which the organism is integrated; the extent, in other words, to which any particular deed is to be accounted for in terms of the state of the organism itself rather than in terms of the incidence of an external stimulus. The better the organism is understood, the more does it assume just those characters which James insists upon as the prerogatives of mind. Thus in proportion as an organism is an individual its movements are governed by its own internal organization. Through these movements the organism not only acts on the environment, but introduces, terminates and varies those relations which enable the environment to act on *it*, and so determines even its own experiences and fortunes.

In further confirmation and amplification of our conception of purpose let us test it by the application of two ideas which will be generally accepted as contained in or associated with the traditional view of human conduct. These two ideas are: (1) the subordination of means to ends; (2) determination by the future.

1. *Subordination of means to ends.* Purpose is supposed to have two levels; or two factors of which one rules and the other serves. Just this duality and subordination seems to be provided in the relation of the determining tendency and the auxiliary response. This duality and subordination is especially striking in the case of the learning process, as this is studied experimentally.²¹ The organism is first put into a condition of hunger, or fear, or desire. This state then acts both as the exciting cause of the trial activities and as the arbiter that determines which one among them shall be deemed successful. An organization which is exerting itself under the influence

²¹ The writer has applied the present conception to, or, rather *derived it from*, the learning process in an article entitled "Docility and Purpose," *Psychol. Rev.*, 1918, p. 25.

of hunger will cease to exert itself only upon the performance of an act by which hunger is satisfied, that is, an act by which the food-taking response is enabled to complete itself. But what is true of the learning process is characteristic of developed behavior generally. Man, at least, is normally in the condition of one learning. That is to say, he is proceeding more or less tentatively, instigated by a determining tendency and finding a way that shall suit it. Through this conception the relation of end to means obtains an interpretation which distinguishes it, without isolating it, from the cognate relations of whole to part and of cause to effect.

2. *Determination by the future.* That a reference to the future as in some sense governing the act, is an essential feature of the traditional conception of purpose appears from the commonest terms of the teleological vocabulary, such as "for the sake of," "in order to," "with a view to," "in fear of," "in hope of," "lest," etc. It is evident that no account of human conduct which fails to set apart some special feature as the connotation of these expressions will, either in or out of scientific laboratories, seem to cover the facts. It is not sufficient to conceive the organism as making random efforts instigated by a determining tendency; nor is it sufficient that these efforts should cease when one of these efforts "succeeds." For there is as yet no act of which it can be said that it is done *with a view to* or *for the sake of* a future act.³² "Random," "hit-or-miss" action is essentially unguided action, which so far as its own immediate determination is concerned is as disposed to miss as to hit. Philosophical opinion in the past has usually vacillated

³² In an article entitled "Instinct and Purpose," *Psychol. Rev.*, 1920, Vol. 27, p. 227, Dr. E. C. Tolman says, speaking of a cat's efforts to get out of a cage, "The mere fact that on each single trial it hits about *until* it gets out, seems to me to be sufficient to characterize its activity as purposive. The cat hits about *in order to* get out, *for the sake of* getting out . . .," etc. While the article as a whole is an admirable statement of a view that I hold to be fundamentally sound both in method and in doctrine, I can not believe that the author is correct in this claim. What the exponents of purposiveness are looking for is an act of which it can be said that its occurrence is due to its promise or forecast. No act even though it be aroused by a determining tendency can be of the sort required unless it has meaning, that is, arouses anticipatory reactions to its sequel; and unless it is *preferred* because of such anticipation. Such anticipations are ordinarily the result of experience. But when an act is called "random" it is implied that it is of the nature of a pure reflex, that is unguided by experience. Dr. Tolman makes the important point that random activities of the sort aroused in connection with a determining tendency "vary within a class" which persists as a whole, and so are in type determined in advance. But even so we do not get the means selected because of its future or implicit relation to the end until the factor of meaning becomes effective. I believe that Dr. Tolman's account of thought is also unsatisfactory in so far as he fails here to regard "thought-of acts" as projected or uncompleted acts.

between two impossible positions. According to one opinion the purposive act is governed by an ideal form, or "final cause." But such a cause can not lie upon the plane of existence at all, and can not belong to the future of any particular act. It ends by becoming a static interpretation of the act, colored by illicit associations of futurity. According to the other opinion the purposive act is governed by the antecedently existing idea of a future result. But this explanation goes to pieces on the rock of dualism. A writer like Hobhouse, whose predilections are empirical and naturalistic, circles closely by the solution here proposed, but nevertheless ends with the more or less inscrutable paradox that in the case of purpose, "the doing is determined by what is done."³³

The solution would seem to lie in the action of present dispositions which are correlated with future contingencies. A calendar of engagements filled out for the next month exists and acts in the present. Nevertheless it is correlated serially and progressively with the future. Similarly the responses organized and serially adjusted so as to be executed in sequence exist now among the determining conditions of present events. Nevertheless they are functionally correlated with a sequence of events in the historical future—in their own future. A series of dated anticipatory responses is thus a projection of the future upon the present spatial field, and provides a means by which the contingent future may be translated into the physically existent present.

Let us now sum up our conception of purposive or interested action, as a basis for discussing the very intimate, confusing, and compromising relations which it sustains with reason or intellect.³⁴ A *determining tendency*³⁵ is a general response-system, tentatively ad-

³³ *Development and Purpose*, 1913, p. 320. Cf. the statement on p. 319: "Generically then a purpose may be defined as a cause conditioned in its operation by its own tendency. . . . Not the result as an event which may happen tomorrow, next year, perhaps never, but its own movement towards the result, the conational movement that it initiates and sustains, is integral and essential to its being." But until the mechanism of tendency is indicated, such a statement is little more than a restatement of the problem.

³⁴ In an article to be entitled "The Independent Variability of Purpose and Belief," which will appear in a later number of this JOURNAL.

³⁵ Dr. Tolman (*op. cit.*, 222) prefers to use the expression "determining adjustment." I use the term tendency which suggests expenditure of energy, rather than adjustment which suggests a sluicing or distributing of energies otherwise provided, because I wish to regard the determining tendency as including whatever may be necessary to initiate effort. This will doubtless involve originating stimuli; but I should not like to use an expression that suggested that the determining set plays a waiting game. Otherwise Dr. Tolman's is the best account I know of the agency which I have here in mind.

I find much to applaud in an article by L. L. Thurston, entitled "The

vancing towards completion, or tentatively renewing itself.³⁶ Interested or purposive action is tentative action adopted because the anticipatory responses which it partially arouses coincide with the unfulfilled or implicit phase of such a determining tendency.

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REVIEWS AND ABSTRACTS OF LITERATURE

Le Néo-Réalisme. RENÉ KREMER. Louvain: Institut de Philosophie. Paris: Félix Alcan. 1920. Pp. x + 310.

American neo-realists have every reason to be gratified with this European appreciation of their campaign and doctrine. Dr. Kremer has read everything, or nearly everything, that is of any value for throwing light upon his subject. His success in finding his material has been remarkable and his industry in mastering it quite extraordinary. The University of Louvain contained much that escaped destruction, and Professor F. C. S. Schiller placed his own library at Dr. Kremer's service.

Dr. Kremer notices that realism in one form or another has been gaining recognition in Great Britain, France, Germany and Austria, but he regards American neo-realism as the most explicit and most original. This chapter of American philosophy is, he says, almost unknown in Europe, and he has made it his task to describe it, with a minimum of criticism, to readers of French. The account seems substantially correct and very accurate. The movement had to be studied largely in a confusion of articles, most of them polemical in purpose if not in tone, and the author's patience and clear-sighted appreciation deserve all praise.

This is not to say, however, that any one of the leading neo-realists will be perfectly satisfied. No outsider is likely to render the doctrines of such a crusade to the complete satisfaction of the crucifixion. "Anticipatory Aspect of Consciousness" (this JOURNAL, 1919, Vol. XVI., pp. 561-569). I believe that this writer makes the mistake of defining behavior in terms of consciousness instead of consciousness in terms of behavior. But he makes skilful use of the serial arrangement of the response and the function of the "unfinished act." His account of intelligence in terms of the degree of remoteness of "consciousness" (trial and error?) from the overt act, and his application of this view to instinct (563) are admirable. Although I did not read this article until I had formulated my own views, I am glad to find in it at least a partial corroboration of them.

³⁶ In other words a determining tendency may be progressive or recurrent. In this appears to lie the difference between *desire* and *enjoyment*. But this most important question must be omitted here.

saders. It seems to me, however, that each of the six ought to be satisfied, and I am sure that they will take great pleasure in this effort of an old realist of Belgium to understand the new realists of America.

There is no occasion to repeat for American readers Dr. Kremer's exposition. His chapters have the following titles: *The Realistic Evolution of American Philosophy*, *The Critique of Idealism*, *Realism and Pragmatism*, *The Programme of the New School*, *Realistic Epistemology and its Proofs*, *The Problem of Truth and Error*, *The Theory of Values*, *The Originality of Neo-Realism*. But the appreciation and criticism at the end deserve attention.

Dr. Kremer is struck by the fact that the writers whose work neo-realists claim to continue are not those usually classed among the realists. Hume, Avenarius and Mach seem to be the patrons most openly recognized. Among writers in German, Husserl and Meinong, and in England Bertrand Russell, Nunn, Alexander and Moore had more or less influence.

The realists of the older school are glad to welcome the collaboration of the American group, with certain reservations. Indeed the R. P. Garrigou-Lagrange, O.P., has drawn upon some of the arguments of Professor McGilvary in his *Dieu, son existence et sa nature*. But there are seven ways in which, according to Dr. Kremer, neo-realism might with advantage be modified.

1. The neo-realists are too much inclined to form an isolated clan. Their expositions would gain in elasticity and influence if the phalanx formation were abandoned.

2. One good result of returning to the methods of individual independence would be the passing of the curious terminology which is a difficulty for uninitiated readers. With more moderation in their statements there would be less to explain, and, as unsympathetic readers are likely to think, to retract.

3. Their psychological analysis must recognize the subject and its reactions, as well as the field of objects.

4. The faith in science should not be quite so naïve; it would be a gain for empiricism if systematized opinions were not so inevitably baptized as facts.

5. There is a conflict between empiricism and rationalism. Now and then rationalism tries in vain to absorb empiricism. Reasonable philosophy requires both elements properly adjusted.

6. The neo-realists in their opposition to metaphysical dualism leave no place for spiritual substance. Descartes did, indeed, make too radical a separation, but both elements unite to form the actual human being.

7. And finally, if realism is to live, it must not leave out what idealism properly included, the appreciation of personality. There is no call to absorb the finite in the Absolute, the evil in the good, but above finite spirits and defeated wills must be recognized the Infinite Spirit, the source and end of all things. Hume, Avenarius and Mach, Plato, Aristotle, St. Augustine and St. Thomas must not be forgotten.

This summary reads crudely enough beside Dr. Kremer's sincere and graceful sentences, but it may serve to suggest the points of affinity and divergence between the old and the new doctrine. There are suggestions that Dr. Kremer will publish a study of contemporary realism in Great Britain, and when that work appears, very interesting comparisons will be possible, as well as further conclusions.

The present work is an important one for introducing American philosophy to European readers of French. Dr. Kremer is well aware that neo-realism is not the whole of recent philosophy in America, but his European public may not realize it. It is to be hoped that he will continue his studies in our philosophy, and tell his readers about that large and vigorous current in which the chief effort, perhaps, is to safeguard empiricism against the rationalistic appetite.

It is not unnatural that Dr. Kremer should apprehend American pragmatism too much, under the suggestion of the American realists. And it is not surprising that he does not distinguish between the Cambridge and the Chicago product, inasmuch as relatively few Americans do so; but in a study of recent American philosophy of the progressive type, this distinction is of the first importance.

Dr. Kremer begins his study quite rightly with the critique of realism, and he recognizes that one characteristic of neo-realism is its spirit of scientific method. But the passing of idealism is a phenomenon that can not be explained by the success alone of any particular criticism; the success of the criticism is rather a symptom of the passing of something that idealism sought to guarantee. It will be greatly to our advantage when philosophers of the older disciplines take the trouble to see our philosophy and tell us their impressions. Dr. Kremer's report of the other phases of American criticism would be, I am sure, one that we should be glad to see offered to readers of his very beautiful language.

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Sinnesphysiologische-Untersuchungen. JULIUS PIKLER, Leipzig: Barth. 1917. Pp. viii + 515.

The title of Professor Pikler's book is misleading. Sensory physiology it is not, nor are many of the investigations experimental. It is not clear from the text, but one surmises that the few empirical observations were, for the most part, made by the author himself without corroboration by other observers, since there is only an occasional reference to a few voluntary subjects.

In the preface the author states that he has called his investigation sensory physiological because his aim is physiological rather than psychological; namely, the determination of objective processes underlying consciousness, rather than a description of conscious states. True, there is no introspection, but the nearest approach to physiology is the constantly occurring phrase "adaptation of the organism."

Professor Pikler's criticisms are aimed chiefly at what seems to him a mechanistic interpretation of consciousness. He has observed, as have also most beginners of psychology, that there is not a one-to-one correspondence between the stimulus and the response. Instead of describing a reaction as conditioned by both the stimulation and the state of the organism as modified by experience, he attempts to show that we have many perceptions which are independent of sensory stimulation.

The general plan is to discuss the various theories explanatory of a particular perceptual phenomenon, to show the weakness of all such theories built upon a sensory basis and then to conclude that he has verified his theory of adaptation. In the last analysis adaptation seems to mean for him mental adaptation. Attempts to discourage strictly scientific and rigidly empirical explanations are unfortunately not infrequent. One is reminded of Dr. J. S. Haldane's attack in *The New Philosophy* upon a physical and chemical explanation of life. After tearing down the scientific understructure Dr. Haldane says, "To the question why living organisms behave as they do, the only answer is that it is a part of the nature of reality that they do so." Indeed, if it were not for the critical examination of contemporary psychology by Professor Pikler one would have, at times, the feeling that one were back in the age of mental philosophy.

As a good example of the author's mental set might be cited his conclusion regarding stroboscopic effects similar to those examined by Wertheimer. Professor Pikler has described some interesting variations of Wertheimer's work and has, in the reviewer's opinion, quite rightly rejected Wertheimer's explanation. His own conclusions, however, are as follows: "There are sensations which have

their origin neither in an adequate sensory stimulation, nor in any other sensory stimulation, nor in experience, but rather in an *a priori*, adaptive, self-preservation tendency which is entirely independent of experience."

Again, in the first chapter Strumpell's theory, that we go to sleep because of the absence of sensory stimulation and awaken because of the presence of the same, is vigorously attacked. Strumpell's patient was anesthetic except in one ear and one eye. When the eye was closed and the ear stopped the patient fell asleep. But, remarks Professor Pikler, what causes him to awaken? No sensations can penetrate the barriers of this almost complete anesthesia. His conjecture is that excess energy, the desire for psychic activity, is so great that the patient moves spontaneously. He opens his eyes, begins to remember, think, *etc.* There is a drive (*trieb*) toward or interest in recuperation which underlies sleep and an interest causes us to awaken.

The other chapters of the book are concerned with the negative judgment, the perception of visual depth, kinematographic perceptions, optical illusions and Ranschburg's phenomenon of retroactive inhibition.

The author apologizes for bringing heterogeneous problems together in one volume. In justification of his plan, however, it may be stated that the problems are held together by a certain similarity of theoretical treatment. The critical historical parts of the book are of more value than the very questionable positive contributions. Throughout, there is that sombre coloring of faculty psychology which so inhibits the enthusiasm of the present-day experimental psychologist. The only American author mentioned is Professor Dewey and his name appears in a quotation.

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JOURNALS AND NEW BOOKS

MIND, July, 1920. *The Importance of the Sensory Attribute of Order* (pp. 257-277): H. J. WATT.—The ordinal attribute of sensory stuff is the foundation of spatial arrangement, and forms a basis for the solution of the problems of recognition, memory, and cognition. *Motives in the Light of Recent Discussion* (pp. 277-294): WM. McDUGALL.—Contends for the position of McDougall's *Social Psychology* that instinctive tendencies are the mainsprings of activity, against the doctrine of Woodworth in his *Dynamic Psychology* and of Graham Wallas and Hocking. *Some Recent Theories of Consciousness* (pp. 294-313): A. K. ROGERS.—Critical examina-

tion of the theories of Alexander, Woodbridge, James and McGilvary. *A New Theory of Sleep and Dreams* (pp. 313-323): EUGENIO RIGNANO.—Dreams are the result of an "affective functional rest not accompanied by a corresponding intellectual functional rest." *Critical Notices*. Bernard Bosanquet, *Implications and Linear Inference*: C. D. BROAD. N. O. Lossky, *The Intuitive Basis of Knowledge*: C. D. BROAD. Sigmund Freud, *Totem and Taboo: Resemblances between the Psychic Lives of Savages and Neurotics*: WM. McDOUGALL. Henri Bergson: *L'Energie Spirituelle, Essais et Conférences*: F. C. S. SCHILLER. *New Books*. George Galloway: *The Idea of Immortality*: H. RASHDALL. J. T. Merz, *A Fragment on the Human Mind*: A. E. TAYLOR. A. Wohlgenuth, *Pleasure-Unpleasure*: JAMES DREVER. W. S. Hunter, *General Psychology*: JAMES DREVER. R. C. Lodge, *An Introduction to Modern Logic*: B. BOSANQUET. G. W. F. Hegel, *The Philosophy of Fine Art*: B. BOSANQUET. H. J. Watt, *The Foundations of Music*. W. Powell, *The Infinite Attribute of God*: G. G. E. Mercer, *Why do We Die?*: G. G. W. H. B. Stoddart, *Mind and its Disorders*: W. L. M. R. S. Carroll, *The Mastery of Nervousness Based upon Self Re-education*: W. L. M. G. Gentile, *Sommario di Pedagogia come Scienza Filosofica*; G. Gentile, *La Riforma della Dialettica Hegeliana*; L. Vivante, *Principii di Etica*; A. Shannon, *Morning Knowledge*; J. A. Smith, *The Philosophy of Giovanni Gentile*: B. BOSANQUET. A. Aliotta, *La guerra eterna e il dramma dell'esistenza*: A. E. T. *Philosophical Periodicals*. *Notes*: Mind Association.

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NOTES AND NEWS

* THÉODORE FLOURNOY

ON November 5, 1920, occurred the death of Théodore Flournoy, the eminent psychologist and philosopher of Geneva. For Ameri-

cans his name will always be coupled with that of William James; the friendship, based on a kinship of temperament and of philosophical views, that sprang up between the two men, and that gave us Flournoy's admirable sketch of James's thought, was a precious example of the bonds that may exist between searchers after truth. There was, in fact, a remarkable resemblance between the careers of the Swiss and the American. Like James, Flournoy took his doctorate in medicine, and like him he felt the call to a wider field of thought. After studying, at Geneva and in Germany, the natural sciences and philosophy, and after working under Wundt at Leipzig, he returned in 1885 to his native city to lecture on the history and philosophy of the sciences. His thought at this time was based largely on a thorough study of Kant; and he endeavored to formulate a position which would allow of untrammelled devotion to scientific truth while preserving the essentials of the Protestant faith to which he was sincerely attached. Like James, he preserved these two interests to the very end, and was the doughty opponent of what he called the "monistic and deterministic naturalism of 'modern thought.'" Gifted with a hatred of dogma and of closed systems, and ever ready to admit new facts and new ideas to his hospitable mind, he yet preserved rigorously the distinction between individual opinion and scientific truth. In 1890 he turned his attention definitely to psychology, and in his *Métaphysique et Psychologie* he proclaimed in ringing tones the independence of the latter discipline as a natural and experimental science. The next year he was appointed to a newly founded chair of psychology, which he insisted be in the Faculty of Sciences.

Fluornoy is most widely known as editor of the *Archives de Psychologie*, where much of his most original contributions appeared. Again like James, who wrote him, "Your work as a philosopher will be more irreplaceable than what results you might get in the laboratory out of the same number of hours," he was drawn more to a consideration of the import of the new science than to the actual routine of experimentation. Hypnotism, dual personality, and other abnormal phenomena interested him; in many respects he was a precursor of the psychanalysts, and published several volumes of researches into the dim realm of the subconscious. The psychology of religion, in uniting his two chief interests, proved a field of inexhaustible possibilities.

When pragmatism was launched it found in Flournoy a sympathetic and discerning friend, if not a blind disciple. Through lecture, article, and book, he took every opportunity to make known to the French-speaking world the philosophy of his friend. He had already done much to pave the way for it, and he found very con-

genial its voluntarism, its pluralism, above all its sense of freedom and of close contact with the common everyday realities of life. He stands as the successor of Sécérétan and Renouvier in upholding what the French call *la philosophie de la liberté*, and he advances beyond them in founding his theories upon the solid base of scientific fact.

He remained ever faithful to the ideal he expressed in the closing words of *Métaphysique et Psychologie: Dans la culture des sciences et la pratique des vertus tant privées que sociales, un meme zèle; en matière de croyances métaphysiques, une complète liberté individuelle; en tout et partout, la tolérance et le support mutuels ces formes élémentaires, mais non les plus faciles, de la charité.*

J. H. RANDALL, JR.

COLUMBIA UNIVERSITY.

THE present rate of exchange makes it easy to subscribe to French periodicals. Those who wish to subscribe to the *Revue de Métaphysique et de Morale* can do so by sending \$1.20 to Professor James H. Woods, Prescott Hall, Cambridge (38), Mass. Those interested are reminded that the cost of a subscription can be divided among as many as care to join together.

At the annual meeting of 1918 the American Philosophical Association passed the following resolution:

The American Philosophical Association expresses its appreciation of the effort of the *Revue de Métaphysique et de Morale* to promote the knowledge of American Philosophy in France, and desires to perpetuate and deepen the intimacy between France and the United States.

A BIBLIOGRAPHY of recent French philosophy has been compiled by Professor Edmond Renouir, of Paris, at the suggestion of Professor Riley, of Vassar College, the cost of the preparation being paid by the Vassar College Library. A copy of this bibliography has been sent, through the Institute of International Education, to each member of the American Philosophical Association.

THE JOURNAL OF PHILOSOPHY

INSTRUMENTAL INSTRUMENTALISM

MUCH has been written and said of late of the moral depravity of an instrumentalist philosophy. Of what value is a philosophy that is so engrossed in the means, that it gives no thought to the ends? One can not intelligently discuss the instruments of human progress unless one first knows its goals. Instrumentalism when carried to its logical conclusion finds itself involved in a *reductio ad absurdum*, for not everything can be instrumental; something must be final. And what is more, even the instrumental goods of life may have their additional intrinsic values. Instrumentalism is at best merely a partial truth. Such, in general, are the charges which are being brought against instrumentalism.

If these charges are valid, instrumentalism would, it seems to me, be obviously condemned. And if they but indicate the weaknesses in the theory, it would seem to be weak indeed. But I think they serve less to throw light on the difficulties of the instrumentalist position, than to throw light on its difficulties in making itself understood. One naturally becomes suspicious of philosophers who continually get themselves misunderstood. One infers that they do not know how to say what they mean, or that they do not mean what they say, or that they mean different things as occasion requires, or that they mean something radically unintelligible. To what extent the instrumentalists are guilty in these respects, I leave to the reader's own predilections to determine. For my part, I think the chief cause for the misunderstandings involved in the charges listed above is in the term "instrumentalism" itself; and I think if we could forget this "label," and study the writings which bear it directly in terms of their subject-matter, misunderstandings might be fewer. In these days of polemics, let a man but call himself an "instrumentalist," and that of itself is sufficient to start a controversy, regardless of whether either party to the controversy knows what the term means or not. Just because the term instrumentalism, like the terms realism and idealism, may mean most anything, it would seem worthwhile to attempt to define in their own terms the ideas which are concealed by the "ism." I am conscious that I am running the risk

of but adding at least one more meaning to the term, and of thus increasing the confusion. If that be the case, I hope that what follows will be allowed to stand or fall on its own account, whether it be instrumentalism or not. For my purpose is not to add to the controversies about the term instrumentalism; rather I wish to plead that it be discarded, since it appears to be more of an instrument of verbal warfare than of intellectual clarification.

Let me recall first that instrumentalism was originally a theory of judgment. As such it meant the thesis that judgments are instruments by which man enhances his control over his environment. Now a judgment may obviously be any number of other things, and consequently other valid definitions (if I may beg the question!) are possible. This definition claims to be in terms of what a judgment does, its function; and it may hence be called an instrumental definition. But that does not mean that this "instrumentalist" theory of judgment fails to take into account the ends which judgment serves. For the *ends* of judgment are precisely upon what the definition is based. It would be less misleading to call such a theory functional or teleological, rather than instrumental. But more is intended by the instrumentalists. For it must be noted that the thesis that judgments are instrumental is itself a judgment and must consequently be interpreted instrumentally. Most readers of instrumentalist logic assume that to say "judgments are instrumental," means simply that every judgment and every theory or system of judgments is an instrument of control. And the obvious reply is to produce a judgment which serves no such purpose. (Esthetic judgments serve effectively in this capacity!) But to criticize an instrumentalist in this way, assumes that he does not take himself seriously; that he fails to apply his theory to his own judgment. If we ask, accordingly, what is the instrumentalist interpretation of the instrumentalist theory, I think the only possible answer is, that it is a criterion for the evaluation of judgments. It defines a *good* judgment, rather than *any* judgment. The judgment, "All judgments are instrumental," means, if interpreted instrumentally, "All judgments *should be* instrumental." That is to say, a good judgment is one which "gets you somewhere" (intellectually speaking), and a bad judgment is one which is either a "blank cartridge" or a positive obstruction. (I purposely used the terms good and bad, rather than true and false; they have greater instrumental value!) It ought not to be necessary to add that it is not the business of a philosophy of judgment to offer a criterion of good and bad "places to get to." If a judgment gets you *anywhere* it is a good judgment, whether or not it is good for you to get there.

The knowledge of where to get and where not to get is a matter for the science of ethics, and should not be allowed to confuse the theory of judgment.

But a virulent anti-instrumentalist will no doubt congratulate me on so readily giving away the case. If instrumentalists mean nothing more than this, their position is not only true and obvious, but merely a celebration of the commonplace, all the more vicious because it is couched in more pretentious terms. And if, he will say, the instrumentalist would take himself "merely" instrumentally, no one would quarrel with him. However that may be, I am interested here in trying to show that this is not merely an apologetic for the instrumentalist, a statement of what he should have said, but that it really represents his own meaning. For when the instrumentalist develops his theory of judgment into a general philosophy of life, we find this to be the dominating note. It is an insistence on the evaluation of ideas by their consequences. In Dewey's writings in particular this central theme is developed in a number of ways. It is developed as a theory of education and of ethics. It is developed, though fragmentarily, as a philosophy of history. It is developed as a social and political philosophy. But in all these various forms the method is that of approaching ideas (theories and philosophies) from their *function* in human experience. They are considered each in relation to its own environment and evaluated in terms of it. The significance of the method is that it is fundamentally teleological. It is not a philosophy of nature, but of intelligence; and its subject-matter, whatever it may be, is always evaluated in terms of human art, *i.e.*, teleologically. Instrumentalism, in brief, is a method of evaluating ideas by placing them in their teleological relationships.

Now why such a procedure should be called instrumentalism is not clear to me. The term was carried over from the more limited field of logical theory where it was useful, to the broader field of philosophy where it has become confusing. What instrumentalism really amounts to is not a harping on the instrumental values of life to the neglect of the intrinsic values; it is not a philosophy which tries to get along without aims and ends. It is simply the insistence on the importance of teleological relationships. No one more than the instrumentalist realizes the impossibility of divorcing means and end. Means and end are correlatives, and it is impossible to emphasize the one and not the other without getting into fruitless abstractions. And I don't think one would accuse the instrumentalist of committing this blunder, were it not for the name. "Teleologist" would be a more descriptive term, were not that term rendered useless by its ambiguities. Dewey has more recently used the term "experimen-

talist" almost exclusively, and it does away with the false implications of "instrumentalist." An experimentalist may be defined as a philosopher who regards ideas as working hypotheses and in that sense "instrumental"; or as one who evaluates ideas by the purposes they serve. The two definitions are correlative.

It seems to me that the real objection to the experimentalist philosophy as we have it, is not that it emphasizes means to the exclusion of ends (for it does not), but that it is merely formal. It insists on the importance of the means-end relationship for philosophy and life, but it has little or nothing to say about means and ends in the concrete. An inquirer who comes to the experimentalist with the question, "What are the ends of human life?" will be disappointed, and he goes away grumbling, "The man is too much concerned with means to know anything about ends." But he would have been equally disappointed had he asked: "What are the means of human life?" The philosopher knows little or nothing about either ends or means in the concrete; he only knows that if you would be intelligent you must keep means and end in mind. In view of other theories of intelligence this insistence may be justified, but it seems to me that the protests indicated above are symptoms of a growing impatience with philosophy for contenting itself with the connotation of "intelligence" and leaving the denotation to tradition, common sense, and occasionally to science. Of course, the philosopher can reply that any philosophy *must* be formal; the philosopher is a lover of wisdom, not a wise man. God alone knows the ends and means of human life. But the experimentalist can ill afford to make such an apology, for who condemned German philosophy for its formalism!

An experimentalist philosophy seems to me bound to admit its belief in its own instrumental value. If it should be final, if it does not stimulate experimental habits of life, it too stands condemned by its own criterion. But if the philosophy of intelligence turn out to be instrumental in the spread of intelligence, then it stands justified, though not only it but all philosophy pass out of existence. Instrumentalism is honor bound to prove its value as an instrument of control. If intelligence gains more of a foothold in human life because a philosophy of "creative intelligence" is being preached, the instrumentalist is instrumentally validated.

Whether or not instrumentalism will thus vindicate itself, it is as yet impossible to tell. I think there can be no doubt that the intellectual stimulation which it has occasioned during the last decade or two has meant a net gain in intelligence. But it is to be doubted whether that gain is due so much to the preaching of instrumental-

ism as a philosophy as to the fresh analysis and the clarification which instrumentalists have given to certain specific problems. Instrumentalism achieved its greatest successes as an instrument of analysis. But to-day there seems to be a general tendency to abandon the task of analysis and to enter upon a campaign of preaching and propaganda. But preaching, as the instrumentalist repeatedly insists, is usually a very ineffective moral and intellectual instrument. Consequently the pulpit ill becomes the instrumentalist. In the realm of education a similar tendency is to be noticed. No one will deny that the philosophy of James and Dewey has made for more intelligence in education. But that result has been achieved by making specific reforms in education, and not by teaching students an instrumentalist philosophy. But to-day there seems to be a tendency to make this philosophy itself the subject-matter of education. It is very much to be doubted whether intelligence is to be achieved by teaching "the philosophy of intelligence." In short, preaching or teaching the "moral obligation to be intelligent" is of little value if it lead merely to an enthusiastic defense of the ethics of intelligence, instead of to the habit of disciplined thinking.

It would indeed be a curious bit of irony if some future German philosopher should write a book on American philosophy and politics, devoting it to the thesis that American philosophers and educators succeeded in making the idea of experimental science and intelligence so formal, yet so powerful, that American politicians were able to supply the "concrete filling-in" *ad libitum*. I write this as a warning, not as a prophecy. If instrumentalism should be guilty of such charges it would be self-condemned. But the philosophy is still in its infancy, and it would be rash to try to predict its future. It is, however, just as rash to try to evaluate instrumentalism, for its outcome is still unknown. To sum up, the point I wish to emphasize about instrumentalism is the same point which Solon made regarding happiness, and which instrumentalism made regarding judgments, *viz.*, "it behooves us to mark well the end" (Herodotus, Bk. I, ch. 32).

HERBERT W. SCHNEIDER.

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THE OXFORD CONGRESS OF PHILOSOPHY¹

FROM Friday, September twenty-fourth, to Monday, September twenty-seventh, inclusive, Oxford University entertained between two and three hundred philosophers and psychologists representing the British Psychological Society, the Aristotelian Society, the Mind Association, the Oxford University Philosophical Society, the Société Française de Philosophie, and the American Philosophical Association. Besides the three delegates from America, President Meiklejohn and Professor Warbeke attended the sessions of the Congress, and there were also visitors from Italy, Poland, Japan and India. The meetings of the Congress were held in the building of the Examination Schools. The delegates were assigned to students' rooms in the various colleges, and had their meals in the Hall of New College.

At the inaugural session of the Congress, Professor Bergson delivered an address on "*Prévision et la Nouveauté.*" The speaker endeavored to prove that the common belief in the existence of future possibilities is erroneous, at least in the fields of mind and life. After events happen we analyze them and form concepts of how they might have happened. These products of retrospective analysis are then made the basis for a belief in the present existence of future possibilities. Man should rid his mind of this illusory conception of a future predetermined in the form of possibilities, and realize the full and absolute creativeness of life.

On Saturday morning Professor A. N. Whitehead presided over a symposium on "Relativity." Professors Eddington, Broad and Lindemann defended the doctrine of Einstein; while Mr. W. D. Ross endeavored to show that the theory was not necessitated by the experimental facts, and that its defenders presupposed that very absoluteness of motion which it was the object of the theory to deny. Professor Whitehead argued that the relativity under discussion was a relativity to the body rather than to the mind, and that the subject could be cleared up only by a recognition of the reality and importance of the triadic relations involved in all perception. Professor Lindemann defended the curious theory that beliefs should be evaluated on the basis of the extent to which they contributed to the survival of those who held them. He maintained that the advantage of the Einstein theory consisted not in its greater truth but in its greater simplicity and convenience.

The two sessions of Saturday afternoon were devoted to psychology and were of unusual interest. The first symposium was con-

¹ This report is based largely on memory, and the writer asks pardon for any errors of omission or commission which it may contain.

cerned with the question "Is Thinking merely the Action of Language Mechanisms?" The participants were Miss E. M. Smith, and Messrs. Bartlett, Pear, Thomson and Robinson. Professor John B. Watson was unable to be present, but the entire discussion centered about his behavioristic theory that all thought is reducible to explicit or implicit speech. The speakers seemed to be in general agreement that a behavioristic metaphysics which denied the existence of mental images and other purely psychic elements of the thought process was so untenable as hardly to be taken seriously; but that the behavioristic methodology of Professor Watson in accordance with which thinking and other forms of mental activity are to be investigated in terms of the bodily expressions with which they are uniformly correlated, was a permanently valuable addition to psychology.

The symposium on behaviorism was followed by one on "The Disorders of Symbolic Thinking due to Lesions of the Brain" in which the leaders were Dr. Henry Head and Dr. R. Mourgue. The theories advanced were based upon study during the war of a great variety of cerebral injuries. Both participants seemed to some extent to agree with Bergson that the trouble with patients suffering from disorders of an aphasic type was not due to actual destruction of memories, but rather to the destruction of the mechanism by which those memories are given the kind of connection and articulation characteristic of normal thinking.

The topic of the evening session was "Present Tendencies in American Philosophy." After presenting the greetings of the American Philosophical Association, the present writer referred briefly to the philosophical situation in America prior to the war and to the work done by teachers of philosophy in organizing and conducting courses on the Issues of the War for the young recruits at the universities. He then proceeded to explain the origin and purposes of the American New Realists, the arguments by which they defended their position, and the kinship of neo-realism in its epistemology to medieval Thomism, and in its ethics to the secular idealism of modern France. Professor J. E. Boodin, of Carleton College, followed with an exposition of the philosophy of pragmatism. He dwelt upon the many and diverse influences of William James, and stressed the essential identity of James's teaching with that of the great British empiricists. After touching briefly upon what seemed to him to be the shortcomings of pragmatism, he closed with a tribute to the work of John Dewey. Idealism in American philosophy was explained and defended by Professor R. F. A. Hoernlé, formerly of Harvard and now of the University of Durham. Professor Hoernlé dwelt mainly upon the work and teaching of

Josiah Royce. He spoke feelingly of the extent to which Royce had devoted himself not merely to the promulgation of his own doctrine but to friendly cooperative work in various fields of science and to the encouragement of independent thinking on the part of his pupils. He concluded with a cordial reference to his former colleague, Professor Hocking of Harvard, as worthily representing the tradition of Royce's idealism in America to-day. Lord Haldane, who presided, closed the session with an expression of sincere interest in American philosophy as a whole, and paid special tribute to the work of Professor Creighton.

On Sunday morning there was a service for the Congress at Christ Church with a sermon by the Bishop of Ripon. In the afternoon Mr. Arthur Balfour presided over a symposium on "The Relation of Religion and Ethics." The participants were Professor Chevalier of the University of Grenoble, Professor J. A. Smith and Principal Jacks of Oxford, Baron Von Hügel, M. Belot, Inspecteur Général de l'Instruction Publique, and Professors Gilson, Vermeil, Bouglé and M. Lenoir. Most of the speakers defended the thesis that ethics is indissolubly related to religion. Professor Chevalier's argument was of peculiar force and originality, as was also that of M. Belot. Mr. Balfour, who closed the discussion, took the position that while the validity of ethical principles is clearly independent of any religious belief, yet the presence of the latter supplies motives for ethical living which nothing else could supply and which for most men are all but indispensable.

At the Sunday evening session there was a symposium on "Mind and Medium in Art." Professor Wildon Carr presided, and Mr. C. Marriott opened with a novel and forceful defense of the position that a Fine Art, no less than an Industrial Art or Craft, derives its canons of esthetic perfection from the specific nature of the medium employed. This position was criticized by the chairman and by Messrs. Watt, Bullough, and Valentine. Mr. Bullough's remarks were of especial interest.

On Monday morning at the first session, M. Xavier Léon, President of the Société Française de Philosophie presented a significant and very sympathetic analysis of Fichte's anti-imperialism. The second of the morning sessions was devoted to a symposium on "The Problem of Nationality." The participants were Professors Halévy and Marcel Mauss, of the University of Paris, Professor Théodore Ruysen, of the University of Bordeaux, M. Johannet, Professor Gilbert Murray and Sir Frederic Pollock. Most of the speakers expressed themselves strongly in favor of nationalism as a healthy and permanent attitude. But the dangers attendant upon its abuse were recognized, and emphasis was put upon the impossibility of

settling the European problems of the boundaries of states by the criterion of nationality alone or indeed by any one principle. Professor Gilbert Murray while admitting the values of the nationalistic or patriotic sentiment seemed less inclined than the other speakers to regard it as permanent.

At the first session of the afternoon "The Meaning of Meaning" was discussed by Dr. Schiller and Professor Joachim. The paper of Mr. Russell, who was not able to be present, was ably defended by one of his colleagues. Mr. Russell had argued for the position that meaning could be defined and interpreted as a special case of the association of ideas. Professor Joachim devoted himself mainly to an attack upon the premises and conclusions of Mr. Russell's argument. Dr. Schiller, whose doctrine of meaning had been criticized by Mr. Russell, defended and amplified his claim that a man's meaning could be understood only in terms of the personality and specific purposes of the man himself.

At the second session the question debated was "Is the Platonic ΕΙΔΟΣ presupposed in the analysis of Reality?" The leaders of the discussion were Messrs. Joad and Lindsay, Miss Stebbing and Professor Hoernlé. Dean Inge presided.

The Congress closed with a banquet in the Hall of New College. The Warden, Dr. Spooner, presided and there were speeches by Mr. Balfour, Lord Haldane, M. Bergson, M. Xavier Léon and the writer. The visiting delegates took the occasion to express their thanks to Oxford University for its generous hospitality and to Professor Wildon Carr for his invaluable services as secretary and organizer of the Congress.

W. P. MONTAGUE.

COLUMBIA UNIVERSITY.

ABSTRACTS OF THE PAPERS BY THE AMERICAN DELEGATES

American Neo-Realism: W. P. MONTAGUE.

Professor Montague presented the greetings of the president and members of the American Philosophical Association and on behalf of that Association expressed his thanks to the secretary of the Congress, Professor H. Wildon Carr, and to Oxford University for the hospitality extended to the delegates from America. American politicians might disagree as to the desirability of a League of Nations, but American scholars were unanimous in their desire for closer cooperation with the scholars of Europe. The speaker referred briefly to the embarrassments of American idealists, pragmatists and realists prior to America's entering the war, and mentioned the work done by Dean Woodbridge of Columbia and

Professor R. B. Perry of Harvard in organizing courses of instruction on the issues of the war for college men and other recruits.

The speaker then told of the origin of the Neo-Realist movement in a meeting at Columbia in 1910 of six professors of philosophy, two each from Princeton, Columbia and Harvard. At that meeting plans were made for cooperative work which should have for its purpose the promulgation of a form of realist philosophy in which Reid's insistence upon the independent existence of the particular objects of perception was combined with the Platonic insight as to the independent subsistence of the essences and universals which are the objects of conception.

The doctrines accepted by the six realists were more or less similar to those already expressed by Meinong in Austria, by Russell, Alexander, Moore and Nunn in England, and by James, Woodbridge and McGilvary in America. The general justification of this effort to establish a realistic attitude toward all objects of cognition, was based on the need (1) to restore philosophy to that congruity with common sense which it had possessed in ancient and medieval times; (2) to make available for philosophic speculation the great conclusions of modern science; and (3) to free the religious and spiritualistic conception of reality from its useless and embarrassing alliance with the Berkeleyan and Kantian forms of so-called idealism.

The four principal arguments in support of the radical objectivism of the New Realists were stated by Professor Montague somewhat as follows:

I. The acknowledged fact that an object or content is directly experienced does not in itself justify the idealist's claim that such object or content is thereby disqualified from continuing to exist unchanged during the intervals when it is not experienced. And the attempts of idealists to make their position appear axiomatic, and to beg the question at issue by always describing objects of consciousness as (inseparable) states of consciousness are illegitimate.

II. The acknowledged fact (or truism) that we can not ascertain by direct observation the nature of unobserved objects does not in itself justify the idealist's claim that we can gain no knowledge of objects during the times when they are not observed. From the behavior of objects when experienced we can get sufficient data for reliable inferences as to the extent to which they depend upon the relation of being experienced.

III. The admitted fact that our consciousness of objects is the *ratio cognoscendi* for their existence and character in no way justifies the idealist's claim that consciousness is therefore the *ratio essendi* of its objects.

IV. The behavior of the particular objects of perceptual experience (or at least of veridical perceptual experience) justifies the neo-realist in inferring their existence independent of the minds that know them (*contra* pragmatism); and when this capacity for self-existence apart from individual minds is once granted, the assumption of a transcendental or over-individual mind as a ground for the invariancy of their relations and the regularity of their recurrence in our experience becomes arbitrary and unwarranted (*contra* absolute idealism). Similar considerations justify a similar conclusion as to the capacity for subsisting independently of any mind, finite or absolute, of the abstract universals and propositional relations of conceptual experience (or at least of such of them as are veridical).

By these and similar lines of argument the neo-realists seek to establish their connection that cognition is an "external relation," and that as such it is selective rather than constitutive of the objects cognized.

Professor Montague then proceeded to describe some of the work done by the New Realists in the furtherance of their doctrine.

"The Programme and Platform of Six Realists," published as an article in *THE JOURNAL OF PHILOSOPHY* in 1910, and the book called *The New Realism* (Macmillan, 1912), were the results of more or less cooperative endeavor. These were followed by articles and books published separately by various members of the group. Among these might be mentioned *The Concept of Consciousness* and the *Freudian Wish* by E. B. Holt; *Present Philosophical Tendencies*, by R. B. Perry; *A First Course in Metaphysics*, by Walter Marvin; *The New Rationalism* by E. G. Spaulding; and an article in *The Philosophical Review*, of January, 1914, on "Unreal Subsistence and Consciousness," by the speaker.

Professor Montague confessed to being somewhat at variance with the more recent writings of his colleagues in that the latter had for the most part agreed in regarding the epistemological doctrine of neo-realism as more or less implicative of mechanism, pluralism and behaviorism. As in the later work of Mr. Bertrand Russell, so also in the books of Holt and Spaulding, there was a drift towards positivism and nominalism and an abandonment of the Platonism which had characterized the earlier phase of the movement.

Having stated the principal arguments for the New Realism and given a description of the later developments and divergencies of the school, Professor Montague then presented his conception of the two tasks in philosophy which he regarded as of most importance at the present time, and for the accomplishment of which he believed

the neo-realistic epistemology offered a fruitful method. These tasks were (1) the reconciliation of the vitalistic doctrine of such writers as M. Bergson and Professor McDougal with the mechanistic doctrines and methods of most modern scientists; (2) the emancipation of ethical values and sanctions from the dogmas or hypotheses of religion.

With regard to the former of these tasks he thought it a good omen that one of the first works of scholarship to come from the University of Louvain after the war should be a very complete and sympathetic analysis of *Le Néo-Réalisme américain* by Father René Kremer, C. SS.R. This tribute from a Catholic and a Thomist should be a reminder that a realistic epistemology by no means implies a naturalistic cosmology, but serves rather as a means of restoring to their original clarity the great philosophic issues which have so long been obscured and distorted by Berkeleyan and Kantian subjectivism. The emancipation of philosophy from the sophistries of *epistemological* idealism would make it possible to attempt an intelligent reconciliation of the tradition of *ontological* idealism with the claims of modern science.

With regard to the second of the two tasks to the achievement of which philosophy should be devoted, Professor Montague expressed the hope that the good feeling between France and America, renewed by their recent participation as allies in war, might serve to awaken American scholars to the true significance of the secularization of the French educational system. The Hellenic faith in the eternal validity of moral ideals as independent of, though not opposed to, all metaphysical theories, whether of naturalism or supernaturalism, was a faith that had been proclaimed anew and with convincing eloquence by great philosophers of England such as Huxley and Mill. And this conception of a morality of ideals as distinguished from a morality of commands had been adopted by France and made incarnate in the education of her children and in the heroism of her army.

In conclusion Professor Montague wished to repeat that the New Realism defends not only the existence of physical bodies independent of consciousness, but also the validity of moral ideals independent of the vicissitudes of nature or politics. And at a time like the present, when theological authority is losing its hold upon so many minds, it is of supreme importance that, in addition to their religious training, the youth of America, like the youth of France, should be given a faith in *real* idealism—the indestructible and secular faith in a sanctionless morality.

Pragmatism: J. E. BOODIN.

There are several reasons why pragmatism should be of interest to British and French philosophers, and especially to British philosophers. In the first place, the pragmatic movement, and that means primarily William James, broke the spell which German thought had cast over America, and made America look to Britain and France rather than to Germany for its inspiration. It transplanted the great British empirical tradition to American soil at a time when it had lost its hold on Britain itself. William James is a lineal descendant of Locke and J. S. Mill. In the second place, pragmatism is of interest because it is the matrix out of which the more recent movements have grown. The new idealism, of which Josiah Royce is the most outstanding representative, owes no small part of its freshness to the influence of James; Royce called himself an absolute pragmatist. Most of the leaders of the New Realism in America were pupils of William James. Behaviorism owes inspiration not only to the pragmatic emphasis on conduct as the central fact of psychology, but also to James's analysis of such psychological concepts as activity and consciousness. In the third place pragmatism is of interest because it is to-day a live movement. The most outstanding figure in American philosophy to-day is John Dewey. Professor Dewey is perhaps the only American philosopher who can be said to have a school in the compact sense. And the Chicago school numbers among its members such vigorous thinkers as Professors Tufts, A. W. Moore and Mead and is making new converts, one of the ablest of these being Professor Bode. The contributors to the volume *Creative Intelligence* show something of the strength of the Dewey type of leadership. But there are a number of individual thinkers who stand outside the Dewey movement. And there is probably no American thinker of any school who does not gratefully own his debt to William James. In the fourth place, pragmatism is having an important practical influence on American civilization. James himself, outside of his influence on psychology and philosophy, had a large and enduring influence on the religious thought of America. Dewey is the most important interpreter of the ideals of education in America, and more recently is making his influence felt in political philosophy. Justice Holmes and Roscoe Pound, Dean of the Harvard Law School, have carried the pragmatic method into the realm of jurisprudence and are making an impression on the technical tradition, while Laski shows the influence of James in his critical analysis of the question of the authority of the state. These are only instances of the extension of the influence of pragmatism in America, the tendency of

which has been a wholesome regard for the demands of human experience.

But, you say, pragmatism is nothing but a muddle and conveys no definite meaning. It is true that pragmatism has been a complex movement. It has been an atmosphere rather than a definite philosophy. In the earlier stages at any rate it was a "thick" movement. This "thickness" was due to two causes. One was the use of a metamorphical language which gave rise to a large progeny of misunderstandings. Instance "the cash value of truth," "truth is the expedient in the way of thinking," etc. James himself was deeply pained by these misunderstandings (some of which seemed to him wilful) during his last years and strove heroically to remove them. The other cause of the "thickness" of pragmatism was the number of *isms* which men like James included in their philosophy and which all came to be associated with pragmatism. James at various times was a pluralist, a tychist (believer in chance), energist (interaction of mind and body), ethical idealist, panpsychist, neutralist (doctrine of pure experience), mystic, etc. It was too much for one word to carry, even though you paid it extra.

But as you look through the smoke of misunderstanding and confusion there are some definite contributions which can be laid to the credit of pragmatism. First, pragmatism sharpened our consciousness of the meaning of propositions. The question of C. S. Peirce: What practical difference would it make if one rather than another of alternative hypotheses were true? has made us more conscious of our procedure and enabled us to get rid of dead lumber with which every civilization gets overburdened. In the second place, pragmatism has contributed a more adequate psychology of the thought process. It has emphasized the teleological, active, selective character of the process. It has showed that thinking is not carried on *in vacuo*, but is for some end in which the whole of human nature, emotional and volitional as well as intellectual, counts. Thinking arises as a result of a problem or doubt when the old habits break down and when we must cast about among alternatives for a way of meeting the situation. This process terminates normally in selection and action, which are merely two ways of stating the termination of the process. James's chapters on "Conception" and "Reasoning" in his *Principles of Psychology* have become classic and Dewey's form of statement is scarcely less important. In the third place, pragmatism has brought into clearer consciousness the significance of scientific method. Professor Boodin has elsewhere defined pragmatism "as scientific method conscious of its procedure." Pragmatism has brought out the trial and error aspect of the search for truth. It emphasizes the tentative and

empirical character of the process. It speaks of truths in the plural—truths as working hypotheses in a manifold world. Truth in the singular is at best an ideal limit in our human procedure. In the fourth place, pragmatism aims at furnishing a test of truth. The statement of this test has been confused enough, but Professor Boodin believes that a definition can be made which will answer all requirements. We may define the test in Lockian terms by saying that an hypothesis is true when it terminates in the intended facts. But we can also state it in terms of conduct. An hypothesis is true when it leads to successful procedure in the intended direction. In metaphysical terms it would read: We know the specified reality through the differences it makes to our purposive conduct. This would hold in any universe of discourse. Economy or simplicity is implied in successful procedure. Finally, pragmatism has emphasized the constructive or creative character of truth. We may say that it has over-emphasized this aspect. But in some cases, such as psychotherapy and social relations, the belief in the truth of a proposition may be a factor in making it come true. This does not hold of an eclipse. But in every case truth is a creative addition to our world and not a mere matter of copying.

Professor Boodin's contribution to the pragmatic movement may be said to be twofold. He has tried (*Truth and Reality*, Macmillan, 1911) to clarify the concept of truth and to build it out in neglected directions. He has also tried (*A Realistic Universe*, Macmillan, 1915) to construct a system of metaphysics on the basis of the pragmatic method. He calls his own attitude "pragmatic realism." His method is objective and realistic as contrasted with the subjective and skeptical tendencies of the movement. The pragmatic movement may be said to have split up into a right and a left wing.

Idealism in American Philosophy: R. F. A. HOERNLÉ.

For the student of idealism in present-day American philosophy, the most prominent figure is Royce, and the most important problem that of the influence of Royce on contemporary thought.

Royce is the typical representative of an age in which the development of natural science, and of philosophies based on science, came into conflict with much in the traditional creeds of the Christian churches. For him personally, the fundamental problem throughout all his thinking was to justify religion as the dominant fact in life and thought. In order to reconcile religion and science, he abandons most of the mythology of the creeds, and much of the ritual of the churches. But he "saves" religion by interpreting it as the central source of metaphysical insight, as the mode of experience in which we respond to the nature of reality as a whole, and

find it deserving of worship. Idealism, in Royce's hands, is first and last a philosophy of religion. But Royce saw clearly that religion can not be saved in abstraction from, still less in opposition to, life's other interests. Hence, in arriving at a synthesis, his philosophical interests ranged from mathematical logic and biology at one end to moral and social theory at the other. Many students who had little sympathy with Royce's emphasis on, or interpretation of religion, were deeply influenced by these other sides of his thought.

Yet, towards the end of his life, Royce often was despondent about his influence as a teacher. His life's work seemed to be bearing no fruit. No school of younger idealists seemed to have grown up about him, carrying on and developing his teaching. Superficially, this discouraging estimate was not without justification. Realists were challenging his metaphysical theory on technical grounds as too Berkeleyan and subjective. Pragmatists were denouncing his Absolute as encouraging "moral holidays," instead of preaching the gospel of the progressive mastery of man over nature through knowledge. His books were not being expounded on all sides by devoted disciples. His most novel and distinctive theories seemed not to be caught up into the currents of philosophical debate. Thus, for example, his argument in *The Religious Aspect of Philosophy*, that error implies an absolute truth for an absolute spirit, much as it impressed William James at the time of its first formulation, soon came to be almost ignored. Few thinkers adopted, from *The World and the Individual*, his terminology of the "external" and "internal" meaning of ideas; fewer still thought his use of the theory of the mathematical infinite a very happy one. His analysis of morality in terms of "loyalty," in *The Philosophy of Loyalty*; his theory of religion as the spiritual life of the "beloved community," in *The Problem of Christianity*; his use of Peirce's concept of "interpretation," in the same book—all evoked little response. Royce might well think of himself as one preaching to deaf ears.

But the truth was that, like James, Royce exercised his most powerful influence in stimulating his pupils to think for themselves and to stand intellectually on their own legs. He did not train disciples. He inspired independent thinkers. This may be readily appreciated by a brief survey of contemporary work which has grown, no doubt with the help of many other influences, yet fundamentally from seeds sown by Royce. His interest in mathematical logic is carried on by C. I. Lewis's *Survey of Symbolic Logic*, and by H. M. Sheffer's work at Harvard. The work of his seminary on scientific methods, and the speculative problems raised by the natural sciences, has left its mark on L. J. Henderson's *The Order of*

Nature. The influence of his metaphysical theories is felt in widely different directions in Mary Whiton Calkins's *Personalistic Conception of Nature*, and, on its dialectical side, in W. H. Sheldon's *Strife of Systems*. His emphasis on religion as a fundamental factor in human experience and civilization reappears not only in G. P. Adams's *Idealism and the Modern Age*, but above all in W. E. Hocking's *The Meaning of God in Human Experience* and *The Remaking of Human Nature*. But Hocking's appointment, as Royce's successor, to the Alford professorship is fitting in an even deeper sense. The tide is at the moment running against idealism, and this has prevented the power and freshness of Hocking's work from being as fully and widely appreciated as they deserve to be. And his own best is yet to come. But all who know even a little of his unpublished studies in the philosophy of the State, of History, and of Art, look to him to be the true heir of Royce and the leader of the idealism of the future.

REVIEWS AND ABSTRACTS OF LITERATURE

The Reign of Religion in Contemporary Philosophy. S. RADHAKRISHNAN. London and New York: Macmillan Co. 1920. Pp. x + 463.

Professor Radhakrishnan has produced a notable book. Any criticism of the main trend of current Western philosophy, undertaken from the standpoint of Indian thought with its characteristic basis and traditions, could not fail to be noteworthy; but this volume has a special significance. Consider for a moment its title—*The Reign of Religion in Philosophy*. Can such dominance be properly ascribed to religion? Influence—whether waning or increasing is another question—may be conceded; but to what degree this is identical with that direction and control which deserve the name "reign" appears a highly debatable issue. Such a title, again, inevitably arouses certain too familiar reflections; we anticipate criticism, skepticism, even hostility to religious conceptions as such. But on both these points Radhakrishnan takes up an attitude that is refreshingly definite. Approaching his very wide but extremely pertinent subject as an absolutist, he maintains two theses: (1) "of pluralistic theism and monistic idealism, the latter is the more reasonable"; systems marked by "religious neutrality end in absolute idealism. The current pluralistic systems are the outcome of the interference of religious prejudice with the genuine spirit of speculation";¹ and (2)

¹ But the "realistic reaction," particularly the realism of Russell, is an exception. Cf. pp. 331, 336.

“monistic idealism is the more reasonable as affording to the spiritual being of man full satisfaction, moral as well as intellectual” (p. vii); thus his criticism is at once positive and comprehensive. Of these two contentions, the first obviously concerns philosophy alone; but his second principle includes a much wider and not so purely philosophic an issue in its claim that only absolutism can satisfy religious needs. For him, as for the poet, “the world glows with God”; if religion can at all be regarded as transcended, this is only in full spiritual satisfaction; it is not negated, not abandoned and wholly discarded; and this, I think, is a somewhat new characteristic in recent absolutistic thought.

In proffering a few remarks on a work which, whatever other judgment may be passed upon it, must be recognized as an extremely able, clear and individual discussion of fundamentals, it may be useful to summarize them as expressing agreement with the author's absolutistic criticism of current pluralisms, together with the impression that this absolutism itself needs somewhat clearer expression in order to guard against its becoming another mere variant of pluralism.

The method adopted by the author is the old and powerful one, in the right hands, of “exposing, through criticism, the absolutistic implications” of the systems (among others) of Ward, Bergson, James, Eucken and Russell; and these names are sufficient to show that he has overlooked little that demands notice in recent thought. But there is here neither lack of appreciation nor the slightest imputation of intellectual dishonesty. On the contrary “recent tendencies in philosophy” (Chap. II.) are traced to an inevitable reaction from that abstract absolutism which, as perhaps James most vehemently argued, derided or at least neglected the demands of average humanity.

Such a protest against mere abstractionism, this recognition of aspects of the human spirit other than the purely intellectual, was at once natural and praiseworthy; but it has had two unhappy consequences. In the first place it selected a radically false criterion in its choice of intuitive belief as the ultimate standard to be at all costs maintained; and Radhakrishnan regards pluralism as nothing more than an unconscious attempt to provide philosophical bases for the instincts of a democratic humanism. “Distrust of intellect is the characteristic note of recent philosophy. Instead of reason-philosophers we have faith-philosophers” (p. 42). They are deeply concerned about the intellectual difficulties and the spiritual trials of that typically modern and pathetically puzzled person, Mr. Britling; if he protests that he can not understand our theories, then they must be false; if they do not pacify his troubled soul their

defectiveness is patent. The further result is equally inevitable; all the "isms" thus proffered for the solace of Mr. Britling can not escape being radically faulty, because their own presuppositions imply that very absolutism which they repudiate. But this innate absolutism is essentially concrete; it "does not dismiss the world of reality as illusory. It is wrong to assume that it cancels the existence of the Many for the sake of the One. All that absolutism says is that the One is the life and soul of the world. This is not to say that the world of life and change is unreal."²

Thus Radhakrishnan has raised anew, and from what is in many ways a novel standpoint, a number of old and much debated issues. The absolutist heavy artillery has reopened with a well-directed barrage, and not without having learned some valuable lessons from the tactics of its opponents. For whatever be the defects of recent pluralism, its advocates have been remarkably successful in rousing wide interest and in infusing reality into discussion. From this both sides alike must benefit; no longer will argument proceed in an academic void; and one outstanding merit of the volume under consideration is the fresh clearness with which the points at issue are presented.

Doubtless a fitting reply will duly be made to its contentions by those who have not yet "outsoared the shadow of our night." I shall content myself therefore with noting those features of absolutism which seem to me most to demand attention from both pluralists and the author himself.

Few of those to whom the subject is perhaps already too familiar can afford to omit his opening chapter on "Science, Religion and Philosophy." There is much truth in "philosophy has become a list of beliefs held by faith and not a reasoned system." But at the same time "religious facts have more significance for philosophy than any other." "Philosophy is not a theory of theory, but a theory of life, at home in life and not in false abstractions. Instead of trying to make philosophy religious, we should make religion philosophical. True religion and true philosophy will agree, for there is no secret hostility between the different sides of human nature."³ At first one is tempted to believe that yet another pluralist is writing; surely we have here a note not always markedly resonant in classic absolutism.

The consideration of the *ad hoc* system of Leibnitz may be passed over briefly. His inclusion seems due to a double reason; first for historic continuity and completeness and secondly because he is a

² Pp. 48, 49. (Slightly modified.) As for Mr. Britling, see the end of section III., p. 42.

³ Pp. 12, 19, 20, 22.

rationalistic pluralist, and therefore a patent exception to that tradition of inherent connection between absolutism and reason on which James was so fond of insisting. Radhakrishnan maintains that an "examination of Leibnitz's theory of perception will enforce absolutism" (p. 61.) In any case the artificialities of the entire system, in spite of the intellectual power that went to its construction, render it a feeble basis for modern pluralism; and to Leibnitz Radhakrishnan affiliates the work of James Ward, thus arriving at the moderns. Ward's position, he points out, has a twofold aspect; he upholds spirit as against naturalism, but as against absolutism, *many* spirits; thus he re-edits the *Monadology* in an attempt "show that by itself pluralism is inadequate and must give place to a theism" (p. 92). His panpsychism, which has always appeared to me the weakest feature in his system, is very forcibly criticized. "We can not follow Ward when he says that in this world we have all persons and no things . . . that matter is mind" (p. 99). For as Radhakrishnan contends further, it is possible to accept Nature, even a completely mechanical Nature, without any necessary contradiction of a spiritual Absolute. Here the absolutist position, as against that taken up by Ward and other panpsychists, is excellently expressed; only the sense that it would be unfair to the author prevents the citation of sentence after sentence which go to the root of the matter. I may refer, however, to the somewhat analogous position held, from the absolutist standpoint itself, by Dr. McTaggart, for whom the ultimate differentiations of the Absolute are finite individuals; it would be interesting to know Radhakrishnan's opinion of this interpretation of Hegelian idealism. It constitutes a crucial test for absolutism, for its acceptance involves serious risks of subjectivism. But "spiritual monism need not be of the panpsychist type" (p. 108); and further, Ward's treatment of ethical freedom implies a fundamental misinterpretation of the function of mechanism in Nature.

The consideration of Ward is remarkably complete without being overdone; besides the points just noted, the implications of his theory are traced in their bearing on life and matter, creation and evolution, the finitude and the personality of God; the final conclusion being that Ward's fear that absolutism "would open the floodgates to mechanism, determinism and other inhumanisms" is completely unfounded. "In escaping from subjective idealism to which pluralism leads, Ward has affirmed absolutism." "Even the most brilliant philosopher can not make pluralism philosophically sound."⁴

⁴ Pp. 134, 120, 147.

The three succeeding chapters are devoted to Bergson, which leads me to venture the opinion that Radhakrishnan, like many others, has taken this remarkable writer rather too seriously. We find, it is true, the severe condemnation of his system as "a cheap and facile monism indifferent to the difficulties of rational philosophy"; the abstract vagueness of "duration" is insisted upon;⁵ nevertheless I think that the most damaging criticism of Bergson can be found in his own work itself. Like that of James, it is a mosaic rather than a true unity; an *ad hoc* construction rather than an organic growth; but with the element of self-contradiction much more accentuated, as any careful analysis is sufficient to show.

I very much doubt, therefore, the truth of the remark that "if freed from its inconsistencies it must end in absolutism"; these "inconsistencies" seem to me so fundamental and deep seated that their removal would involve the destruction of the entire system. Radhakrishnan, however, takes his principal results separately, and here as elsewhere traces their absolutistic implications. As in Ward's case, he finds the theories of perception seriously defective; "the problem is slurred over and not solved" (p. 156); but he does not mention the direct contradiction between Bergson's position in *Time and Free Will* and that in *Matter and Memory*. The careless vagueness in the use of his central terms is another matter for criticism; e.g. he "is not very careful in his use of the word life. Life and consciousness are sometimes used synonymously. Life sometimes refers to vital phenomena" (p. 175). Here we have one of the best aphorisms in the volume: "Matter to Bergson is congealed mind, while to Hegel it is concealed mind" (p. 178). This is excellent, and incidentally it reveals the author's command of his English.

The account of the place which intuition has always held in classical absolutism, and the contrast with Bergson's opposition of intuition to intellect, are equally good. For absolutism, there is no such dichotomy as Bergson asserts; "intuition does not mean a break with ordinary thought, but a completion of the labour of intellect, a comprehension which sees things as a whole."⁶ This is but one instance out of many where the gross misrepresentations of absolutism, so common in its recent critics, are clearly pointed out and corrected.⁷ In this respect, perhaps the strongest card in Bergson's suit is "*tout est donné*"; here again misconception is involved; the

⁵ P. 163; note "rational," not "rationalistic."

⁶ P. 189. Cf. also pp. 196 and 207, and Dr. Bosanquet's remark that this view can not be read into Bergson. (*Principle of Individuality*, p. 168, n.)

⁷ "The absolutism which comes in for severe rebuke at the hands of pluralist critics is a fiction of their own imagination and not a theory held by its recognized exponents" (p. 407).

universe is not a "twice told tale; there is a progressive realization of the absolute in the world" (p. 186). But, as I have said already, perhaps Radhakrishnan takes Bergson, as a philosopher, too seriously; for he concludes "Bergson is more a prophet than a philosopher, a seer than a dialectician. The vision requires a system of absolute idealism" (p. 221).

The sarcasm with which the chapter on "Pragmatism" begins will probably be considered as no more than is deserved by the methods adopted by some of its advocates. On its more serious side, Radhakrishnan points out that while Kant was a pioneer pragmatist, still this did not induce him to "break up the unity of mind. His pure and practical reason are both expressions of reason" (p. 228), a feature often overlooked by those who rely on the supposed insufficiency of the Kantian pure reason. Throughout a fairly long chapter Radhakrishnan succeeds in presenting some novel aspects of this much debated subject. He is as severe on Kant as on James, while he gives full expression to such concessions as absolutism need make, and traces accurately the factors in recent controversy which almost necessitated the new movement. The principal defect of the chapter is the oversight of those expressions of absolutist thinkers on the nature of truth, uttered long before the pragmatists began to emphasize its practical aspects, whose due recognition would have deprived their contentions in advance of much of their force.⁸ On the other hand, the insistence on the inevitable subjectivity of pragmatism is very forcible. "True pragmatism inclines towards absolutism, which has long ago given up the idea of the Absolute as a static entity existing alongside the actual" (p. 251).

It is in his pluralism that William James is most distinctively to be found, and *A Pluralistic Universe* is the subject of another long chapter. Radhakrishnan is quite right, I think, in locating "the greatest defect of James's philosophy in its unsystematic nature" (p. 255). But all his work seems to contain evidence of hasty reading (to say the least) of absolutist literature, of which Radhakrishnan gives several instances; his account of the relation between the Absolute and finite individuals; of the monistic "all" as opposed to, instead of complementing, the pluralistic "each"; of the Absolute as static rather than dynamic; passage after passage is shown to be defective either in its bases or its implications. And in spite of the indebtedness which James expresses to Bergson, they "have different views of intellect. It is surprising that James does not realize that the adoption of Bergson's theory commits him to the conceptual method" (pp. 268-269).

⁸ Cf. my *Examination of James's Philosophy*, pp. 16-18.

As for the constructive side of James's work, does this, Radhakrishnan asks, really guarantee "freedom and novelty, a God who is of real help, and personal immortality?" He thinks not, after all; "such a God is too human for any religious purpose" (p. 285). And his vacillations on moral freedom, in conjunction with his abstract view-point, forced an unreal alternative between chance and fatalism, and so, but only as a *pis aller*, the selection of chance as more favorable to freedom. Finally, the theory of pure experience excludes any persistent soul; but on the other hand, if we fall back on the panpsychism of Fechner we drift into a "mother-sea of consciousness" which again is "incompatible with a radical pluralism" (p. 296). Certainly James was never himself anxious about his own reputation as a thinker, and therefore his fate need concern us still less; but it is impossible to resist the feeling that, while he "has secured a permanent place in the republic of great philosophers," it is no less a misfortune in the interests of philosophy itself, that "he was not very scrupulous about the logic of his position; he was at the mercy of the latest fad" (pp. 296, 297). We may indeed regard this as a tribute to his real power, since such irresponsibility would have proved the ruin of any weaker man.

The other recent critics of absolutism—Russell, Balfour, Howison, Schiller, Eucken—are all dealt with with equal thoroughness; but I should like to turn to Radhakrishnan's own exposition of monistic idealism.

Every such endeavor courts distinctive and grave dangers. To insist on the differentiations demanded by a really concrete absolutism means the risk of pluralism; if, in avoiding this, the thinker emphasizes the equally necessary transcendence, he may lose his particulars in abstraction; the underlying unity of these particulars, again, must be something other than themselves, without being external or artificial on the one hand, or on the other so merged with them as to become a pantheism, not to say a panpsychism. So far as the present volume is constructive (and its main purpose is critical) it stands all these tests excellently. Its chief failing, curiously enough, seems to me to be a tendency toward pluralism; but this may easily be more apparent than real, and will doubtless receive due consideration in Radhakrishnan's future constructive work. Or it may arise from his intense sympathy with religion, even as in its Western rather than its peculiarly Oriental phases. The highest religion, he maintains, is permeated by, and must if needs be fall back upon, absolutism;⁹ this again fosters and conserves religion as such, not any mere intellectualism nor even passive

⁹ "If philosophy takes into account facts of religious consciousness we will be led to the absolutist theory" (p. 283).

mysticism and absorption. As being in agreement with this attitude he cites, quite properly of course, both Hegel and Bradley; but he is himself much more definite, much less vague and distant; perhaps from temperament he seems less afraid of the reproach of wearing his heart on his sleeve. Thus we find in the final chapter alone:¹⁰ "The world glows with God. . . . A central spirit, an infinite and eternal spiritual energy, purposeful and intelligent. All things are real only as they exist in God." And thus, in view of the two dangers already alluded to—of pluralism on one side, and of panpsychism on the other—it is not surprising that an unconscious tendency towards the former seems to manifest itself.

But before dealing with this major difficulty I should like to discuss a few minor points.¹¹ The first concerns the use of the term "idea," which together with "ideal" is the source of more misunderstanding of Idealism than any other. "Ideal" is almost always construed in the moral or esthetic sense of a standard which ought to be, but never is, actual; while "idea" is interpreted wholly subjectively, instead of objectively as in accordance with both Platonic usage and Hegelian logic; and the few references which Radhakrishnan makes to "idea" seem to me to convey this erroneous subjective meaning. We have *e.g.* (p. 34), "the idealist doctrine that the world is an idea is a sham. How can the world be looked upon as a dream or imagination?" Then (p. 46), "Absolutism which makes mind the central reality," and p. 95, "The Absolute Idea, which is the sole reality" (in reference to Hegel). What seems lacking here is the principle that for Hegel the Absolute and the Absolute Idea are not wholly identical. He regarded neither mind (as such) nor the Absolute Idea as the ultimate reality. These are the logical—the thought—aspects of reality, which itself is something richer than they, being Spirit. The altogether erroneous impression that Hegel regards all reality as Thought or as Mind accounts, I think, for much of the repugnance felt towards it; and it would materially help forward the comprehension of absolutism if Radhakrishnan were to make this essential distinction clearer than he has done; as it is he appears to use mind and spirit as synonymous.¹²

¹⁰ In this Radhakrishnan develops the standpoint of Indian metaphysics as "the earliest form of speculative idealism in the world" (p. 451).

¹¹ Perhaps I may add here a contradiction which I feel sure, however, is purely superficial. We have (p. 254): "In philosophy we do not seek for faith and vision but for a reasoned explanation"; but p. 441: "Philosophy is neither purely conceptualist, not purely empiricist, but is intuitional."

¹² The distinction only, for the principle itself is fully recognized. *Cf.* p. 82: "Reality is a concrete spiritual whole"; also pp. 97, 101, 135, 139, 304, 352, 434; as to the distinction itself, I may refer to Dr. McTaggart's *Commentary*, sec. 294.

Nor do I feel satisfied with his exposition of Hegel's theory of being and becoming on p. 168. There we have, "being relates itself to non-being, and passes with it into the higher category of becoming." But Hegel did not pass from being to non-being; the transit is from being to nothing (or nought). This distinction may seem mere hair-splitting, but it is in reality fundamental. "Non-being" is the denial of "being"; while "nothing" is the acceptance of "being," but the denial of any "determination." Thus the former is a direct logical contradictory, which absolutely nullifies thought; while the second is the dialectic transition which is just as absolutely indispensable to thought.¹³

But these are after all only minor points; the final question is: Does Radhakrishnan succeed in his detailed exposition of the principle of the Absolute? I think that on the whole his treatment is excellent. The Absolute, in the first place, is concrete—"the highest concrete"—"which holds to the reality of both eternal and temporal, victory of the good and a battle with evil, consciousness of perfection, and a moral will." Secondly, his interpretation is but "the outlines of a scheme" (which still "appears to satisfy philosophic needs and impulses"),¹⁴ so that too much must not be expected from it. But I find it extremely difficult, after careful comparison, to distinguish his treatment of the relation between the Absolute, God, and the universe, from that which he quotes (and adversely criticizes) from Rashdall and, in a less degree, A. J. Balfour.¹⁵ These passages are too long to give, and each reader will form his own opinion; but on the questions of evil and imperfection, personality and creation, the parallel appears very close between Radhakrishnan's absolutism and that pluralism which in other writers he condemns; and, in the words of James, "the difference between monism and pluralism is the most pregnant in philosophy."

I will contrast a few brief sentences: "No pluralism can be consistent unless subordinated to a monism which will make God not a person . . . but an impersonal or suprapersonal spirit." Here then, quite definitely, God can not be a person.¹⁶ But as against this, we find "The Absolute breaks up its wholeness and develops the reality of self and not-self. The self is God . . . The personal God

¹³ Cf. again *Commentary*, sec. 16. Again, in saying that "Rashdall adopts the traditional argument of idealism" (p. 392), I think that Radhakrishnan means Berkeleyan Idealism. Pringle-Pattison, following Trendelenburg, similarly criticizes Hegel; but his illustration is obviously inapposite. *Hegelianism and Personality*, p. 99, note.

¹⁴ Pp. 440, 313, 411.

¹⁵ Pp. 392-395, 402-404.

¹⁶ P. 277; but cf. also p. 382.

is not the Absolute, but its highest manifestation"; while, on the other hand, "the Absolute constitutes the self of the whole world," without any "breaking up" whatever. "Breaks up," indeed, appears an unfortunate term wherewith to express the truth that "the universe is the Absolute dynamically viewed"; but I have no doubt that, in his future work, the author will clear up these obscurities, and present the Absolute as itself "the whole, the only individual, the sum of all perfection."¹⁷ I have dealt with his present volume at such length because in it Absolutism, after a comparatively long interval of silence and neglect, once more takes up the gage of conflict and offers itself as the surest guardian of man's highest artistic, moral and religious interests.

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JOURNALS AND NEW BOOKS

REVUE DE METAPHYSIQUE ET DE MORALE. Avril-Juin, 1920. *Conscience et fonction sociale* (pp. 127-150): G. BELOT. - The so-called economic and political problems of our day are fundamentally moral problems, and what is needed for their solution is a moral education which will adjust the demands of conscience to the actual circumstances of the present environment. *La valeur des Idées de A. Comte sur la chimie* (pp. 151-179): G. URBAIN. - A. Comte's view that the positive science of chemistry aims at the "pre-
 vision of reactions" seems to be in accord with modern developments of the principles of Mayer and Carnot. But Comte, leaping into a religious vein, was too enthusiastic over the prospect of unifying the science under a single principle, for there seem to be two sets of chemical data. In the one set, which embraces thermodynamically unstable compounds such as the organic compounds, "the reversibility of reactions is the exception, and this is the domain par excellence of atomistic doctrines"; in the other set, which embraces thermodynamically stable compounds, "the reversibility of reactions is the rule, and this is the domain par excellence of energetic doctrines." In spite of this dual character of its data, which prevents the formulation of some single first principle, chemistry can be just as rational and fruitful as any scientific positivist could wish. *L'antidogmatisme de Kant et de Fichte* (pp. 181-224): M. GUÉROULT. - Fichte's conception of "dogmatism" and the "idealism" which he substitutes for it correspond substantially with Kantian ideas on the same subjects. This is shown by the fundamental agreement be-

¹⁷ Pp. 444, 435, 445, 442.

tween the Kantian and Fichtean notions of liberty, the autonomy of the will, and the creative activity of the self. *Etudes Critiques. La Pensée italienne au XVI^e siècle et le courant libertin, par J.-Roger Charbonnel* (pp. 225-243): LÉON BLANCHET. — M. Blanchet finds this book worth criticizing, as he considers it the best work in French on the part played by the Italian Renaissance in the emancipation of thought from the scholastic system. The author has made some serious biographical errors in his account of Campanella, and he should have given more systematic development to three important themes: (1) the answers of these Italian thinkers to the problem of separating the realms of revelation and of science; (2) their relations to protestantism; and (3) their attitudes toward magic in connection with their pantheistic views of nature. *Questions Pratiques. Qu'est-ce qu'un député?* (pp. 245-260): FÉLIX PÉCAUT. — The present position of the deputy is ambiguous, for although there has been a steady tendency in modern parliamentary government toward releasing him from all mandates of his electors, the desire for reelection still operates as an effective limitation upon his freedom. Though it is difficult to see how this check can be diminished while the present system of democracy remains, it would seem desirable in the complex society of to-day to entrust legislation as far as possible to experts free to follow their own informed judgments. *Supplément. Livres Nouveaux.* Alfred Loisy, *De la discipline intellectuelle.* D. Parodi, *La philosophie contemporaine en France, essai de classification des doctrines. 81 chapitres sur l'esprit et les passions,* by the author of *Propos d'Alain.* Th. Flournoy, *Métaphysique et psychologie.* Gustave Geley, *De l'inconscient au conscient.* G. True, *Le retour à la scolastique.* E. M. Lémeray, *Le principe de relativité.* F. Soddy, *Le radium.* Bertrand Russell, *Introduction to mathematical philosophy.* A. N. Whitehead, *An enquiry concerning the principles of natural knowledge.* G. de Ruggiero, *Storia della filosofia.* E. Troilo, *Figure e studii di storia della filosofia.* Julius Piker, *Sinnesphysiologische Untersuchungen; Hypothesenfreie Theorie der Gegenfarben; Theorie der Konsonanz und Dissonanz.* Gorg Simmel, *Der Krieg und die geistigen Entscheidungen.* *Périodiques. Philosophical review*, 1919, Vol. XVIII., Nos. 3, 4, 5.

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NOTES AND NEWS

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY:

I want to thank Professor Lodge for his courteous consideration of my criticisms on his proposal to exclude elementary judgments from modern logic. Further discussion does not seem to me to be necessary, since he is now ready to include *all* real judgments. He says: "From the present standpoint, 'judgment' being understood as a human approximation to the one absolute judgment, *all* judgment, so far as we really *judge*, *i.e.*, so far as our thought conforms to the standards of identity, difference, and organization, is included" (this JOURNAL, XVIII, 2, pp. 45-46).

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THE annual meeting of the Western Division of the American Philosophical Association will be held this year at the University of Chicago on Friday and Saturday, March 25 and 26. Arrangements have been made for three discussional groups to meet concurrently during one of the two mornings or afternoons. These groups will be led by Professors Arthur O. Lovejoy, E. B. McGilvary and J. D. Stoops. Professor Lovejoy announces the following topic: "The Existence and Nature of the 'Psychical'—with Especial Reference to the Standpoint of Pragmatism." Professor McGilvary will discuss "The Bearing of the Theory of Relativity upon Metaphysics," and Professor Stoops has selected the question, "Are Volitions Independent of Instinct." As usual, members will have an opportunity to present papers—not exceeding twenty minutes in length—on any topics of their selection.

THE JOURNAL OF PHILOSOPHY

McDOUGALL'S SOCIAL PSYCHOLOGY IN THE LIGHT OF RECENT DISCUSSION

THE *Introduction to Social Psychology* of Professor William McDougall, which has recently reached its fourteenth edition,¹ is proving to be as important in the development of this new science as was the work of William James in the development of general psychology.

Before discussing Professor McDougall's principal conceptions in this book, it will be worth while to notice certain of his general psychological opinions that at least throw a side light upon the *Social Psychology*. He is a firm believer in the teleological nature of mental activity, and rejects mechanism and psycho-physical parallelism. In opposition to the introspectionist school, who define psychology as the "science of consciousness," he was among the first to define it as the "science of behavior."² His conception, however, is quite different from that of Professor John B. Watson's *Behavior*. Professor McDougall does not reject introspection, but refuses to confine himself to it, and believes in studying the human mind in its relation to the body, and to the physical and social environment. He believes in the soul as "an hypothesis which is indispensable to science at the present time."³ The soul is "a being that possesses, or is the sum of definite capacities for psychical activity and psychophysical interaction."⁴ In this interaction the soul produces sensations and meanings of every kind; to some extent it guides the direction of energy in the cells of the brain; memory

¹ London: Methuen & Co. 1919. Pp. xxiv + 459. The edition contains a new Preface and a third supplementary chapter, in which the author's main differences with Mr. Shand, Dr. Drever, and Professor Thorndike are stated. With the other two supplementary chapters, on "Theories of Action," and "The Sex Instinct," the present volume is nearly one third larger than the original edition of 1908. The student of this book should also consult the symposium on Instincts, published in Vol. III. of the *British Journal of Psychology*, and that on "Instincts and Emotion," in the *Proceedings of the Aristotelian Society*, 1914-15.

² In the *Primer of Physiological Psychology*, 1905.

³ *Body and Mind*, 1911, p. xiv.

⁴ *Idem*, p. 365.

and reasoning are due to its activity. His belief in some kind of teleological principle, guiding the brain processes of individuals, and operative in biological evolution, brings him into sympathy with Professor Bergson to some extent;⁵ but he does not accept the Bergsonian antithesis between instinct and intelligence. Among psychologists he has been influenced by William James, Professor G. F. Stout, and Professor James Ward.⁶ One only gets here and there a hint as to his metaphysical preferences. Physics explains facts in the terms of mechanical process; psychology, in terms of purposive or appetitive process. The antithesis between the two types of process is fundamental for science. The more plausible metaphysical view, he thinks, is to regard "mechanical process as reducible to the appetitive type," or, perhaps, as representing a degradation of the latter. In this connection he cites with high praise Professor Ward's *The Realm of Ends*.⁷ He also has remarked that perhaps all living things might be described as "expressions or embodiments of what we may vaguely name, with Schopenhauer, will, or with Bergson, the vital impulsion (*l'élan vital*), or, more simply, life."⁸ Each instinct would be an embodiment of this fundamental will-to-live. His metaphysical sympathies would appear to lie with some form of teleological idealism. In biology, one supposes that his thought is most in accord with vitalism, or with such views as that of Professor J. S. Haldane; but I recall no specific passages in his writings on which I can base an assertion.⁹

The conceptions of the *Social Psychology* have three nodal points: the doctrines of (1) instincts; (2) sentiments; (3) the development of character and volition. To lose sight of any one of them is to miss much of the value and significance of the book. Among other interesting and original features which, however, do not seem to me basic to the system as a whole, are various details in the interpretation of sympathy, suggestion and imitation as "general innate tendencies" to feel, think, and act as one perceives others doing; the theory of play—an ingenious adaptation of the theories of Spencer and Groos to his doctrine of the instincts; the analysis of the in-

⁵ *Idem*, p. 333, note; p. 377, note.

⁶ In the Preface to his last book, *The Group Mind*, which has just appeared, he mentions Ribot, Janet, Fouillée, Boutmy, Tarde, Demolins, Buckle, Maine, Lecky, and Lowell as authorities on psychology and social subjects to whom he owes most. Here he places slight value upon Wundt and other German psychologists.

⁷ *Social Psychology*, p. 363.

⁸ *Ibid.*, p. 361.

⁹ I have indicated the various metaphysical opinions with which I think Professor McDougall's doctrine of instincts might be combined in "The Evolution of Values from Instincts," *Philosophical Review*, 1915, esp. pp. 180-183.

stinctive bases of religion; and the suggestive conception of "active sympathy." These features deserve and have received some discussion and criticism; but it will be necessary to confine this paper to the three nodal points.

I. The significance of the instincts is indicated by the purpose of the *Social Psychology* which is to ascertain the mental characters of primary importance for society, and to illustrate their operation in the life of societies.¹⁰ The principal primary instincts are "the mental forces that maintain and shape all the life of individuals and societies";¹¹ from their operation arise sentiments, character, volition, and associated life. An author who attaches such a function to instincts is not thinking of sensation reflexes; he must have in mind such processes as fear, anger, sex, parental care, gregariousness, acquisitiveness and self-assertion; in short, the motives to which writers on moral and social evolution usually attribute the origin and growth of law, justice, religion, property, the family, the state and other institutions, when they choose to regard them psychologically. Prior to the appearance of the *Social Psychology*, in 1908, there was no scientific definition and classification of instincts suited to the needs of such writers. One of the main purposes of this book was to supply this want.

On the analogy of the reflex arc, Professor McDougall decides that on the physiological side the instinct has afferent, central and efferent portions. On the conscious side (and here and everywhere it must not be forgotten that Professor McDougall is an interactionist) an instinctive operation begins with a perception, followed by the distinctive emotion and conative impulse, after which it culminates (if not inhibited) in an action.¹² The fundamental part of the instinct is the emotion, together with the conative impulse, and remains unmodified throughout life. New afferent and efferent channels to an instinct may be acquired—as when we learn to be afraid or angry in response to new stimuli, and to express our fear and anger by new modes of behavior. But the characteristic emotions of anger and fear themselves never change, except in the sense that they become united in complex emotions and sentiments.

Each instinct is attended "by some one kind of emotional excitement whose quality is specific or peculiar to it." Keeping this principle in mind, the selection of a list of principal primary in-

¹⁰ Cf. the titles of Section I. and Section II., and pages 17, ff.

¹¹ *Ibid.*, p. 44.

¹² The correspondence with the afferent, central and efferent nerves of the reflex arc is imperfect. The emotion and conative impulse of the central portion are more prominent introspectively than the percepts and motor cues of the afferent and efferent portions; but all three portions are partly psychical and partly physiological.

instincts is based on two criteria: (1) the emotion and conative impulse are manifested in the behavior of the higher animals; (2) they occasionally appear in human beings with morbidly exaggerated intensity, showing that they are relatively independent functional units in the human mind (pp. 47-49). Working on this basis, the list of principal primary instincts and emotions is as follows:

<i>Instinct</i>	<i>Emotion</i>
Flight	Fear
Repulsion	Disgust
Curiosity	Wonder
Pugnacity	Anger
Self-Abasement	Subjection
Self-Assertion	Self-display
Parental	Tender
Sex	Lust ¹³
Food seeking	_____ ¹⁴
Aquisitive	_____ ¹⁴
Constructive	_____ ¹⁴
Gregarious	_____ ¹⁴

This list has been variously criticized. Professor Thorndike, following more strictly the conception of the reflex arc, finds it necessary to enumerate as many different instincts as there are different kinds of definite responses to definite situations. For instance, eating involves at least four separate responses, according as the taste of food is sweet; bitter; very sour, salt, acrid, bitter, oily; or appetite is sated. Reaching, grasping, and putting into the mouth require further discrimination; reaching alone "includes at least three somewhat different responses to different situations."¹⁵ Professor Thorndike's inventory of instincts is in reality an inventory of reflexes that are presumably attended by consciousness. Each term in Professor McDougall's list is for Professor Thorndike merely a general name for a considerable number of different instincts. It is evident that Professor Thorndike's purpose is not the same as that of Professor McDougall. He is apparently giving a preliminary account of innate modes of behavior that can be employed in laboratory experiments in learning, fatigue, and the like. He is not endeavoring to furnish a basis for the development of individual char-

¹³ P. 393.

¹⁴ The emotional tendency in the case of each of the last four instincts is not well enough defined to have received a name. Possibly McDougall now intends that the instinct of "distress" should be added to the list. (*Proceedings of the Aristotelian Society*, 1914-15, p. 49.)

¹⁵ "The Original Nature of Man," *Educational Psychology*, Vol. I., p. 50.

acter and social life. Professor Thorndike's viewpoint appears to be mechanistic. He certainly can have little patience with the general psychological and philosophical positions held by Professor McDougall. The issue between them raises the preliminary question whether psychology is properly a strictly mechanistic science, or whether it should, in the words of James, view consciousness as "primarily teleological;" or, to put it differently, whether instincts should be classified on the basis of physiological behavior or mental characteristics. If one prefers the latter alternative, he will think that Dr. James Drever has met Professor Thorndike's objection that according to Professor McDougall's list different responses at different times attend the manifestation of the same instinct, when he points out that, whatever the response may be, the emotion itself as it goes on in consciousness is characteristically the same. "Not only so, but the particular response does not of itself serve to satisfy or remove the emotion. The emotion only disappears when the response has secured its end—the avoidance of the danger."¹⁶ Moreover, all the different responses may be tried in turn to escape any given danger. Dr. Drever's argument, however, will appear irrelevant to the consistently mechanistic behaviorist.

In his *Foundations of Character*, Mr. Alexander F. Shand views instincts as specific responses to specific situations. He believes that there are organizing or teleological principles present in the mind, as well as the mechanistic ones. Instincts are organized and controlled by what he calls the "system of the emotion," or "emotional system," as well as by sentiments. In the case of the adult human being several instincts may coexist in the same system, "and the man who foresees the different results to which they impel him may sometimes be able to choose between them."¹⁷ Take the emotional system of fear as an illustration. A man who is afraid may choose between flight, concealment, silence, crying for help, and fighting. His end in any case is the same, and so is his emotion. Some instincts, like walking, running, *etc.*, may belong to a number of different emotional systems. It seems to me that Mr. Shand is right on this point, if we understand by instincts those simple or composite modes of behavior of the reflex type which are attended by and subject more or less to the guidance of consciousness. Professor McDougall does not seem to me to succeed in his attempts to reduce these alternative modes of behavior in the case of each instinct to a limited number that follow one another in serial order, so as to constitute "chain instincts."¹⁸ However, I am unable to see why one

¹⁶ *Instinct in Man*, p. 163.

¹⁷ P. 198.

¹⁸ *Proceedings of the Aristotelian Society*, 1914-15, pp. 29-43.

who is in the main a follower of Professor McDougall can not agree with Mr. Shand on this point. Why not regard the reflex modes of behavior that are attended by consciousness as mechanistic in their operation, and as specific responses to specific situations, and at the same time hold to Professor McDougall's list of the "principal primary instincts" and emotions? The latter would then be regarded as organizing, teleological principles which operate in the manner attributed by Mr. Shand to his "emotional systems." I can not see that anything would be lost in Professor McDougall's system that is significant for the interpretation of individual and social character, if this correction were made; and the facts appear to require it.

Professor McDougall observes in a passage in the *Social Psychology* that the instinct of pugnacity and emotion of anger are peculiar, in that they have "no specific object or objects the perception of which constitutes the initial stage of the instinctive process. The condition of its excitement is rather any opposition to the free exercise of any impulse, any obstruction to the activity to which the creature is impelled by any one of the other instincts."¹⁹ Mr. Shand assigns such a rôle to anger and also to fear, joy, and sorrow. He maintains that every primary impulse "is innately connected with the systems of fear, anger, joy, and sorrow in such a way that, when opposed, it tends to arouse anger; when satisfied, joy; when frustrated, sorrow; and when it anticipates frustration, fear."²⁰ Thus far, these are differences in detail which probably do not appear so important to their readers as they do to Professor McDougall and Mr. Shand themselves. But when Mr. Shand goes on to say that these four emotions develop an additional highly complex "system of desire," and that in this latter system there are generated a whole new set of "prospective emotions" (*viz.*: "hope," "anxiety," "disappointment," "despondency," "confidence," "despair") with reference to anticipations of the future, the whole center of gravity of Mr. Shand's system is seen to be differently located from that of Professor McDougall. Mr. Shand's structure, apart from the sentiments, consists of three stories: the basic primary impulses and emotions, to which he gives comparatively little attention; the four systems of fear, anger, joy, and sorrow; and the system of desire, together with the prospective emotions. While Mr. Shand has fortified his argument with a wealth of illustrations from English and French literature, I am disposed to believe that all the facts which he sets forth could probably be brought without difficulty into the one-story structure of Professor McDougall (after the modification that I have suggested in the preceding paragraph

¹⁹ P. 59.

²⁰ *Foundations of Character*, p. 38.

had been made). For Professor McDougall makes all the primary emotions conative at the outset, and so is able to regard the "prospective emotions" as "simply so many distinguishable ways by which the desire and emotion springing from any primary conative disposition, or from any sentiment, are modified by our intellectual apprehension of the degree of success or failure attending our efforts towards the end of our desire."²¹

Another interesting attempt to arrange instincts in different orders has been made by Professor Hocking.²² His first story consists of a large number of instincts that are definite responses (either expansive or contractive) somewhat in the manner of Professor Thorndike. Regulative of these are the four centrally initiated instincts of pugnacity, fear, curiosity, and play. If we must have a second story group of instincts regulating the others, curiosity and play, neither of which is a definite response to a definite situation, certainly belong in it. To it also belong, as I think, either "joy" and "sorrow" or "pleasure" and "unpleasantness"; and I would add besides the "social instinct" and the "instinct of thought." But I am not sure that we need two stories, if we conceive of the instincts in Professor McDougall's list as all teleological in their functioning, and capable of employing the more mechanistic reflexes for their ends.

Space does not permit more than reference to Professor Holt's²³ proposal to make "Freudian wishes," and Professor Woodworth's²⁴ to make "mechanisms" and "drives" the basis of social psychology. Both of these writers are right in breaking away from structural psychology, and each has enriched the subject by his contributions. Neither has as yet, however, developed his method of analysis to a point where it rivals those of Professor McDougall and Mr. Shand in comprehensiveness and workability.

The ultimate test for any doctrine of instincts or emotions in social psychology is its practical usefulness. Both are abstractions from the stream of consciousness. Neither is a metaphysically independent entity. What particular abstractions it is worth while for social psychology to make depends on which will be most fruitful in enabling us to understand and to direct the development of character in individuals and societies. Professor McDougall's list seems to me to meet this test very successfully on the whole. It appears

²¹ *Social Psychology*, p. 432.

²² *Human Nature and its Remaking*, Chapters VIII.-X.

²³ *The Freudian Wish, and its Place in Ethics*. I have reviewed this work in the *Philosophical Review*, 1917, pp. 672, ff.

²⁴ *Dynamic Psychology*. I have reviewed this book in this JOURNAL, 1919, pp. 77-82. McDougall has criticized Woodworth at length and Wallas more briefly, in an article in *Mind*, July, 1920.

to require supplementation chiefly in two directions. Professor Woodworth says that the system of Professor McDougall does not make sufficient space for the good will, comradeship and cooperation of equals.²⁵ Self-assertion and subjection are concerned chiefly with superiors and inferiors. The gregarious instinct is treated merely as an impulse to herd. Passive and active sympathy are not sufficient. So, though I once endeavored to meet this difficulty in an analysis of punitive justice by widening the scope of the gregarious instinct, it now seems to me that Professor Graham Wallas²⁶ handles the matter better by positing another instinct, which he calls "love"; but as we need this term for the sentiment, this had better be called, I think, the "social instinct."

The only other serious omission—at least as I think—in Professor McDougall's list has also been indicated by Professor Wallas.²⁷ This is the lack of provision for the desire for knowledge, and intellectual interest in general. Thought, including inference, is certainly an innate tendency in man. Its operation is attended by a distinct and unique emotional satisfaction, and it has its conative side. While not present in the animals, it may be regarded as the distinctive human instinct. The practical need of recognizing this instinct is great. It can not be identified with curiosity without minimizing its importance. There are as great dangers to the modern world in anti-intellectualism as in excessive rationalism. Neither blind impulses nor pure reason can operate in isolation. In the organization of character—both individual and collective—the recognition of this instinct can not too much be insisted upon.²⁸

II. A sentiment, for Professor McDougall, is the organization of instincts and emotions about the idea of some object. The most important varieties of sentiments are those of love, hate, and respect. Sentiments are classified according to the character of their objects as concrete particular (*e.g.*, love for a particular child), concrete general (*e.g.*, love for children) and abstract (love for justice, virtue, science). The original emotion felt toward an object of love would probably have been tender emotion; and as this became habitually attached to an object other emotions would become parts of the system, so that one would feel fear if the object's welfare were imperilled, anger if any one were to threaten to injure it, curiosity if there were more to learn about it, subjection if it were to become dis-

²⁵ *Op. cit.*, pp. 188-206.

²⁶ *The Great Society*, pp. 141-43.

²⁷ *Op. cit.*, pp. 39, ff. The whole of chapters III., X., and XI., deserve study.

²⁸ The rational side of volition is more fully recognized by Professor McDougall in his treatment of national volition in the *Group Mind*, pp. 237-242.

graced, elation if it were to win deserved credit, and so on. The various emotions manifested toward an object of hatred would be organized in an hostile manner, pugnacity in that case being the original instinct to become habitually attached to it.

As I have always understood Professor McDougall, the organization of two or more emotions about an object in this systematic form is the differentia of a sentiment. As this is the consequence of the habitual expression of the same emotion toward an object,²⁹ it follows as a corollary that sentiments are not innate, but acquired. If this is a correct interpretation there are innumerable sentiments in the mind of any adult human being, as many as there are objects that he habitually loves, hates, and respects. Moreover, there must be more than three types of sentiments also—I should say—in fact as many as there are different primary instincts which could first become habitually attached to objects and so furnish the nuclei of sentiments. If we make hatred the sentiment which has its origin in anger toward an object, the sentiment is somewhat different from the sentiment that is built up with reference to an object toward which the original and determining emotion felt was disgust. If a man makes enemies who hate him primarily because they are angry at him, he can hope eventually to win them over and placate them; but if their sentiment of aversion toward him is fundamentally one of disgust, there is small chance that he can ever induce them to regard him favorably. Scientific interest, parental affection, and romantic love appear to me to owe their origin to different instincts and to constitute sentiments of different types. Furthermore, there is less uniformity in the sentiments of individuals than in their instincts. The latter are innate, and common to the entire human race. An Oriental has the same instincts as an Occidental; his sentiments must be very different.³⁰ To hold a group together, in patriotism, religious devotion, enthusiasm for a cause, or what not, they must be

²⁹ In a controversial passage in his discussion with Mr. Shand (*Proceedings of the Aristotelian Society*, 1914-15, p. 51) Professor McDougall writes as if the only fundamental difference between instincts and sentiments is that the former are innate and the latter acquired, and that if a new afferent channel to an instinct were to be opened, say the presence of a dog in the case of the fear of a child, a sentiment would be established. I had previously understood pp. 35-38 of the *Social Psychology* to mean that afferent and efferent channels of instincts might be modified without the interposition of ideas and the formation of sentiments. The controversial passage need not be interpreted as implying a different view than I had understood, and in any case, being controversial, it may put the emphasis in a different place than would otherwise be done.

³⁰ However, in the *Group Mind*, Professor McDougall says that there are very great differences in the "innate tendencies," "qualities," and "dispositions" of different races. (Chap. VII. and Part III.)

taught common sentiments. The whole psychology of religion might be regarded as the implanting and development of a sentiment, as I have shown elsewhere.³¹ To hold a newly constituted state together, a national sentiment must spring up and acquire strength. The essential condition for a successful League of Nations would be the constitution of an international sentiment strong enough to bind the peoples of the associated nations together in a common loyalty.

Thus interpreted, the doctrine of the sentiment is indeed "the key to all the constructive part" of Professor McDougall's system, as contrasted with its purely analytical part.³² That this is seldom appreciated, and that discussion has chiefly centered about the instincts is, I think, partly Professor McDougall's fault. In Section II. of the *Social Psychology* he indicates social applications of the various instincts. He has not done this for the sentiments. It will be interesting to see how far he will do this in his forthcoming book, the *Group Mind*.³³

Since the sentiment, and not the instinct, is the more important tool for the understanding of social institutions, the issue with Mr. Shand as to the nature of the sentiment is crucial. The chief points in dispute between Professor McDougall and Mr. Shand in this connection are, whether Mr. Shand is justified in believing that sentiments are innate; that love and hate consist of the dispositions of the four emotions of joy, sorrow, anger, and fear, directly united; and so on. Such issues as these, I believe, can only be decided by observing the application of the rival systems of Professor McDougall and Mr. Shand to the interpretation of social institutions. Discussion of them in any other way is bound to appear to most readers as rather arid and scholastic. It is unfortunate that in the text of the *Social Psychology* the account of the sentiments remains unchanged in the

³¹ "Instinct and Sentiment in Religion," *Philosophical Review*, January, 1916.

³² *Social Psychology*, p. vii.

³³ Since writing this paper, the *Group Mind* has come into my hands, and I have added here and there a footnote citing this book. I have not yet had time to digest it. On first reading, it gives one the impression that the center of gravity in his system has changed considerably. He says surprisingly little about the principal primary instincts and emotions, and a great deal (especially in Part III.) about innate "capacities," "qualities" and "dispositions," without explaining their relation to the instincts. He now apparently thinks the original nature of man more complicated than he did when he wrote the *Social Psychology*, and that the additional constituents which he now attributes to it are of more consequence for some problems, at least, of associated life. However, what I have written above about the significance of the sentiments appears to be in accordance with the new book, in portions of which, like the basic Chapters III. and IV., the term "sentiment" apparently employed in the technical sense of the *Social Psychology*, appears on almost every page.

last edition, and dates from the time when Professor McDougall supposed Mr. Shand's doctrine of the sentiments to be virtually the same as his own. This is an injustice both to himself and to Mr. Shand. The majority of readers are likely to overlook the corrections in the preface and appendices, or to neglect them as unimportant.

Professor Morton Prince has strikingly shown the empirical usefulness of Professor McDougall's doctrine of the sentiments in psychotherapeutics.³⁴ He has also made use of it in drawing a remarkably plausible character sketch of the German Kaiser, Wilhelm II.³⁵ Professor McDougall believes that the "complexes" of psycho-analytic literature are pathological or morbid sentiments,³⁶ and claims that the empirical usefulness of the "complex" in medicine is confirmatory evidence for his doctrine of the sentiments. This claim appears reasonable, and promises to furnish a way to assimilate the "complex" to the conceptions of general psychology. The over-emphasis of the Freudian school upon the sex instinct can be corrected, if it can be agreed that any one of the instincts in Professor McDougall's list may become suppressed, sublimated or perverted, and may express itself in subconscious processes, including dreams. The supplementary chapter to the *Social Psychology* on "The Sex Instinct" seems to one reader, at least, the most sane and illuminating—he is almost disposed to say the only sane and illuminating—discussion of the subject that he has ever read.

III. Although, at least to the student of ethics, the chapters on character and volition (VII.–IX.) are the most valuable part of the *Social Psychology*, they have aroused comparatively little discussion. Character, for Professor McDougall, is mainly a matter of the growth of sentiments, and the organization of these sentiments into a coherent personality. The development of the self-regarding sentiment plays the leading rôle in this evolution. Volition is due to the reinforcement of other impulses by effort, and effort is the contribution of the self-regarding sentiment to the conflict. While the main ideas in these three chapters have been adapted from James, Tarde, Royce, Professor Baldwin, and others, they are here interpreted in the light of the doctrines of instinct and sentiment and given a coherence and significance which they never possessed before.

The principal attack upon these chapters has been made by Dr. Hastings Rashdall.³⁷ In reply to this I have written in defense of Professor McDougall.³⁸ On further reflection, I am now disposed to

³⁴ *The Unconscious*.

³⁵ *The Psychology of the Kaiser*.

³⁶ *Social Psychology*, p. ix.

³⁷ *Is Conscience an Emotion?*

³⁸ *Philosophical Review*, 1916, pp. 676–691.

believe that there may be more ground for Dr. Rashdall's criticism than I formerly thought, but I still believe that the view of reason in the moral life as "will" or "practical reason" (employing the latter term not quite in the Kantian sense) which includes not only the purely discursive processes, but also a synthetic organization of the emotions and sentiments in a coherent whole, enables us to present a view of the moral consciousness that is both rational and objective. This conception I may have been wrong in reading into Professor McDougall's account. I do not know. At any rate it ought to be there.

Along this line the *Social Psychology* needs another supplementary chapter, dealing with the organic character of the *individual* mind.³⁹ Even in infancy, the mind is a whole, though an undifferentiated whole. It is not a chaos of developed but disorganized emotions. With its normal development into a moral personality, the various instincts and emotions (including the social instinct, and the instinct of thought) become differentiated and organized into sentiments. This organization as a whole is what in ethics we mean, when we regard it intellectually, by the reason; and, when we look at it expressed in action, by the will; and when we regard it as the structural constitution of a man's mind, by his character. The self-psychology of Miss Calkins seems to me capable of furnishing an admirable means of approach to this problem.

Taken all in all, the *Introduction to Social Psychology* remains, after the twelve years since its first appearance, the foundation for a psychological interpretation of human social life. During this time its author has done much to broaden this foundation. While the doctrines need modification here and there, and further application and development everywhere, this book seems, to one admirer at least, by far the most important contribution to this field that has yet been made in the present century.

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THE TWENTIETH ANNUAL MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

THE elements favored us, and the counter-attractions of New York City proved in most cases not too great for the philosopher's powers of resistance. To that degree the twentieth meeting of the American Philosophical Association may be accounted a success. Not that New York, or any metropolis, is quite the proper place

³⁹ The organic character of the *social* mind is recognized in the *Group Mind* (e.g., pp. 10-12; 22-26; 78-80; 214, ff; 240-242).

for philosophic congregation. There is here no fitting atmosphere of leisure, nor other advantages that come with remoteness from the main currents of modern and practical life. But if certain external inducements were therefore lacking for the fullest surrender to the claims of the speculative, the programme prepared by the executive committee succeeded uncommonly well in fixing attention upon those human concerns which are unaffected by the vicissitudes of place and circumstance.

We were called upon to grapple with problems of modern logic; to analyze the function of education; to define epistemological dualism, relativity, individualism; and most extensively of all to consider the role of the philosopher in modern life. Not all of these topics, to be sure, proved conducive to complete philosophic tranquillity and intellectual enthusiasm. The austerity of certain of the subjects goaded one member to plead for a double programme in future meetings so that those taking delight in highly technical discussion might have their way without trespassing upon the comforts of others inclined to meditate upon humaner matters; and the apparently innocuous topic chosen for special consideration threatened quite unforeseen conflict and disquiet even before Professor Woodbridge disturbed the serenity of those engaged upon the definition and praise of the philosopher by his protest that it was pitiful indeed if at this our twentieth celebration we could do nothing more useful or more self-respecting than to ask what it is to be a philosopher. All was not harmony; nor all enthusiasm. And such degree of protest and division of opinion as was publicly voiced in all probability bulked small in comparison with the violent dissent on subject after subject which rankled in the minds of many, but for lack of time found no expression. Not that concord within any philosophical association need be secured by universal agreement upon all important matters. It is only when disagreement extends to something so fundamental as the very constitution and aims of philosophy itself that there is cause for actual alarm. In the opinion of the present writer the revelations at this last meeting of American philosophers were such as to justify alarm.

Relatively unimportant perhaps in this connection was the difference of opinion as to whether philosophy is metaphysics, and whether metaphysics includes logic, psychology and theory of morals. In one sense, that is, the question was a verbal one. Nobody impugned the reality of psychology, logic or ethics as departments of knowledge, any more than they impugned the reality of metaphysics. Strong feelings were nevertheless aroused as to the propriety or impropriety of the various classifications suggested. But it was when values were set upon the different domains and the aims of

philosophy explicitly defined that disagreements arose which could be accounted serious. The issue was clearly fixed when Professor Drake came forward with his view that, while the contemplation of ideas is justifiable in that it satisfies a harmless human impulse, it is valuable only as a genteel substitute for chess—the really important thing, the one valuable thing, being the solution of social problems. Though this came only as a brief comment from the floor, it may be taken as an unambiguous expression of the practical attitude approved by a number of those present, the attitude which without unfairness may be called in the last analysis anti-intellectualistic. Be it remembered that it was definitely a question as to the duties of the philosopher in his official capacity and in private labor, and incidentally therefore as to the place of philosophy in education and in life. In justice to Professor Drake and to many who were in agreement with him it should be admitted that what they wished to advocate was perhaps, theoretically at least, not a subordination for all time of the claims of the intellect to those of active life. With the final solution of all social ills they would undoubtedly hope for a true renaissance of intellectualism when intellectual exercise could question, however, is whether a postponement of the cultivation of be sincerely rated as something more significant than play. The pure metaphysics *for its own sake* until society needs no further improvement and practical problems are all solved, might not mean a postponement forever, or at best a postponement of such duration that whatever purely disinterested metaphysical curiosity the human mind possesses would have dried up or been drained off beyond recall into the service of other and more “useful” activities.

Expressions of an opinion strongly opposed to that of Professor Drake came from the leaders of the discussion. Professor Pratt, in his appeal for a greater sense of consecration to the task of teaching and research, went so far as to deplore participation by the philosopher in any kind of political propaganda. In his opinion the philosophic function is literally and strictly to foster the life of the spirit. Again, Professor Mecklin denied that the philosopher is a social reformer, declaring his task to be untrammelled theorizing activity requiring speculative imagination and critical reason. Dr. Cabot, instead of wishing, as a professional public benefactor might have been expected to wish, for a curtailment of impractical philosophic training and study, urged rather that more courses, more teachers, more hours be devoted to the subject. He stressed the point that the attainment of new ideas which is the object, though rarely achieved, of discipline in thinking, involves a painful process not unlike an operation; and that it is not for the teacher of philosophy to try to make that operation less painful. Professor Powell, without ad-

vocating metaphysical operation for its own sake, practised it brilliantly in his comparison of the tasks of the philosopher and the lawyer. The latter, he declared, is, like the metaphysician, often involved with hypothetical entities of his own creation and in need of philosophic criticism. Unlike him, he is trammelled in his judgments by precedent and inhibited by a sense of the irrevocable future consequences of his own decisions. Whereas the philosopher is care-free and happy, living in the present, the student of law has to live at once in past, present and future, constantly making points which establish a line. Decisions of lawyers, then, constitute a body of practical ethical judgments which should be of great interest to the ethicist. Professor Woodbridge's protest against the whole discussion, which followed Professor Powell's contribution, produced a shock. To some it appeared as heresy; to others as a sane and needed check upon an argument that had reached its limit of usefulness. It served in any case to give a new turn to the topic—one to which for lack of time justice could not be done. This was the question of historical research and the teaching of the history of philosophy.

As a matter of fact the few who rose to their feet and uttered their opinions appeared to be in perfect unanimity in the matter. Two or three spoke in behalf of more and better teaching of the history of philosophy, and Professor Creighton echoed the lament of Professor Woodbridge that too few serious historical studies are submitted to the *Philosophical Review* and other publications. The final word in the chorus of agreement came from Professor Riley who undertook to suggest topics for historical research which in his opinion might well engage the attention of the student of philosophy. The compilation of a history of American Art (as more profitable and sensible than the study of *einführung* and other theoretical questions) was one suggestion; the study of the history of sumptuary laws was another. No one in the audience arose to point out to Professor Riley that the history of art is neither psychology nor esthetics and that still less is it philosophy. Either the majority agreed with him; or they were too staggered to make reply. Professor Creighton, it is to be recorded with thanksgiving, did protest with regard to a history of sumptuary law that it would be history and not philosophy. But the whole big problem upon which attention had alighted for a moment and from which it had then glanced off—the problem of the place and the importance of the history of philosophy in the study of philosophy—was dropped, and we heard no more of it. And yet, judging from the scanty evidence of the present writer's unvoiced questions and criticism, and the unvoiced questions and criticisms of a few others, there was here no philosophic concord and unity of opinion. Indeed, the kind of disagreement that further pursuit of

the topic would have brought out was precisely the kind that, as was remarked above, is cause for real alarm. That one group of philosophers are materialists, another vitalists; that some incline to idealistic epistemology, others to realistic; that certain men are pragmatists and the rest are not—all this is probably advantageous for the search for truth. But that on such a question as the significance of historical research in philosophy for philosophy itself there should be sharply opposed opinion, is quite another matter. There is no space here for recording the hypothetical controversy that might have taken place, but didn't. And yet even in the briefest account of the philosophical meetings just past it is more than barely relevant to comment upon a matter, touched upon though not discussed, and of the intensest interest to all concerned. That comment is as follows:

More than any previous age of human life this is an historical age. It is an age dominated by the concept of evolution. And while historical interest and historical method made possible the vindication of the evolution hypothesis, that hypothesis has in turn reinforced historical interest and encouraged historical habits. Now the evolutionary viewpoint has meant increased intellectual emancipation, a loosening of the fetters of dogma, a greater readiness for shift of opinion in the face of a shifting world. To the pragmatic movement with its use of the concept of evolution is due much of the renewed emphasis within the field of philosophy upon the historical method which has been productive of such fortunate consequences. That method, when applied to the study of ethics, was adapted to make for greater liberality in the evaluation of any given code by drawing attention to the impermanence of all codes and their startling multiplicity. When applied to the study of epistemology and metaphysics, it served to emphasize the variety of possible epistemological and metaphysical viewpoints and the dangers of an over-hasty conclusion that one's own particular epistemology and metaphysics was destined to be the final one. The importance of history, of the history of human opinion, for developing a philosophic spirit of free inquiry, has been recognized anew and received new demonstration. What then of the argument that philosophers should bend their energies to increased historical research? It is likely, to be sure, that there are interesting matters as yet uninvestigated regarding the lives of the thinkers of the past and regarding the circumstances under which they developed their ideas (though it is less likely that there still remain unlisted any important varieties of metaphysical theory originated by those thinkers of the past which would serve to enrich the background of the thinkers of the present).

It is likely also that most young students of philosophy are better fitted to do a creditable bit of work of an historical nature than to originate a metaphysical system. What then? Shall the mature student of philosophy likewise devote himself to the amassing of history, and still more history? Is, after all, history of philosophy, philosophy? The chemist would scarcely admit that the history of mediæval theories and practise, including alchemy, constitutes an important part, or even a genuine part, of present-day chemistry; the psychologist would argue similarly about the subject-matter of psychology, and the mathematician about mathematics. Even the historian would declare it to be a small part of the concern of history to record its own past—to make a history of history. That a young person, or even a mature one, is better able to cope with an historical problem than to produce an original philosophic idea would not seem to prove that history, even the history of philosophic ideas, is philosophy. The most that it might suggest is that the young person, or the older one, might be in the wrong niche altogether, might be really an historian and not a philosopher at all. If Miss Calkins was correct in her definition of metaphysics—that it is an attempt, by reason, to get at ultimate reality—then surely it would seem that—provided the historians of philosophy have really made a compilation of all the important theories that have in the past been held regarding the nature of the good, the true, and the beautiful with a view to envisaging *all possible* theories, in the hope of finally arriving at the *true theory*—it would be well to advocate *less* fresh historical research rather than more, as a substitute for philosophy itself, that is. When philosophers in cooperation with scientists have actually determined the complete nature of ultimate reality—an achievement not likely to occur this side of the infinite—then of course it will be quite proper to return to biographies both of men and of theories, and glorify them forever. If, by that time, the theory of art is quite settled, we may also resort to the history of art, even American art; and perhaps history proper will at last have nothing to do but investigate its own history. Only, if Miss Calkins's definition still stands, the philosopher's activity will then result in nothing but history, likewise the esthetician's, while history itself will have an eternity of leisure for the swallowing of its own constantly augmenting tale.

It is time to return to a brief mention of the other topics offered for consideration at the first and later sessions of the conference. Professor Mitchell's paper on "Formalism in Logic," which set forth an ingenious method for reclassifying and combining the fundamental propositional relations of traditional logic, elicited technical

comments and questions from several members of the association. The same was true of Professor Lewis's brilliant paper on "The Structure of Logic and its Relation to Other Systems," in which the thesis was defended that no single set of demonstrable postulates can properly be called ultimate, and that any attempt to demonstrate the validity of logical principles must of necessity be circular since the principles discussed will themselves be employed in the demonstration. Professor Lewis made an interesting point about classes supposed falsely to include themselves, to the effect that when a judgment about the nature of propositions is expressed propositionally, that judgment does not have as part of its domain of reference the proposition expressing it—the supposition that it does being due to the gratuitous introduction of a further judgment that the proposition in question is a proposition, which in turn would involve a definition of propositions in general.

Professor Cohen by his paper entitled "Some Philosophical Aspects of Physical Relativity" plunged us into abstruse and difficult questions upon which everyone nowadays is supposed to hold some opinion. His main point seemed to be that even Einstein's own views of relativity do not involve a denial of an absolute. The absolute admitted is however not a substance, but consists rather of the system of the invariant relations of nature, comparable to the Logos underlying the Heraclitean flux. Taking into account the complete system of reference of any measurement, that measurement will then be absolute and unchanging, just as a mathematical formula will then be absolute within one limited system of postulates though "untrue" or meaningless within another. Professor Spaulding, leading the discussion of the paper, offered an analysis of the philosophical significance of relativity on his own account, pointing out that space appeared to have attributed to it a dynamic function to take the place of the function formerly ascribed to gravitation, while for the old absolute ether had been substituted an "ether of events"—none of all this serving however as a proof of subjectivism. As a conclusion to the morning session, Professor Sellars read a paper on "Epistemological Dualism vs. Metaphysical Dualism" in which he spoke of the importance of distinguishing between naïve and critical realism, the former of which falsely identifies the physical object with the content of perception, while critical realism is dualistic, admitting that we know the external thing despite the fact that it does not enter as content of the experience. The copy theory may, he contended, be escaped by a recognition that the content of perception contains merely the "gross structure" of the external world.

The afternoon session, at which the topic of the rôle of the phi-

losopher was started, was followed by a reception to the association by President and Mrs. Butler, this in turn being followed by dinner at Westminster Hotel and the brilliant address, "The Appeal to Reason," by the president, Professor Perry. As was said repeatedly the following day, we should have been amply supplied with material for discussion if we could have confined ourselves for the remaining sessions to the ideas formulated in this address. Nevertheless we returned dutifully the next morning to the appointed programme and after concluding the discussion about the philosopher listened to Professor Montague's vivid account of the International Congress held at Oxford in September, at which he, as chairman of the American delegation, and Professors Hoernlé and Boodin had described the present situation in philosophy in America.

At the final session Professor Townsend treated the topic "Education as Criticism," reaching the pessimistic conclusion that while criticism as opposed to dogmatism is the ideal of education, it has failed in that it has been employed not as an end but as an instrument of will and the desire for power. Professor Ferguson, treating of "A Supposed Dualism in Plato" offered an intricate and interesting analysis of the allegory of the cave in the seventh book of the *Republic*, for the purpose of showing that Plato merely states there the two stages of education and is not offering a classification of objects. Professor Lodge, under the title "The Reference to Reality in Modern Logic," attempted a reconciliation of Pragmatism and Absolute Idealism. And finally, in a paper on "The Philosophical Basis of Mr. Fite's Individualism," Professor Symons convicted Mr. Fite of inconsistency in postulating a harmony to be attained between egoistic impulse and self-realization through social relations, such harmony, in Mr. Symons's view, necessarily presupposing a social consciousness and a monistic system which Mr. Fite would deny.

The members of the association went their way, not regenerated perhaps, but at least stimulated by the interchange of ideas. There were gaps in the ranks. Professor Hoernlé had deserted us for a professorship at Durham, England, and Professor Overstreet, in recent years so closely identified with all the activities of the association, was absent in California. Both were missed, as well as Professor Sheldon, the president for the coming year, Professor Bode, this last year's vice-president, and many others. Of those who had gathered for the annual consideration of the problems of philosophy, there surely was none who, as the sessions broke up, failed to feel in an unusual degree unworthiness and sharp regret for all philosophic shortcomings. In this age, when more than ever before there is need

of reason and ripeness of judgment in a distracted world, the shortcomings of the philosopher impress one as a genuine calamity. In this age, that is productive at once of savage brutalities, ingenious sophistries in defense of outworn traditions, unprecedented greed for material goods and alarming increase of control by unintelligent and fanatical minorities, what indeed promises salvation but the development of those qualities that Professor Gardiner hailed as the product of the philosophic habit and temper of mind: poise and moderated passion and prejudice; and ability to clarify ideas, to reconcile apparent contradictions and to formulate and develop ideals? If philosophers, set somewhat apart by training and by natural concern for the generic and unchanging aspect of things, are themselves unsure of their function, at variance regarding method, and inclined, any of them, to doubt the worth of those intellectual interests which it is their task to guard and cherish—then indeed is the outlook for the future even darker and more ominous than the facts of contemporary history incline one to fear.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Religious Consciousness: A Psychological Study. JAMES BISSETT PRATT. New York: The Macmillan Co. 1920. Pp. x + 488.

This "study" is in fact a general work on the psychology of religion. The contents range from a preliminary analysis of the notion of religion and of the psychology of religion through a discussion of the subconscious and of society and the individual to the specific topics of religious growth, conversion and revivals, belief in God and in immortality, the cult, prayer, and mysticism. The plan of the work differs in three respects from that of others in which much the same topics appear: First, mysticism receives especially full treatment (almost a third of the book); second, the material is drawn almost exclusively from highly developed religions; third, within this field the author's policy tends toward fulness of descriptive detail rather than toward the finally adequate analysis that includes origins and early forms.

Certain unquestionably excellent results have been achieved by this unusual plan. In particular, the work is unique for range and variety of data within its chosen field, and for sympathetic appreciation of diverse types of religious belief and practice. Professor Pratt has taken pains to obtain first hand knowledge of such facts not only in our western environment but also in India, and he has consistently

endeavored to discover how each situation looks through the eyes of the person whom he observes. His reading of religious literature is similarly catholic in range and in spirit.

A general work of this character is certain, of course, to contain much material that is the common property of psychologists. Concerning Pratt's presentation of this material it is sufficient to say that he has given it attractive and often popular form. The technical psychologist will, of course, look beyond this to what is less usual, and especially to anything that is debatable. Among the fresh leads that he will find are the following:

1. Correction of one-sidedness in western conceptions of religious life in India. For example, Pratt finds a vital belief in immortality among all classes in India *except* those that have come under western influence, and he has a succinct explanation for the fact (248-250). He points out, too, that the majority of Indian mystics emphasize personality (471, f.).

2. A penetrating analysis of the causes of decline in the belief in immortality in our western world (238, ff.).

3. Ascertainment of a type of conversion, objective-minded and sometimes intellectual, that has been generally overlooked by psychologists because they have incautiously taken their lead from evangelical theology and customs (122-140).

4. Evidence that one function of the cult, from the standpoint of the worshipper himself and not merely from that of the priest, is renewal and confirmation of the religious attitude (271-278), so that religion here appears as evaluation of itself, a process of self-involution.

5. Careful exposition of the specific differences and relations between objective worship, which seeks to produce changes in the deity, and subjective worship, which aims at effects in the worshipper himself (Chap. XIV).

Among the debated and debatable points are:

1. Pratt strenuously opposes Ames's general view of functional psychology as inclusive of theology and philosophy, and particularly his reduction of the meaning of God to "idea of God." But, for some almost inscrutable reason, Pratt does not himself come to close quarters with the distinction between structural and functional analysis of religious experiences. His most common schema is structural—the exhibition at each point of four factors or types, the traditional, the rational, the mystical, and the practical or moral (14, ff.). Values are indeed mentioned, but there is neither classification of them, nor indication of their origins, or of how they change within our changing experience (see, for example, 271). His definition of

religion at the outset makes it "the serious and social attitude of individuals or communities toward the power or powers which they conceive as having ultimate control over their interests and destinies" (2). The perspective here is functional and it is social; it has to do with attitudes, interests, destiny, control. In the remainder of the book, however, "interests" receive scant notice,¹ and God becomes simply the "determiner of destiny." The notion of control, too, at least as far as it concerns this life, is limited almost entirely to subjective reinforcement of desires of which there is nowhere a thorough exposition. The term "social attitude" in the definition justifies an expectation that religion will be treated as an incorporation of social values most of all. Instead of this the social aspect of religion appears in the main body of the book almost if not quite exclusively as imitation, institutionalism, and traditionalism—structural aspects merely.

2. The author undertakes to give a description of the religious consciousness in the full scientific sense of description, which is inclusive of generalization and explanation (29). He seems to assume that such description is possible without reference to genetic problems. "We are not at all concerned . . . with the origin of the belief in a God or gods. . . . Our questions are the less speculative and hopeful ones, Why do people continue to believe in God, and what are the psychological factors that influence or determine the meaning of that term" (200)? This passage is followed by exposition of the difference between dogmatic and popular ideas of God, discrimination between rational and imaginative factors, and exhibition of the four types of belief (see 1 above). But the content of the idea of God, and why this content stirs men's minds at all are hardly mentioned. We are thus left with no real explanation of why men believe in God. The main reason for this deficiency, I judge, lies in Pratt's determination to keep clear of origins. It is almost as if one who desires to know the psychology of private property should limit his study to the drawing and signing of a title deed.

3. Finally, debatable ground is taken in a number of details. (a) The products of dissociation are said to be always limited and inferior (59), whereas one of the harder problems of the sub-conscious grows out of the invention, sometimes amounting to artistic creation, that has appeared in several dissociated consciousnesses. (b) Pratt accepts James's notion of ideo-motor action, and bases a theory of religious self-expression upon it. The point of Thorndike's criticisms of this theory, that the particular act that accom-

¹ What is it, for instance, that a Hindu widow hopes for when she makes offerings before the *lingam* of the "Great God," and what is the content of the faith that is strengthened by this act? See page 274.

panies an idea has become attached to it through previous experience, seems to have been missed (95; 169, note 10). (c) The doctrine that an extreme break between childhood and adolescence is normal—"out of thinghood into selfhood" (108)—appears to reflect a theory that is losing ground. (d) The primary cause of the cult is found in a cosmic sense (of *mana*) that is produced by natural phenomena (260, ff.). This opinion will have to reckon with Campbell's recent re-study of *mana* from which she concludes that this idea expresses the experience of heightened power that one has when one acts with a group, and that *mana* is not impersonal. Several recent investigations, moreover, dealing with widely diverse bodies of fact, converge upon the view that religious experience is at its core continuous with men's experience of one another (see *Psy. Bul.*, Vol. 17, No 3, March, 1920, pp. 95-99). (e) Pratt leaves us in doubt concerning his view of some factors of original nature. He speaks of an instinct of self-assertion (230 *et passim*), but intimates that there may be something of the sort still deeper than instinct. One wonders what this something is. He speaks also of an instinct of self-expression (268, 278), the nature and the existence of which surely need to be established. There is, apparently, a "spiritual nature" (479), and some persons have a "natural tendency toward mysticism" (359). Both concepts need clarification. (f) Owing, no doubt, to the fact that the book has been in process for more than twelve years, so that, as the Preface explains, several distinct strata of thought are superimposed upon one another, one or two inconsistencies are visible, one of them an important one. It is declared at the beginning that a mystical factor is present in "every genuinely religious person" (14), but at the end the author says that "many truly religious people are emphatically not mystical, and mysticism is by no means essential to religion" (477). There is apparently a similar confusion with regard to tribal initiations (263, 289).

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Little Essays Drawn from the Writings of George Santayana.

LOGAN PEARSALL SMITH. (With the collaboration of the author.)

New York: Charles Scribner's Sons. 1920. Pp. ii + 290.

The compiler of these extracts from Mr. Santayana's volumes explains his undertaking as follows: "The origin and purpose of this book can be briefly stated. Ever since I became acquainted with Mr. Santayana's writings, I have been in the habit of taking up now and then one or another of his volumes, finding in them, among many things that, being no philosopher, I did not understand, much writing

like that of the older essayists on large human subjects, which seemed to me more interesting and in many ways more important than anything I found in the works of other contemporary writers. I soon fell into the way of copying out the passages that I liked, and thus I gradually formed a collection of little essays on subjects of general interest—art and literature and religion, and the history of the human mind as it has manifested itself at various times and in the works of different men of genius. As most of Mr. Santayana's books have not been reprinted in England, and are hardly known to those on this side of the Atlantic who might be interested in them, it occurred to me that it might be worth while to print these little essays. I asked Mr. Santayana if he would permit me to do this, sending him my collection for his consideration and possible approval. I sent it to him with some misgiving, for I felt that it was rather an impertinent thing to cut up the life-work of a distinguished philosopher into a disconnected compilation of "elegant extracts." And then, as I re-read with more careful attention the books from which I had been making excerpts, I came to see that there lay implicit in the material something of far greater significance, and that a much better use might be made of it. It became clear to me that the estimations and criticisms I had copied out were not mere personal and temperamental insights, but were bound up with, and dependent upon, a definite philosophy, a rational conception of the world and man's allotted place in it, which gave them a unity of interest and an importance far beyond that of any mere utterances of miscellaneous appreciation—any mere 'adventures of the soul.' . . . It was from this edifice of Reason that I had been taking the ornaments, and I now saw the much greater beauty they would have if they could appear in their appropriate setting. To sift, however, and rearrange these fragments, to reconstruct out of them some image in miniature of the original edifice from which I had detached them, was not a task for me to undertake—it could only be performed by the architect of the original building. Fortunately I succeeded in persuading Mr. Santayana to undertake this task; and while, therefore, the choice of these little essays is largely mine, their titles and order and arrangement, and the changes and omissions which have been made in the original texts are due, not to me, but to their author."

It would appear from this that Mr. Smith, when he made his selections, had not yet become familiar with the philosophical position they illustrate, and this may account for some omissions. Different readers of the original works will, of course, prefer different passages, and Mr. Santayana has not, perhaps, cared to interfere with the preferences of Mr. Smith. But the volume has been pre-

pared rather for appreciative readers of reflective literature than for those that are occupied with the technicalities of professional discussion, or with the ponderous superstitions that Mr. Santayana has helped so many to outgrow.

The extracts are arranged under five headings: Human Nature, Religion, Art and Poetry, Poets and Philosophers, Materialism and Morals.

To the reader familiar with the extracts in their original context it is a curious experience to find them in any other—for in these essays he will find joined together sentences taken from different volumes. Naturally, it is not a system of philosophy that will strike the mind of the readers of *Little Essays*. What will strike them remains to be seen.

In Mr. Santayana's criticism of life, wisdom has a note of resignation that makes the *Life of Reason* a composition in a minor key. One often has the impression that the function of philosophy is to reveal the immense illusion of spontaneous energy. Philosophy tames the will to live, and beauty cheers and ennobles the peace that comes when one reaches the age of Cephalus. This attitude is well illustrated by the splendid extract 86, from *Egotism and German Philosophy*. The passage is entitled "Heathenism"; and heathenism (contrasted, perhaps, in the author's mind with Christian otherworldliness) it appears, is the futile faith in life, in energy, and in the will to live. Mr. Santayana's symbol is the bull in the ring, dashing heroically against what he can not overcome. "Heathenism is the religion of will, the faith which life has in itself because it is life, and in its aims because it is pursuing them" (p. 219). This emphasis is, of course, not the only emphasis in Mr. Santayana's many-sided work, and the fine passage I refer to is aimed at a type of metaphysics that is coming more and more to seem a curious piece of academic madness; this, however, the reader of *Little Essays* may not discover. Yet this is one strong and repeating emphasis, and it may strike many readers that to stamp wisdom so indelibly with the marks of resignation is to assimilate the *Life of Reason* too much to what Mr. Santayana calls "post-rational morality."

If one were to look about for some one who had pursued the life of reason with preeminent success, Mr. Santayana might accept William James as an example. But James was always full of the will to live and always encouraged others to have it. His somewhat unfortunate essay "The Will to Believe" expresses this same "faith which life has in itself because it is life."

This volume begins with a fine protest against the prejudice man

has against himself. I wonder if this emphasis on inevitable resignation is consistent with the spirit of that protest.

As a great admirer of Mr. Santayana's philosophy, and as one profoundly indebted to his summons back to the sanity of the pre-Christian Greeks, I hope it may be the younger students of wisdom and criticism that will be stirred by this volume. It is much to be hoped that the note of hastened purpose will not deter them from finding out what the great theme of the *Life of Reason* really is.

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JOURNALS AND NEW BOOKS

BRITISH JOURNAL OF PSYCHOLOGY. Vol. X, Parts 2 and 3: March, 1920. *On Listening to Sounds of Weak Intensity*: E. M. SMITH and F. C. BARTLETT (pp. 133-168) Part II.—The work developed from an attempt to devise and apply a series of tests for the selection of candidates for the Anti-Submarine service. Variations are liable to occur in the relative efficiency of the two ears, such variations developing gradually and extending over a long period. Sounds of weak intensity may take as long as four seconds to produce their full effect. These and more technical conclusions were drawn. *Psychology and Education* (pp. 169-176): T. P. NUNN.—This inaugural address at the first meeting of the educational section of the British Psychological Society outlines the important departments of educational psychology. *Psychology and Industry* (pp. 177-182): CHARLES S. MYERS.—This address, given before the first meeting of the medical section of the British Psychological Society, shows that in industry there are four main themes to which psychology can profitably be applied, fatigue, movement study, vocational guidance, and management. By the aid of properly devised tests applied by properly trained persons those leaving school could be materially helped and usefully advised in their choice of suitable vocation. *Psychology and Medicine* (pp. 183-193): W. H. R. RIVERS.—This inaugural address given before the first meeting of the medical section of the British Psychological Society quotes researches in psychology applied to medicine. *Some Measurements of the Accuracy of the Time-Intervals in Playing a Keyed Instrument* (pp. 194-198): W. B. MORTON.—A diagram is reproduced which shows that this player's hand was inclined to hurry on the right. *Some Experiments in Learning and Retention* (pp. 199-209): MAY SMITH and WM. McDOUGALL.—The writers have adduced experimental evidence in support of Professor Bergson's distinction between habit and memory. Effort or volition

are very important in rendering repetition effective in memorizing. *The Present Attitude of Employees in Industrial Psychology* (pp. 210-227): SUSIE S. BRIERLEY.—The assumption by the worker of some measure of genuine control of industrial processes is the only way in which it is possible to restore to the vast dehumanised machine of modern production any true satisfaction for the workmanly and creative impulses of the bulk of those whose destiny it controls. The workers come to Psychology as to the human science, the science which, whatever else be prostituted to meaner ends, will of its essence consider the whole man, in all his relations. *Suggestion and Suggestibility* (pp. 228-241): E. PRIDEAUX.—Of the methods of "suggestion treatment" there is no question that the method of normal suggestion by explanation and appeals to feelings is the best, as the patient then realizes that he himself is responsible for the removal of symptoms and he will know what to do in case of a relapse. The real cause of the patients' condition may never be discovered, so that treatment by suggestion does not conform to our ideal method of treatment. *The Single General Factor in Dissimilar Mental Measurements* (pp. 242-258): J. C. MAXWELL GARNETT.—The paper is concerned with variables that are distributed according to the normal law and measured in such units as will give to each the same standard deviation. Observations on the DeSanctis tests are given. The claim made by DeSanctis that his problems test successively higher mental functions can not be sustained, nor can his claim be sustained that his tests can differentiate between the feeble-minded and the normal. The tests are quite practical and afford a rapid means of classifying the mentally defective. They are correctly arranged in order of difficulty. *Publications Recently Received. Proceedings of the British Psychological Society.*

Achilles, Edith Mulhall. *Experimental Studies in Recall and Recognition*. New York: Archives of Psychology. 1920. Pp. 80. \$1.25.

Adickes, Erich; Clemens Baeumker; Jonas Cohn; Hans Cornelius; Karl Groos, Alois Höfler; Ernst Troeltch; Hans Vaihinger. *Die Deutsche Philosophie der Gegenwart in Selbstdarstellungen*. Zweiter Band. Leipzig: Felix Meiner. 1921. Pp. 203.

Benett, William. *Freedom and Liberty*. Oxford: University Press. 1920. Pp. 367.

Galloway, T. W. *The Sex Factor in Human Life: A Study Outline for College Men*. New York: American Social Hygiene Association. 1921. Pp. 142.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held on January 3, the Very Rev. Dean W. R. Inge, President, in the chair. Mr. C. A. Richardson read a paper on "The New Materialism." The new materialism takes the form of a denial of anything corresponding to the idea of "mind" or "subject." Unlike the old doctrine, it does not affirm the reality of atoms, its ultimate stuff is sense-material. It reduces the subject of experience to a series of sense-data, and the sense-data are conceived as ontologically independent of the subject. Against this it was argued that the subject of experience is a real metaphysical existence. Experience consists in spiritual activity and one type of this activity is sense-experience. The content, sense-data, is the particular form the activity assumes, and the form is determined by the interaction of individual subjects. The most pressing philosophical need of the day is to come to an agreement on this point. Until we are agreed as to whether there exists the subject or mind, there must be disagreement on the fundamental matter of philosophy, namely, the entities in terms of which theories may be formulated. Without a common platform philosophy will be left behind, a curious relic, by the intuitive wisdom of the vast mass of humanity.

DR. LOUIS HERBERT GRAY, who went to Europe as a member of the American Commission to Negotiate Peace and who has until recently been attached to the American Embassy in Paris, has returned to America and joined the staff of the faculty in philosophy of the University of Nebraska. Professor Gray received his doctorate in the field of Indo-Iranian from Columbia University in 1900, and in the intervening years has been a voluminous contributor to Oriental studies, both in the linguistic and ethnographic lines. His work has also embraced wide ranges in comparative religion and ethics, and he served for a number of years as associate editor of *The Encyclopaedia of Religion and Ethics*, to which his contributed articles are many. At Nebraska Professor Gray is introducing courses representing something of a departure in the ordinary programmes in philosophy. His field is the civilizations of Asia, and he is offering courses in Asiatic history, art, philosophies and religions. His work may be regarded as a symptom of the growing importance which an understanding of the culture and history of Asia is assuming in America as a consequence of the upheaval in world affairs.

THE JOURNAL OF PHILOSOPHY

THE INDEPENDENT VARIABILITY OF PURPOSE AND BELIEF

THAT there is no purpose without cognition may be taken for granted. Shall we then slur the difference by using the terms interchangeably, or by introducing blends such as "appreciation," "judgments of practise," and "value-judgments"? On the contrary, where there is intimate complexity the sound method is that which analyzes and distinguishes. One can not expect to follow two closely interwoven strands until one has first clearly identified each of them; and in that preliminary stage of identification it is necessary to dwell upon differences, rather than to slur them. This is quite consistent with a full recognition of their intimacy. It presupposes that intimacy. There is a problem only because of such intimacy. Interest affects belief in countless ways, by directing it to a certain context, by accompanying and impregnating it with attitudes of favor or disfavor, and by weighting the evidence on which it is based. Belief, on the other hand, affects interest, by exciting or depressing it, by knowing it, by illuminating it, or by determining the forms in which it expresses itself. But how can we say these things without implying that belief is one thing and interest another? And how can we understand these complexities, relations and interactions without some preliminary understanding of the terms themselves?

The separability and independent variability of these two factors is assumed by common sense, as is indicated by such expressions as the following: "I am compelled to believe" (by implication "against my will"); "I have reluctantly concluded;" "I was agreeably disappointed;" "I am sorry to find;" "I wish it were so;" *etc.* The child who sees his mother enter at one door with a bottle, and his father at the other with a slipper, doubtless does so with feeling, but none the less he entertains *beliefs* or *expectations* with reference to both stimuli, as truly as does the unfeeling psychologist who stands by to observe the phenomenon. One may take a belief and show how it may remain unaffected through the whole repertory and cycle of the passions, including the point of indifference. When an historical event such as signing of the armistice is made known, there oc-

curs a moment of belief which may in individual minds be combined with joy or grief, with rage or fear, with pleasure or displeasure, and with any degree of emotional or affective intensity. A given individual having adopted a belief with reluctance, may later be glad, and eventually not care. In passing through these phases the individual has never changed his belief or wavered in his adherence to it. Similarly an interest may remain fixed while belief varies. One may desire peace and not falter in one's pursuit of it, while belief in its achievement passes from disbelief through doubt to ascending degrees of certainty. Let us now seek to interpret this independent variability more exactly.

In order to understand the difference between interest and belief it will be necessary to consider a common constituent which with one qualification becomes interested action, and with another qualification becomes belief. This more fundamental process may best be called "supposition."¹ It is essentially an anticipatory set, or implicit course of action correlated with a specific object. If I suppose or entertain the idea that the barn is on fire, I in some measure set my fire-response in readiness. I talk to myself in terms taken from my fire-vocabulary; and I am peculiarly receptive to such visual or other sensory stimuli as fire has in the past presented. Other trains of anticipatory responses such as fire itself is most apt to excite are now partially excited in its absence. In short, a reaction-system of which fire is the complementary environmental factor is in momentary possession of my mind. This may be the end of the matter, so far as this particular system is concerned. In the course of the implicit elaboration of this response some other system may have been started into action, and I may wander from supposition to supposition through a more or less protracted sequence of "idle" conjecture.

If we examine the structure of a supposition we find a further important property. It is *scheduled* or *set for* a specific occasion or class of occasions. Supposing my barn to be on fire is, for example, a readiness for fire-stimuli when I now at this moment look out of the east window rather than when to-morrow I look out of the west window. The supposition determines not only what my response shall be, but on what occasion it shall be applied. Having a supposition that my barn is on fire, there is some specific situation which will find me by virtue of that supposition on the look-out for fire and

¹ This is approximately the same as the *Annahme* of A. Meinong, who deserves credit for having brought this process to light. The present treatment, however, differs radically from Meinong's; especially in getting away almost wholly from the traditional form of the judgment or proposition, and in giving the matter a schematic *physiological* interpretation.

ready to deal with it. By virtue of my supposition I shall be more or less ready to act according as fire is or is not presented on *that* occasion. If fire is presented, I shall be able to respond to it without preliminary adjustment, and shall be in advance of another to whom, as we say, no such possibility has "occurred." *Per contra*, if fire is not presented my response is, so to speak, thrown back upon its haunches. I am taken by surprise and have perhaps a more difficult readjustment to make than another who has not thought at all.

It will be convenient to employ the term "index" for the stimulus or situation which brings the response into action. In the formal judgment the so-called "subject" is the index, the so-called "predicate" is the response, and the fact whose presence or absence determines the judgment to be true or false is the complementary environmental condition or "object." The subject is given, the predicate is applied and the object is contingent. The index may assume a variety of forms and in a given case it can be identified only functionally. In the supposition considered above the subject is not "my house" in any determined verbal, imaginal or physical sense. The subject is that situation in which my readiness for fire matures and is brought to bear. In any given case the same supposition might equally well be expressed as "If you will look through that window you will see flames." When a judgment is formulated verbally the so-called "subject" ordinarily *instructs* the organism to which it is addressed. It localizes or sets the attention, and determines what stimulus shall serve as index. In some cases a word may serve both to instruct and to indicate. If the word "fire" is shouted in my hearing with a certain intonation my fire-response is aroused at that moment and at that place. But the words, "There is a fire out there" prepare me for what I further see (the complementary stimulus of red flames, *etc.*) when I received visual stimuli with a certain specific localization (the index). "Your house is on fire" may determine this same index, but it will also determine me to look elsewhere for evidence, as *e.g.*, in my automatic fire-alarm, or the report of my stable-boy. In other words the latter judgment has a wider range of verification, it establishes more occasions of adjustment or of maladjustment, of surprise or of confirmation.

Truth and error are said to be relative to the intent of a judgment. I know of no better description of this than in the terms here proposed. Truth and error qualify an anticipatory set as regards *its fitness to meet a specific occasion*. There can be no determination of its truth or error so long as the locus of its application remains ambiguous. A charge of error can always be effectively

met if one can show that "that was not what one was talking about"; that is, if there remains doubt as to where the evidence is to be sought. By fitness is meant only that the anticipatory set does or does not there find the complementary object by which it can move to completion. This "complementary object" may be a single actual stimulus, or a group of stimuli, or a group of physical properties, by which a response is enabled to execute itself. Fire as an object consists of the way it looks, sounds or feels; and also of the other things that can be "done" with it, such as burning things with it, or quenching it. In fact since my response to it may consist in part of a further extension of plans, the object must include its capacity to mean or to act as a sign. Object, in short, is much more than stimulus.²

A bare supposition does, then, have the functional relations that are necessary in order to determine truth or error. There is need of much greater elaboration before this problem can be said to be adequately solved, but to pursue it further here would take us far off our charted course.³

² Cf. E. B. Holt's doctrine of "the recession of the stimulus," *The Freudian Wish*, 1915, 75 ff.

³ For a further discussion of aspects of this problem, cf. my article entitled "The Truth-Problem," this JOURNAL, 1916, Vol. XIII, pp. 505, 561. Mr. Russell has recently undertaken to describe thought in terms of "images," a reversion to a mode of epistemology that has been showing symptoms of obsolescence. Although I sympathize heartily with Mr. Russell's appeal to "fact" as the test of truth and error, I can not see that he has escaped any of the difficulties and shortcomings of the "representative" theory. It is not a question of whether "images" in some sense exist or not; doubtless they do. But, in the first place, their nature and conditions are so obscure that it is good strategy to attack somewhere else in the hope of understanding them better by taking them in the rear or in the flank. And in the second place, they do not appear to play the part in thought which Mr. Russell attributes to them; inasmuch as: *first*, their presence is not necessary, even though usual; *second*, their resemblance to the "object" is not necessary, though common; *third*, even where there is an image which is similar, this does not sufficiently describe the thought's selection of its object, its pointing or reference, since error, in other words dissimilarity, does not make a thought any less a thought. Cf. B. Russell: "On Propositions: What They Are and How They Mean," in *Problems of Science and Philosophy*, *Aristotelian Society*, Supplementary Volume II, 1-43. Mr. Russell's emphasis on images has exposed him to H. H. Joachim's attack in *Mind*, 1920, XXIX, pp. 404-414. In the same number of *Mind* (398-404) appears a restatement of Mr. Russell's view with a great difference at least of emphasis. He here makes little of images; says that "the essence of meaning lies in the causal efficacy of that which has meaning" (398); and that meaning attaches to "signs," which are "sensible (or imaginal) phenomena which cause actions appropriate, not to themselves, but to something else with which they are associated" (402). With this revised view I should differ only in points of detail. It illustrates, I think, a fundamentally sound method of attacking the question.

Commonly a supposition is further qualified as: (1) a belief; or (2) a purpose.⁴

1. A belief is a supposition to which one has committed oneself. This is evidently a matter of degree. In every supposition there is some degree of belief. Doubt is feebleness or vacillation of belief; and disbelief is contrary or antagonistic belief. There is some belief in all supposition because all supposition is action, and action which precludes other action. When one is following up, exploring, or elaborating a certain supposition, other suppositions are cut off, and for the time being one is committed. But for practical purposes it is easy to distinguish such momentary and innocuous committal from irretrievable committal, in which one's bridges are burnt behind one. Irretrievable committal is the case in which the supposition has gone so far as to exclude all other suppositions with the same index. There are no mental reservations, no anchors to windward. The non-occurrence of the complementary objects finds one utterly maladjusted. This condition may develop in various ways. If upon supposing my barn to be on fire I cry "Fire!" telephone for the police and rush out of the house in the direction of the barn, I am engaging in activities which for the time inhibit the supposition that the barn is in a state of "normalcy." I am also creating a rapidly shifting series of new situations to which I must react as they arise, and which prevent vacillation, that is, the alternation of the two major suppositions. Or I may have carried my supposition so far as to make it impossible to reverse because of the momentum of the response. Even though the complementary stimulus should not appear the organism would be caught off its balance and unable to bring another response into play. Or a supposition may have been carried so far as to lead to amendments in other systems of response. Supposing my barn to be on fire I give up my trip to the city and suspend household activities, so that the contrary supposition is impeded through requiring a general rearrangement of plans. Or the supposition may come in the shape of a suggestion, which, finding an unresourceful

The great merit of pragmatism lies in its having discredited the image theory of knowledge, and in its having introduced a functional view of meaning. James, *e.g.*, speaks of meaning in terms of "experiences to be expected" (article on "Pragmatism" in *Dictionary of Philosophy and Psychology*). But this function must remain more or less mythical until it can be interpreted in terms of organic behavior; and unless it presupposes a physical environment.

⁴ Or it may be a hypothesis, a question, a doubt, a command, a wish, *etc.* While we must for the sake of brevity omit these variations from the present discussion it would appear that up to a certain point they are all alike, and homogeneous with the acts of mind considered above.

and unresisting mind, may obtain exclusive possession by default.⁵

2. Purpose has been elsewhere examined in its own terms,⁶ but its nature now requires a brief restatement here in the light of the nature of supposition and belief. In purpose a reaction-system being partially aroused generates auxiliary activities. These may be random activities of a type likely sooner or later to provide the complementary object by which the response is completed; or they may be activities which owing to previous experience *promise* that object. Where the former is the case we may speak of longing, wishing or craving, as present; but only where the latter is the case may we properly speak of purpose.

A purpose, then, requires the presence of a supposition, which ordinarily will have assumed the form of a belief.⁷ The auxiliary act is performed because the belief which qualifies it is an anticipation of the response required for the completion of the determining tendency. It follows that a belief becomes a purpose only when the anticipatory response in which it consists is *in demand*. The belief correlates the anticipatory response with a specific occasion; the purpose subordinates it to a determining tendency. In the case of purpose the determining tendency and the component belief are so related that one can be inferred from the other. If the agent is asked to justify his action in terms of his interest, he will state his belief; if he is asked to justify his action in terms of his belief, he will state his interest. Thus if an ambitious man who allows himself to be interviewed by a reporter is asked to explain, he will explain that he is ambitious if he supposes you to be familiar with his beliefs regarding the political effects of publicity, and he will explain that it pays to advertise, if he supposes you to be familiar with his ambition.

Belief and purpose may also be linked through containing the same component response. What I believe about a situation may consist of what I propose to do about it. Thus in the case of the aforesaid fire, the believing consists in part of the arousal of my fire-extinguishing activities, and these activities fully aroused become my method of dealing with the situation and express my desire with reference to it. The belief is the fact that my mode of

⁵ There are undoubtedly other factors in belief, such as the "sense of reality," which I think can be interpreted as the receptive attitude to external stimuli; and the factor of earnestness or zeal, which is a blend of belief with resolution or will.

⁶ Cf. my article "A Behavioristic View of Purpose," this JOURNAL, Vol. XVIII, No. 4.

⁷ One may act on doubtful grounds; which would mean that although a plan is being carried out alternatives are not wholly abandoned.

dealing with fire,⁸ whatever that may be, *is now brought into play*, to the exclusion of my modes of dealing with the safe and usual condition of my property. The purpose to put the fire out lies in the *character* of my fire-response, and its *selective control of my action*. I do what I do because of its paving the way to my fire-response, in other words, I have a purpose with reference to the fire; and that response consists in movements culminating and coming to rest in the experience of fire-extinguished, in other words, the purpose in question is to put the fire out. That I act on fire as I do, and that I act at all is a matter of purpose; but that this mode of acting on fire should be correlated with a specific situation, that I should bring that rather than some other response to bear here and now, is a matter of belief. The force and quality of my act are derived from purpose, its *opportuneness* from belief.

We may now understand more clearly the alleged impotence of reason. It is the practical function of reason or the intellectual faculties to effect certain internal adjustments by which preformed unit-responses are fitted to a governing tendency; that is, to find among the individual's existing propensities the means by which a purpose may be executed. Belief without purpose would refer to explicit action only hypothetically. It would mean an established connection between an indicated situation and a mode of response, which would render the indicated situation eligible in case there was any call for the response. What belief does is thus to establish connecting channels by which the currents of purposive energy are distributed and directed. In the absence of such currents, belief is like an empty aqueduct.⁹ But this is after all no more than to say that belief is one of the conditions of action. When it *does occur*, it *is* a condition; and owing to its peculiar controllability, it may for practical purposes be the all-important condition; as important, for example, as the agencies by which "physical" forces are directed and applied.

The distinction between purpose and belief is further reflected in the distinction between motor-affective meanings and cognitive meanings. A datum derives meaning from the present and impending

⁸ In a first experience of this sort modes of response will be integrated in a new way. I am prepared for what I have never met before, for example, fire on my own property. I have modes of dealing with fire, and with my own property. These being combined in advance create a readiness for a novel situation. All beliefs doubtless have *some* element of novelty in them.

⁹ I do not mean here to take a stand either for or against the "ideo-motor theory," according to which a belief if left to itself will take effect in action. Cases of pure ideo-motor action are in any case rare; and even if they do exist the all-important fact is that the belief *is* left to itself, that it does, in other words, function as a determining tendency.

action which it arouses. A pain-stimulus is immediately qualified by the response of rejection and may be said to acquire the meaning of intolerability, as food being or about to be eaten acquires the meaning of edibility. The meaning consists in the imminent action already formed and started on its course. But a datum has cognitive meaning only in so far as it arouses a conditional response, that is, a response whose completion is contingent on the further development of the situation. It is not necessary to suppose that the one of these meanings is possible without the other, but only that they are distinguishable. The motor-affective meaning is infallible, the cognitive meaning is liable to error. If I have already begun the activity of eating, then the object so responded to possesses in some measure the quality or value of edibility. *I am finding it edible.* If I anticipate the later stages of the process but find it impossible to carry them out, if the object can be carried to the mouth but can not be swallowed, then it belies its promise and I have judged in error. Motor-affective meaning is the existing response or its completion in so far as these require no further development of the stimulus; cognitive meaning is projected response correlated with a future series of objects which may or may not be presented. The confusion of these two types of meaning has led to the error of regarding motor-affective responses as a kind of true knowledge, or to the error of regarding some cognitive responses as having the infallibility of fact.¹⁰

In order further to illustrate the interplay of interest and cognition let us now examine some of the modes of their independent variability. There is, first, the case in which belief remains fixed while purpose varies. I expect a visit from *X* to-morrow at four o'clock. My attitude to *X* being one of enmity I schedule my combative response for that hour. Meanwhile I experience a change of heart about *X* and come to regard him as a friend in disguise. What I then change is the character of the *X*-response. My expectation of his arrival is unchanged; that is, my *X*-response, which is now a grateful response, is still scheduled for to-morrow at four o'clock. My surprise at his non-appearance will be in no way affected by the

¹⁰ I take it that the view here proposed is approximately the same as that of Mrs. De Laguna, formulated in her valuable article entitled "Emotion and Perception from the Behaviorist Standpoint," this JOURNAL, Vol. XVI (1919), pp. 409-427. She says, for example, "In so far as a stimulus is calling into play a specific type of response, belonging to a single genetic and functional system, it possesses the affective quality experienced in emotion; in so far as the stimulus calls into play an attentive postponement of response, it arouses cognitive awareness and possesses perceptual quality" (421-422). Mrs. De Laguna also has in mind the analytical function of perception.

change in the greeting which I have prepared for him. Or consider identity of belief with variety of purpose in different individuals. The rumored signing of the armistice on November 8, 1918, was greeted by some with delirious joy, by others with rage. The defeat of Germany was already linked with different reaction-systems in the minds of these two groups. The one group struggled to bring it about, the other to avert it. The identity of belief lay in the fact that both took the same occasion to discharge these different reaction systems; and both were equally in error, in that in both cases the response was equally premature.

Second, there is the case in which there is stability of purpose with variability of belief. A mother loves her son with steadfastness. This means that she is disposed to rejoice at his success and to grieve at his failure. She will then rejoice or grieve in accordance with her beliefs. She hears a report of his success and believes it. This means that she responds to the situation with the response that constitutes her way of greeting her son's success. The father, being more skeptical, suspends his rejoicing, though he is no less disposed to rejoice at his son's success when once he believes it. Additional evidence then leads to the mother's abandonment of her belief, that is to the abandonment of her rejoicing. Her rejoicing turns out to be ill-timed. The situation is one to which her grief rather than her rejoicing is appropriate. Meanwhile she has not in the least changed her sentiment, that is her system of reactions in relation to the fortunes of her son. She has revised only the schedule, the timing, the application of these reactions. Similarly the sentiment of humanity may beget in one man a chronic melancholy, in another a spirit of joyful service. The difference between the pessimist and the optimist is not a difference in what they love and hate, but a difference in what they think, that is a difference in the occasions on which they bring their love and hate to bear.

Third, there is the case of a converse relation between belief and purpose. In hopeless longing there is a positive response which is never applied. The man who longs to see his dead sweetheart, but without belief in any such possibility, is perpetually rehearsing loving greetings which he never assigns a place in his plan. There is no occasion in his life when he enacts these greetings, nor any occasion which he is prepared to meet thus and thus alone. His hopeless longing is an unscheduled response, one that has no place in the programme which he is carrying out. Or consider the opposite case of dread, the positive expectation of that which is contrary to one's will. This means that one's fixed response to a certain situation, such as the loss of money, is one of grief. To dread the loss of

money means, then, that this grief is set for the reading of the financial news in the evening paper. It is *now* set, and in some degree partially excited, which distinguishes this situation from the situation that might be described in the words "I expect to be sorry tomorrow." In the latter case one is now implicitly enacting not the sorrow but that response with which I am accustomed to deal with my sorrow, which may be to read a detective story.

There is another and quite different case to which the term dread is sometimes applied, the case, namely in which one acts to avert a future contingency. Here the belief and the interest are likely to be congruent, though there is commonly much vacillation. The familiar and apparently simple case of the burnt child's dread of fire is in reality one of the most paradoxical of all forms of behavior. We may suppose inherited connections between the visual fire-stimulus and the withdrawing movement. Suppose the child to have completed the two reflexes in the usual order: (1a) seeing fire, (1b) touching fire; (2a) feeling pain; (2b) withdrawing hand. Then in future when the visual fire-stimulus occurs it should by habit and association arouse the reaching response with the withdrawal response held in readiness and awaiting its turn. As a matter of fact, however, the child *avoids* the fire, that is, the reaching response is somehow anticipated and annulled by the withdrawing response. According to the classic explanation (the so-called "Meynert scheme") this is due to the arousal by association of the *idea* of the fire, which releases the withdrawal response in time to forestall the reaching response.¹¹ A simpler explanation would now be offered in terms of the "conditional reflex." This visual stimulus of the bright flame, being present *with* the pain-stimulus, becomes itself a sufficient stimulus for a retraction-movement which was originally coupled only with the pain-stimulus.¹²

¹¹ Cf. James: *Principles of Psychology*, Vol. I, pp. 24-27. For a criticism of this explanation, cf. E. H. Holt: *The Freudian Wish*, pp. 69-74. Holt explains the behavior by supposing that since the pain-stimulus is an intense form of the heat-stimulus, the former or the stimulus to retraction is present in some degree whenever the child is in proximity to the flame. Learning to avoid fire consists then in increasing the openness of the motor path until the retraction response is more easily aroused, or aroused at just that point in the increase of the warmth-pain stimulus that is compatible with safety and interferes to a minimum extent with the organism's other dealings with the object. This explanation is in the judgment of the present writer too limited in application to get to the root of the matter. It would not, for example, explain why a cut child dreads knives or learns not to "monkey with a buzz-saw."

¹² For a summary of "conditioned motor reflexes," cf. J. B. Watson: "The Place of the Conditioned Reflex in Psychology," *Psychol. Rev.*, 1916, Vol. XXIII, pp. 94-97; *Psychology from the Standpoint of a Behaviorist*, 1919, p.

In any case the important thing to note is that the visual stimulus itself causes retraction, so that the occurrence of the pain-stimulus is not necessary. The visual stimulus is not so reacted to as to introduce the pain-stimulus as a condition of the retraction response. The organism has not the purpose of removing pain, but (in so far as there is anything tentative in the behavior) of withdrawal from the visible fire.¹³

There are several ways in which the factor of purpose might enter into such a situation. The pain-reflex itself may assume a tentative or conative form. The first retraction may fail to remove the pain stimulus, and in this case the checked response will lead to auxiliary random efforts—to the casting about for means. Stimuli promising relief will be reacted to because the anticipatory act which they arouse agrees with the impeded relieving response.

A different situation arises when the pain-stimulus itself is prospective instead of present. There is undoubtedly such a thing as acting from dread of pain, or for the purpose of avoiding pain. Avoidance or prevention is "better than cure"; it is not a means to cure. We *may*, to be sure, suppose a case in which remedial action itself, the relief from distress, the actual efforts or performances incidental to the removal of a stimulus, should tend to expression in the absence of the stimulus; and in which, therefore, opportunities promising to provide the stimulus should be seized as providing an outlet for the tendency. Something of this sort seems to be the case with the longing which retired soldiers have for the revival of those very enemies, fears and privations which when they were present those same soldiers did all in their power to remove. Or there may be a virtuosity in remedial action which moves a man to look for trouble in order to give himself the satisfaction of overcoming it. But if there is such a thing as has been described, at any rate it is not what we mean by *dread* or *prevention*. In this latter case the remedial action, that is the pain together with the characteristic removal-reactions to which it gives rise, is just what is avoided. We must in this case suppose either one or both of two things: either a specific countertendency, a strong internal resistance to the play of

212. It must be admitted that since the actual mechanisms by which the conditioned reflex is created are obscure it is impossible to deny that the associative centers are called into play in some such manner as is schematically indicated in the "Meynert scheme."

¹³ In order to understand the rapidity with which the conditioned reflex is established in such cases it is probably necessary to suppose that pain-reflexes have a peculiar power to persist and to spread. Cf. Sherrington's statements in Schäfer's *Physiology*, 1900, Vol. II, p. 974, quoted by C. T. Herrick, in *Introduction to Neurology*, 1918, p. 287.

this system of response; or a positive tendency on the part of some other and antagonistic system. In the first case, whatever response is prospectively congruent with this system will meet with the same resistance. One's purpose will be wholly negative in the sense that it rejects but does not select. If one crosses the street to avoid meeting a person one dislikes, the dread of meeting the person has acted only as a deterrent. It has forced the positive purpose of getting to my destination to abandon the straighter and shorter course. It is for this reason that action motivated by fear is lacking in constructive quality and is attended by unhappiness. Fear inhibits but does not inspire. Action governed by fear is a succession of rejections, of acts considered only to be abhorred—a series of mistakes and false starts. In the second case, on the other hand, a positive prospect, the antithesis to that which I dread, acts as a determining tendency, as when I take medicine not to avoid a headache but to feel well and to do those things which in the absence of headache I can do. In both of these cases interest and belief run together. The negative avoidance of damnation is accompanied by a correlative series of inhibited beliefs in damnation; the positive interest in salvation is accompanied by positive belief and takes the form of hope instead of dread.

There is one further case of the conversivity of interest and belief, which occurs at the moment when the belief is tested. One may then be "pleasantly surprised," or have one's "worst fears realized." To be pleasantly surprised, as, for example, at one's election to office, means that the response prepared for the occasion of the reception of the news was one of regret, of fortitude, of redirection of activity to other objects. In spite of efforts in the past to obtain election one had subsequently arranged to deal with failure rather than with success. But although the news of one's election finds one unready, the response which one awkwardly and tardily brings into play is a positive and joyful response. The news is grateful to the ear and releases constructive activities subordinate to the political purpose which is now renewed. When one's worst fears are realized, on the other hand, one has prepared for the worst and finds that preparation suitable to the event. One's belief is verified, though one's desire is thwarted.

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RECONSTRUCTION IN MENTAL TESTS

AS to the existence of a goodly amount of unrest among psychologists and others who are working in the field of mental tests, there can be no doubt. Such unrest is natural following a period of inflation and is probably symptomatic of a tendency to get back to normal. It is, however, of some importance to watch carefully the process of readjustment, if for no other reason than that it may be as painless as possible and productive of no new disorders that are preventable.

A recent article,¹ clearly a product of this unrest, seems to be traveling over dangerous ground toward a goal that is hardly wholesome. The opinions expressed in this article are shared by enough others in and adjacent to the test field so that its contents assume an importance quite out of proportion to that of the article itself.

The general point of view which is taken is that mental testing is not a descriptive but a technical science; and that since statistical methods as applied to tests have been largely methods borrowed from the descriptive sciences, the time has come to look for fundamental revision in statistical approach. It is urged that every method must aim at the most direct and empirical solution of a problem—"no hypotheses, as thoroughly empirical treatment as may be!" Among other specific assertions, we find, "The actual distribution of various traits is a matter of academic interest only." It is contended that such a revision of methods, aimed at the practical solution of a practical problem, is necessary for the clarification of the total situation.

Before attempting to discuss the truly vital issues involved in such a point of view as this, it may be well to clear the ground by discussing briefly the concrete illustrations in the article. There it is pointed out that a school superintendent who is called upon to make a decision as to the use of this, that, or any test scale, and who is given data as to the "reliability" and "validity" of these scales and information as to the statistical procedure in the construction of this scale, will not be given the information that is really essential to him in making his decision. Of course, this is obvious. But, surprisingly, the conclusion drawn is that the study of the "reliability" and "validity" is futile, and that the construction of test series or tests that approximate as nearly as can be determined true scales of measurement is irrelevant to the prob-

¹ Pressey, S. L., "Suggestions," etc. *Psychological Review*, Vol. 27, No. 6, page 466.

lem. The criticism more properly belongs to the advisor of the school superintendent who suggested these three criteria by which to judge the practical usefulness of his tests. The criticism of statistical methods on such grounds is much like finding fault with the esthesiometric index because it had been suggested as a measure of pitch discrimination; or of current quotations in sterling because of their unsuitability as an indication of the selling price of wheat.

It is worthy of note, however, that a writer in this field believes that a school superintendent might be thus badly advised. If I may be permitted to depart for a moment from the main discussion of this paper, the fact that such bad advice is obtainable is a matter which psychologists can not much longer ignore. It is the result, to my mind, of two conditions. First, inadequate instruction in statistical technique for students who are doing their work in mental tests; and second, careless editing of psychological and educational periodicals. Not only are most instructional forces rather poorly equipped from the standpoint of personnel to give adequate statistical instruction, but the libraries in many cases lack periodicals and books which are essential for the student in mental tests. To be concrete, *Biometrika* should be available for first hand reference by such students, and certainly by research workers.

The journals are perhaps even more responsible for the existence of questionable statistical opinion. Articles are all too common which, from a statistical point of view, are distinctly amateurish. One quotation will be illustrative. In a recent article, the subjects which were examined are being described: "In the first group, there were seven boys and eight girls. Of these, two were colored. In the second group, termed the abnormal group, there were nineteen cases. The chronological age ranged from eight to fifteen years. There were ten boys and nine girls. Of these, seven were colored children. *Thus, the two groups represented a chance selection.*" Fifteen pages of the journal were consumed in reporting an experiment based upon such a selection of subjects.

Another type of article which frequently appears is that which naïvely expounds as new some bit of statistical technique which has long had a recognized and reputable standing—without ever a word as to its origin. Thus, we have an article telling how to weight the individual parts of a test to gain maximum diagnostic value without any mention of Spearman's work which was published in 1913. We find articles telling us how to compute a correlation without the use of products, without any acknowledgment of Pearson's or Harris's notes appearing prior to 1910. The de-

mand is made for methods which will show how unmistakably a test scale will set off the lower 15 per cent. or so in scholastic ability; but this technique was devised by Pearson in 1909, its applicability to experimental psychology pointed out by Brown in 1911, and its suitability as an index of diagnostic value in the test field has been discussed by later writers. The authors of such papers themselves can not be held blameless; but after all it is the journals that have brought into existence the reputations to which school superintendents turn for advice.

To come back to the main subject under discussion, the desire for revising our statistical technique to conform with mental testing, not as a descriptive, but as a technical science. There are at least three good reasons why such an attitude is to be deplored.

In the first place, it leads to the giving of approval to various statistical tricks which may be expedient enough in producing results in an immediate and practical situation, but which are actually bad method. Pressey comments on the statistical methods used in the development of the army trade tests as being a step in the right direction. As a matter of fact, from the point of view of method, the trade tests' statistical technique is open to serious criticism. To be sure, the present writer must be held responsible for the statistical method which was used in constructing trade tests, but he would justify it on the ground of practical necessity. Mere practical usefulness does not appear to justify a place for this particular technique as reputable scientific method.

In an earlier article in this JOURNAL,² it has been pointed out that the barrenness of the field of mental tests is due in some measure to the extent to which statistical technique has been permitted to compromise the results of test measurement as descriptive material. Certainly, the creation of a "statistics" which shall be simply a tool in the solution of a technical and practical problem can not do other than accomplish further distortion of the actual phenomena which are observed. Pressey would even use his statistics to produce bi-modal distributions in the observed phenomena, because, as he says, "A normal distribution of scores is not to be desired if the greatest efficiency is sought."

To sum up my first point, it seems to me that if we make practical efficiency the criterion by which our statistical technique is judged, we shall encourage the use of innumerable methods, faulty or merely expedient, which have, to be sure, served a purpose, but which can not be genuinely productive in a scientific sense.

² Vol. XVII, No. 3, p. 57.

In the second place, this point of view results naturally in a tendency to ignore the necessity for analysis, and for the isolation of variable factors in connection with a test problem. Concretely, this tendency finds its expression in the existence of "omnibus" tests and the like, methods which are concerned only with the total score and the immediate desire for successful prediction.

These first two points of criticism gain added significance as they are related to a third point, namely, that this point of view, with its approval of the expeditious, with its tendency to warp the observed data in its statistical machinery, with its inclination to discard as irrelevant and academic the laborious isolation of factors and definition of concepts, must invariably limit the possibility of significant contributions to psychological science from the mental test field.

The future of mental tests, even as applied science, hinges on the capacity of the field to produce contributions that will give us more light on the general problems of mental adjustment. These contributions will be in the highest sense of theoretical importance. It is therefore, to my mind, unfortunate that there should exist a point of view towards statistical technique that will ultimately bring about increased scientific sterility of the field.

The best progress in the field of mental tests can not come from considering that "mental testing is not a descriptive but a technical science." Like any other science, the science of mental tests must be descriptive before it can be technical. We are urged to accept as a slogan: "No hypotheses, as thoroughly empirical treatment as may be!" It would be more suitable to urge at the present time, "No problem that does not test out an hypothesis."

Psychologists could well afford to ignore for the time being the practical applications of mental tests. These have been adequately established and there will always be technicians to work out refinements in practical procedure. The need to-day is for a clarification of the concepts and hypotheses underlying the mental test field; which may in time lead to the development of a theory of measurement that will be consistent with our best knowledge of mental life.

That there must be a change in mental test theory and mental tests methods is evident. The restlessness of workers in the field is certain indication that some change will come. But the change must be an orderly one, based upon scientific principles and upon the most exact methods that exist or that can be devised. "Direct action" can not hold more promise in the realm of science than

in the field of politics; and the most productive reconstruction in mental test theory and technique will be one that serves to increase the contribution of mental testing as descriptive science.

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THE TWENTY-NINTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE twenty-ninth annual meeting of the American Psychological Association marked an unusually well attended and enthusiastic gathering of American students of psychology. Because of Chicago's central location and probably because of the fact that the American Association for the Advancement of Science also held its meetings in the midwest metropolis, the registration was unusually large. It would be rash of course to attempt to correlate the fresh and eager attitude of the assembled psychologists with the proverbial breezes of Chicago, but possibly there is some relation between the enthusiasm of the psychologists and the remedial effects of time upon the disturbances of war. The calmer consideration of problems scientific and pedagogic gave ample evidence of our passing on from war time events. In truth, the various discussions during the several sessions manifested stronger currents of psychological and general scientific interest than has been the case in the past few years.

The session began on Tuesday morning, December 28, and ended the Thursday morning following. At times the meetings were rather bewildering, since, because of the combined sessions with sections I and sometimes Q of the American Association for the Advancement of Science, there were as many as four sessions at once. All meetings were held in the Law Building of the University of Chicago. The meetings were announced in the programmes as follows: Tuesday morning a session for general psychology; in the afternoon of the same day two sessions were scheduled, one in experimental psychology paralleling a joint session with sections I and Q of the American Association for the Advancement of Science. Wednesday afternoon there was scheduled the address of Dr. Yerkes, the retiring vice-president of section I which was articulated with the psychological association meeting, advertised as a session for social psychology. Dr. Yerkes spoke on "The Relation of Psychology to Medicine," and advocated the establishment of psychology in the medical curriculum as a basic medical science.

On Wednesday afternoon the session on social psychology was followed by the business meeting. In the evening the annual dinner

of the American Psychological Association was held in Ida Noyes Hall, the palatial women's social center building of the University of Chicago. Following the dinner, the president of the Association, Dr. Shepherd Ivory Franz, delivered an excellent and important address, and later in the evening a period was devoted to some reminiscences of Wilhelm Wundt by Messrs. Cattell, Judd, Scott, and Pintner.

The programme for Thursday morning announced a session for comparative psychology. In addition to these meetings announced on the American Psychological Association programme, the American Association for the Advancement of Science programme scheduled a joint meeting of section I (psychology) and Q (education) for Tuesday morning, and a "Symposium on Problems of Psychology" for Thursday morning. The psychologists who spoke at the symposium and the titles of their papers were: Dr. Cattell, "Practical Psychology;" President Scott, "Psychology in Industry;" Professor Judd, "Problems in Psychology;" Dr. Yerkes, "Problems of Psychology."

In commenting upon the meetings it is necessary to distinguish between the session headings of the programme and the contents of the papers read. For the two things, namely, the session headings and the contents of the papers did not always agree. Thus, the session announced for comparative psychology listed only two papers out of a total of six, which were reports on animals. Also, out of seven papers listed under industrial psychology and tests, only two were industrial in nature. To these two papers may be added a third on advertising media, strangely appearing under the heading of comparative psychology; these three constituted the total number of papers on industrial and commercial topics. As no doubt there is a definite correlation between the interests and occupations of American psychologists and the content of the papers read at this meeting, it is interesting to enumerate the papers by topic. Tests and guidance, 22 papers, plus 7 in the psychological section of the American Association for the Advancement of Science; experimental psychology, 19 papers, 8 of which were on learning, 2 on auditory phenomena, 5 on oculo-visual investigations and the rest on scattered topics; general psychology, 7 papers; social psychology 3; and animal psychology 2.

Judging from the association meeting, it is not incorrect to say that American psychologists are for the most part tremendously interested in tests of various sorts, although there are numerous indications of serious dissatisfaction with much of the testing work done. How decided is the disapproval of much of the test work could be gathered from the remarks of Professor Judd, who spoke in the

symposium of the American Association for the Advancement of Science. Professor Judd uttered a definite warning against much of the work in tests, making many references to dangers to psychology as a science. The theme of his remarks was that the persons working with tests are not careful enough to provide themselves with a basic scientific psychological foundation. Unfortunately Professor Judd made no specific recommendation as to what constitutes a scientific foundation for testing work, although as a general proposition his argument seemed decisive and compelling. The general impression gathered from his remarks seemed to be that he was referring to a more intense acquaintance with the principles and technique of experimental psychology, presumably in the sense of physiological psychology. This opinion was expressed by the speaker in the form of an assertion to the effect that mental testers were not giving enough attention to fundamental explanatory phases of psychological science. Now although there are few who would disagree with Professor Judd, as to his general thesis, the psychologists interested in mental test work can not apparently find any very close relation between the introspective experimental psychology and their particular problems.

Psychologists in general will be more than pleased, however, to observe the growing sentiment against the unchecked development of uncritical testing work. Dr. Yerkes, who spoke after Professor Judd in the symposium, was very positive in his remarks concerning the necessity for a critical analysis of mental testing. Dr. Yerkes referred to the fact that many testers were not psychologists at all, and were unfamiliar with psychological principles. As evidence of the precariousness of much of the testing work we might refer to the uncritical handling of such concepts as *superior* and *inferior* as applied to races in the papers on the comparative testing of American white and other subjects. The unscientific and probably unknown bias concerning the superiority of one's own race is responsible for much innocent shifting of emphasis, even when the reporter's own data are unequivocal in discouraging conclusions of superiority and inferiority.

Professor Dodge, who opened the discussion, following the presentation of the symposium papers, apparently stimulated by a suggestion made at another session that we substitute more Freudian material for the physiological psychology, made an impassioned plea for the conservation of the old materials in psychology. He connected this point with the problem of mental testing, in that he considered physiological psychology as a valuable basis for any application of psychology. From a strictly scientific standpoint the

problem of providing a critical explanatory basis for mental testing and other psychological application is not that of abiding by any tradition, as Professor Dodge's plea may be superficially interpreted, but rather to base psychological applications upon verified psychological hypotheses. And so it is significant to observe that the active work in experimental psychology is either concerned with problems in learning or with more definite determinations of the physical stimulating conditions of the person performing visual or auditory actions.

After listening to the various discussions at the several sessions, one is severely impressed by the fact that comparatively few psychologists are interested in bringing to the surface the theoretical implications of their experimental work. Thus, for example, it was possible for Professor Dodge to make his plea for traditional psychology, although his own experimental work has been for the most part directed toward achieving a better control over stimulating conditions to the end that an exact correlation could be made between such stimulating conditions and the reactions to them, and thus is not traditional at all. In other words, Professor Dodge does not take account of the differences between his own objective methods and the less valuable introspectionism. To the writer it seems that much of the difference between those who knowingly adhere to an objectivistic position and most of those who work in sensory experimental psychology, is that the former do, while the latter do not make plain to themselves that they are not working merely with manifestations, but that their data *are* the correlations which they record between definite forms of reactions and specific stimuli. This fact comes out clearly when we observe that, although the experimentalist does actually correlate stimuli and responses, he thinks of himself as studying something with which he is not dealing directly, namely, consciousness, and so the learning as well as the sensory experimentalists still believe that they must offer neural explanations for their results, although it seems a far cry from the actual learning act to a hypothetical synaptic connection. It is but natural, of course, that the nervous system should serve as the tangible parallel and representative of the invisible and elusive consciousness.

That psychologists in general are not very much interested in so-called theoretical problems is attested by the fact that little discussion followed the reading of the papers in the general session. The practical temper of the psychologists present was markedly evident since it required the stimulus of Dr. Cattell's remarks on the statistical treatment of data, in his paper on the "Validity of Votes," to invoke any comment at all. This paper, and Professor Thurston's paper on "What Should Be Taught in the Introductory Course," were the

only ones of the general session that aroused the assembled psychologists to expressive activity. Thurston's suggestion to introduce the beginning student to some phases of human behavior aside from the simple sensory reactions met with quite violent opposition. The comment following Thurston's paper indicated quite clearly that whatever may be the condition in our institutions concerning the gathering and testing of scientific information the work of teaching will be very well guarded indeed. Are American psychologists not interested in the development of new attitudes and in the interpretative correlation of psychological facts gathered in the various domains of observation? Possibly our teachers are merely depending upon the workers in other countries to initiate problems and to develop fundamental principles, for it is impossible to believe otherwise than that without such work there would soon be nothing to teach so far as principles are concerned. And who would be so imprudent as to deny the connection between psychological principles and the techniques which make it possible for us to have facts at all?

And yet the lack of interest in theoretical problems does not signify any profound absorption in experimental psychology. This fact appeared evident from the scanty attendance upon the experimental sessions, whereas the test meetings were crowded. The vogue of the metal-instrument psychology is not flourishing and for the reason that it is generally appreciated that even with metal instruments we are unable to obtain data concerning processes which are invisible and intangible. That is to say, psychologists are apparently unwilling to go on with the old problems set by the epistemological physiologists of a half century ago. But on the other hand, the lull in the development of experimental psychology is due no doubt to the failure to appreciate generally that the newer problems involving responses to stimuli can be advantageously cultivated with the aid of laboratory equipment. For by means of instruments we can certainly refine our observations of stimulating conditions and the reactions of the person. For the advantage of psychology we must note that complaint can only be made against the old parallelistic experimentation, and in truth there is to-day far too little work done in the psychological laboratory, although obviously human psychology must be largely a field science.

An irony of science it is, as we have formerly implied, that the very psychologists who hint at the lack of interest in experimental psychology, by referring to the lure of the spectacular and the attractiveness of popular applause, such as are met with by the tester and those who in general apply psychology, are themselves responsible for the backwardness of fundamental psychological experimentation. As we have indicated above, the failure to appreciate overtly

that experimental psychology is now working in the service of objective science and not still searching for a soul, and the neglect to proclaim this fact, is to the largest extent responsible for the failure of development in the experimental field. Signalized in this failure by the fact that laboratory work in psychology is quite strictly confined to the physiological sort and seldom includes a problem in the so-called higher mental processes. Although there must be great temptation in popular applause, it is only fair to say that psychologists desert the laboratory problems in order to turn to testing work, mainly because test statistics appear definite and certain. Unfortunately, however, the statistical statements are sometimes mistaken for actual psychological phenomena.

Of especial interest is it to note that the prevailing tone among psychologists who do discuss principles is objective, and the prevailing tendency is to couch discussion in psychobiological terms. Although there was visible in several papers an attempt to set one's own introspectionism against the behaviorism of others and *vice versa*, still there was so much reinterpretation of fact and principle as to allow more than a casual coming together upon the same ground. Especially noticeable was this tendency in a paper by Professor E. G. Boring on the "Common-Sense of the Stimulus-Error." This writer, while aligning himself with the introspectionists, made such an analysis of the facts of the cutaneous limen of duality, as to make his position practically indistinguishable from that of another writer, calling himself an objectivist. Professor Boring's analysis was directed against both the extreme introspectionists and the extreme behaviorists, in that it brought to light both the stimulus and the various stages in the response-situation. When such an analysis is made the difference in positions vanishes completely, although the names of the factors in a stimulus-response situation vary at the hands of the different writers. Here lies the value of actively attending to one's psychological principles, for not only does such an inventory lead to an understanding between different workers, but it also paves the way for much needed cooperation.

The keynote to current psychological thought and observation, as it appears to the writer, was sounded in Dr. Franz's presidential address. Dr. Franz entitled his paper "Cerebral-Mental Parallelism," and planned in it to indicate the uselessness of such a problem in psychological work. Dr. Franz's paper was the report of some cases which appeared rather definitely to indicate the lack of dependence of mental activity upon specific cortical centers, although of course there is a general correlation of such activity with the

cortex. The substance of the address may be summed up in two propositions. (1) The destruction of cortical tissue need not necessarily result in a destruction of mental activity. Individuals whose defective brains were studied after death had previously reported no loss of imagery. And (2) even when cortical lesions are correlated with mental disturbances the subject may experience a restoration of mental function without improvement of the cortical tissue. Dr. Franz believes that mental activity consists of a series of habits which the individual acquires. Now when some of these habits are destroyed or impaired they may be reconstituted, although the cortical lesions may remain. It is not difficult to see how this can occur, if we remember that an act can be constituted of various kinds of individual sensori-motor coordinations. In one case quoted by the speaker a surprising amount of cortical tissue was deteriorated in a person who for several years before death had enjoyed a renewal of much of his mental and intellectual activities. In the conclusion of his address Dr. Franz strongly urged the psychologists present to look favorably upon researches in physiological and neural psychology, since after all the facts seemed to indicate that psychological reactions involved the total operation of the person. To the writer, it seemed that no psychologist who heard the address could fail to be impressed with the importance of its contents for the psychophysiological problem. With the study and description of more cases such as were presented in Dr. Franz's paper and with the substantiation of Dr. Franz's results there must come a general acceptance of the unitary character of the psychological reaction, and a greater appreciation of the place of the nervous centers as coordinate members among a larger series of factors constituting a reaction. Dr. Franz's paper shows the way to a confirmation of the objective viewpoint in psychology and a revival of investigation in the fundamental principles of psychology. It certainly indicates the way to a study of the reflex and general sensorial processes from another standpoint than that of the old introspective psychology.

As a most fitting memorial to the late master-spirit of psychology, Wilhelm Wundt, the president of the association, called upon several members who had had contact with Professor Wundt, to speak of his life and work. Appropriately enough President Franz first called upon Dr. Cattell, who was an assistant in Wundt's laboratory and who is himself a brilliant figure in the annals of American psychology. Dr. Cattell spoke briefly of Wundt's personal life and then gave a very impressive picture of the profound and far reaching scholar. Professors Judd and Pintner spoke mainly of the man and teacher, emphasizing the humbleness and kindness of one of the world's foremost scientists when dealing with his students. Presi-

dent Scott of Northwestern spoke impressively of the prolonged interests which Wundt maintained in any subject in which he was interested at all. Thus he pointed out how Wundt continued to revise his early works until they reached as many as six editions. It was this prolonged and vital interest in whatever he undertook that Dr. Scott suggested as the factor which above all made for the greatness of the man. A number of the reminiscences clearly indicated the long contact which Professor Wundt maintained with the development of psychology as a science. Especially was this fact brought out by Dr. Cattell's statement that in his early contact with Wundt the latter was of the opinion that psychological experiments could only be performed with trained psychologists. Genuinely instructive was the reference made by one of the speakers to the wide range of Wundt's interests. Mention was made of his ponderous works in logic and ethics, which indeed emphasizes the contrast in scope of interest among scholars which academic custom dictates in our country and in Europe.

At the business meeting held on Wednesday afternoon the election was announced of Professor Margaret Floy Washburn, of Vassar College, as president of the American Psychological Association for the year 1921. Professor W. S. Hunter, of the University of Kansas, and Professor G. F. Arps, of Ohio State University, were elected to the council of the association. The association nominated Professor W. B. Pillsbury, of the University of Michigan, and Professor G. M. Stratton, of the University of California, to represent the Association in the National Research Council, while Professor E. K. Strong, Jr., of the Carnegie Institute of Technology, is to represent the American Psychological Association in the council of the American Association for the Advancement of Science. As officers for section I of the American Association for the Advancement of Science, the election was announced of Professor E. A. Bott, of Toronto University, as Vice-president; Professor F. N. Freeman, of the University of Chicago, as Secretary, and Professor L. W. Cole, of the University of Colorado, as chairman of the section committee. The Association elected 35 new members, increasing the membership to 428.

Incomplete is a record of the twenty-ninth meeting of the American Psychological Association without recording the names of two distinguished visitors at the sessions, one, the newly inducted successor of James and Münsterberg in Harvard's department of psychology, Professor William McDougall, who was welcomed to membership in the association, and the other, Professor G. A. Jaederholm, of Sweden.

J. R. KANTOR.

REVIEWS AND ABSTRACTS OF LITERATURE

Les Classiques de la Philosophie; publiés sous la direction de MM. VICTOR DELBOS, ANDRÉ LALANDE, XAVIER LÉON. Paris: Librairie Armand Colin.

VIII. BERKELEY: *Les Principes de la Connaissance Humaine*, traduction de Charles Renouvier. 1920. Pp. xii + 107.

IX. BERKELEY: *La Siris*, traduction de Georges Beaulavon et Dominique Parodi. 1920. Pp. viii + 159.

XII. MAINE DE BIRAN: *Mémoire sur les Perceptions Obscures, suivi de la discussion avec Royer-Collard et de trois notes inédites*. 1920. Pp. xii + 66.

Les Classiques de la Philosophie, of which three volumes have appeared, is a new series designed to put into the hands of French readers some of the philosophical classics which at present are unavailable to them. Descartes, Malebranche, Condillac, and Maine de Biran are the French authors represented in the announced list, and Hobbes, Berkeley, and Kant are those of whom translations are to appear. Since the series is intended merely to fill in gaps in the literature formerly accessible, some of the more important of the writings of those authors are not included. The price per volume is moderate, varying from three to five francs. The texts are edited critically, with carefully prepared footnotes on the various readings of the successive revisions of the works. Each volume is accompanied by a brief biography of the philosopher and an excellent bibliographical notice.

The volume of extracts from the still largely unpublished works of Maine de Biran gives us one of his main essays in psychology, and shows both his dependence upon Condillac and his departure from Condillac in the direction of mysticism. This essay is followed by four brief extracts from the manuscripts in the possession of the Institute of France, three never before published, in which extracts the attitude of Maine de Biran is shown towards four other psychological authors of his day, Royer-Collard, Bonstetten, Reid, and Dugald Stewart.

The two volumes of translations of Berkeley are interesting as evidence of the place held by Berkeley in French thought. It is startling to learn that, whereas *Siris* appeared in an earlier French translation as long ago as 1745, that is, but one year after its first publication in English, the *Principles* never was put into French until 1889. The 1889 translation is indeed the only translation ever made into French. It was made by Renouvier, and originally appeared in sections in five successive issues of *La Critique Philosophique*, of which Renouvier was at that time editor. This present

reprint of Renouvier's translation, into which only minor corrections have been introduced, is consequently the first time that that important and basic document in modern idealism has been available readily and in book form to those who read only French. It is perhaps hazardous to rest any conclusion upon these dates. But one may well wonder whether the order of translation was at all due to the congruity of the contents of the two works to the current tradition in French philosophy. Malebranche repudiated the doctrine of the *Principles* as foreign to his own thought; but he might not have objected so strongly to the *Siris* which appeared after his death and contained a more Platonic type of idealism. At least, whatever the explanation may be, the amazing facts are that, while the *Siris* was almost immediately translated, the *Principles* had to wait nearly two centuries for its first French translation and more than two centuries for the publication of that translation in book form. Considering the much greater importance of the *Principles*, one can not but wonder at these dates.

Students of Berkeley may well spend a few hours in reading Renouvier's French translation of the *Principles*. The effect produced is somewhat different from that obtained by going over the English original. This difference is due primarily to the use of *esprit* as the equivalent for *mind*. Descartes, with whom the modern psychological approach to metaphysics may be viewed as beginning, used *âme* about as frequently as *esprit*, both of which words are usually translated as *mind* by Haldane and Ross. Loeke, even though following Descartes in his proof of the existence of the self, avoided the use of the word *soul*, probably because *soul* had retained a theological connotation lacking to the French *âme*. Yet *mind* had for Locke the same substantial meaning as *âme* for Descartes: It was a realm of being, a receptacle in which ideas are deposited, an order of existence ontologically different from that of external objects. And Berkeley, even while denying the existence of Locke's external objects as meaningless, retained his supposition of the substantial self, which he more often called *mind* than *soul*. Hence when the French translation of Berkeley's *Principles* employs *esprit* as the equivalent for *mind*, Berkeley's metaphysics loses much of the sense of substantial and solid being, and becomes more delicate, more airy, more *spirituel*. That is, one passes from the French *âme* to the English *mind*, and then back to the French *esprit*, with the result that idealism is not so much insistence upon a kind of fundamental substance as revelation of the importance of meaning, of implication, of logical connections. In the French translation of *Siris*, the word *mind* is consistently translated as *intelligence*, which further adds to the changed emphasis in Berkeley; yet this work is

already in English somewhat Platonic, and makes such a rendering quite justifiable. The reader of these French translations of English classics can not but be impressed with the subtlety of language in the proper rendering of ideas; and he may wonder how often in the history of philosophy certain views have been adopted because of the words available for expression.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE, July-August, 1920. *La sensibilité, l'intelligence, et la volonté dans tous les faits psychologiques* (pp. 1-57): FR. PAULHAN.—"Sensibility, intelligence, and will are not . . . groups of facts, well delimited and separated from one another, any more than they are products of three distinct metaphysical faculties." They are to be found everywhere in the life of the spirit. *L'imagination pure et la vie esthétique* (pp. 58-87): J. SEGOND.—"Esthetic life represents in its own fashion and implies in its work a kind of mathematics of quality . . . a kind of physics of quality . . . a kind of history of pure quality." *Matière et société* (pp. 88-122): M. HALBWACHS.—An analysis in defense and clarification of the following definition of the working class: "the group of men who, in order to acquit themselves of their task, must turn themselves towards matter and pass out of society." *La Scolastique* (pp. 123-141): P. MASSON-OURSSEL.—Through comparative study of occidental and oriental scholasticism seeks to show that scholasticism is not merely an episode but a necessary phase of thought. Oriental scholasticism like the occidental form possesses three chief characters: "the exposition of thought under the form of commentary, the dialectic method, and the belief in the value of systematization, with this corollary: the position of the philosophical problem as a classification of categories." *Analyses et Comptes rendus*. Ettore Galli, *Nel regno del conoscere e del ragionare*: R. GUÉNON. Columbia University, *Studies in the History of Ideas*: P. M.-O. Irving Babbitt, *Rousseau and Romanticism*: P. MASSON-OURSSEL. E. Seillière, *Les origines romanesques de la morale et de la politique romantiques*: P. MASSON-OURSSEL. Th. Ziehen, *Lehrbuch der Logik auf positivis-tischer Grundlage, mit Beruecksichtigung der Geschichte der Logik*: P. MASSON-OURSSEL. Léon Daudet, *Le monde des images*: FR. PAULHAN. J. Varendonck, *La psychologie du témoignage*: P. MASSON-OURSSEL. J. Varendonck, *Recherches sur les sociétés d'enfants*: E. CRAMAUSSEL. Pierre Dufrenne, *La réforme de l'école primaire*: E. CRAMAUSSEL. *Revue des périodiques*.

- Durant, Drake, Arthur O. Lovejoy, James Bissett Pratt, Arthur K. Rogers, George Santayana, Roy Wood Sellars, C. A. Strong. *Essays in Critical Realism: A Coöperative Study of the Problem of Knowledge.* London: Macmillan & Co. 1920. Pp. vii + 244.
- Foster, George Burman. *Christianity in Its Modern Expression.* (Edited by Douglas Clyde Macintosh.) New York: The Macmillan Co. 1921. Pp. xiii + 279. \$3.75.
- Hollander, Bernard. *In Search of the Soul, and the Mechanism of Thought, Emotion and Conduct: A Treatise in Two Volumes containing a Brief but Comprehensive History of the Philosophical Speculations and Scientific Researches from Ancient Times to the Present Day, as well as an Original Attempt to Account for the Mind and Character of Man and Establish the Principles of a Science of Ethology.* London: Kegan Paul, Trench, Trubner, & Co. New York: E. P. Dutton. No date. Pp. 516, 361. \$20 per set.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held on February 7, Lord Haldane, vice-president, in the chair. Professor R. F. A. Hoernlé read a paper on "A Plea for a Phenomenology of Meaning." The task of a phenomenology of meaning is to collect and examine all types of empirical situations in which signs function and meaning is present. This is the more necessary as all the higher activities and all control of social organizations depend on the use of signs. Yet current theories are fragmentary and one-sided. This is shown by an examination of the theories of F. C. S. Schiller, B. Russell, Lady Welby, C. S. Peirce, G. F. Stout, A. Meinong, and E. Husserl. A clue to a completer theory may perhaps be found in the distinction between the *indicative* and the *expressive* function of signs. We have the pure indicative function when the existence of *A* enables us to infer the existence (or non-existence) of *B*. We have the pure expressive function when an agent makes, or utters, signs. The two functions are curiously interlaced in intersubjective intercourse. The distinction, however, requires to be further tested by application to various kinds of non-verbal signs, to symbolic actions, and especially to the functions of sounds in music.

THE Department of Psychology of the University of Oregon announces that it has met all requirements established by the Faculty of the University, concerning library facilities, laboratory equipment, courses and scholarship, and is now authorized to offer work for the degree of doctor of philosophy.

THE JOURNAL OF PHILOSOPHY

URBAN'S AXIOLOGICAL SYSTEM

I

THE recent essays on value by Professor W. M. Urban¹ give one of the most important contemporary discussions in this field. Their author is preeminent in America as a philosopher who has given both prolonged and intensive investigation to the theory of value. At least three careful criticisms of these articles have been published,² and Urban has answered two of the criticisms.³ Nevertheless there seems to be need of another criticism. The previous criticisms have been mainly expressions of disagreement concerning one detail or another, but they have given little attention to Urban's system as a unity. The present paper will attempt to envisage Urban's system as a system, and will show that the questionable doctrines in his writings follow logically⁴ from one erroneous assumption.

The present writer is in agreement with Urban on the two most important problems in the theory of value. We both believe that value is irreducible to such existential categories as pleasure, satisfaction, or causality. We both believe that value is "objective in the more than social sense"; that is, we believe that the judgment about value gives us objective information.⁵ These two points of agreement are so fundamental that other points of disagreement might seem relatively unimportant. There is one problem, however, which leads to very complicated mistakes if it is incorrectly treated. This is the logical problem as to what is the fundamental value category.⁶ Urban thinks that "ought" is the fundamental value cate-

¹ "Value and Existence," this JOURNAL, 13: 449-465. "Knowledge of Value and the Value-Judgment," this JOURNAL, 13: 673-687. "Ontological Problems of Value," this JOURNAL, 14: 309-327.

² R. B. Perry, this JOURNAL, 14: 169-181. D. W. Fisher, this JOURNAL, 14: 570-582. F. C. Bartlett, *Proceedings of the Aristotelian Society*, 17: 117-138.

³ This JOURNAL, 15: 393-405.

⁴ Professor Urban is the best judge whether these doctrines were consciously inferred from the one erroneous assumption. Here we are concerned only with the logical implications.

⁵ This JOURNAL, 13: 683 and 455-460; also 12: 105-106.

⁶ This may seem a mere technicality, but, as the following pages will show, a mistake on this point is extraordinarily misleading. This problem is obviously not "just a matter of preference."

gory. This the present writer believes to be false. From this false assumption follow numerous errors in the structure of Urban's "axiology." In the following pages an attempt will be made to show the connection between these errors and the doctrine that "ought" is fundamental. It will be argued that there is error both in the doctrine that "ought" is fundamental and in the doctrines which are suggested thereby. Then it will be shown that the main truths which Urban sees can be maintained by taking betterness as the fundamental value category, and that in this way the difficulties and errors of Urban's system of "axiology" can be abolished.

II

What is the fundamental value category or universal? Is there only one fundamental category or are there more than one? Most philosophers seem to have assumed rather than argued their answers to these questions. English writers have usually taken the notions of intrinsic goodness and intrinsic badness as fundamental. Sidgwick, despite some variation of opinion in the different editions of the *Methods of Ethics*, took "ought" as fundamental. So Urban takes "ought," or perhaps "ought" and "ought not," as fundamental.⁷ The present writer has argued elsewhere that neither goodness nor oughtness can be taken as fundamental, and that the fundamental value universal is intrinsic betterness.⁸ A detailed examination of Urban's system of "axiology" will show the many good and sufficient reasons against taking "ought" as fundamental. In fact, one of the chief merits of Urban's work is that it should for all time show the difficulties and errors involved in the assumption that "ought" is fundamental.

When ought is used as a value notion,⁹ it may be used in a narrow meaning or it may be used in a wide meaning. Let us consider the narrow meaning first. This is the strictly moral or ethical meaning. As an ethical category ought has the following characteristics.

1. Ought applies only to what is practically possible. "The good is much wider than what we ought to try to produce. There is no reason to doubt that some of the lost tragedies of Æschylus

⁷ Sometimes he speaks of "ought to be" as the fundamental (this JOURNAL, 13: 463 and 681). Elsewhere he mentions both "ought" and "ought not" and once he seems to say that "the latter is just as fundamental as the former." This seems to refer to positive and negative value as equally fundamental (this JOURNAL, 13: 675).

⁸ This JOURNAL, 16: 96-104.

⁹ Of course the purely hypothetical use of ought is not axiological. On this point Urban (15: 401-402) is correct as against Perry (14: 179-180).

were good, but we ought not to try to rewrite them, because we should certainly fail. What we ought to do, in fact, is limited by our powers and opportunities, whereas the good is subject to no such limitation.'¹⁰

2. Ought does not assert either intrinsic value or extrinsic value of its subject, but a combination of both. Whether an action ought to be done depends on whether the totality of that act with its motives and consequences is intrinsically better than the possible alternative totalities.¹¹ Thus ought indicates what may be called total value, that is, the value of the total situation in which the act occurs.

3. Ought is used in at least three senses, corresponding to the three different but similar meanings of right. It has a subjective usage, a probable or reasonable usage, and an objective or absolute usage. In other words, a complete account of ought must consider the different limitations and extensions of human knowledge in their effect upon the determination of ought.¹²

4. Ought differs from right in that ought implies uniqueness of what is morally permissible, whereas right implies that in the given situation some other act may be equally valuable and therefore also right. Several acts may be as good as possible and therefore right, but if an act ought to be done it is the single best possibility.¹³

These four characteristics of ought have determined many of Urban's doctrines. As we shall see, Urban expressly denies that he is using ought in the narrow ethical sense. But it will be apparent that the characteristics of the ethical sense of ought have influenced him nevertheless.

In the wide sense of ought, it is used in such expressions as "ought to be." It is my contention that this meaning is simply an unfortunately disguised and confusing equivalent for goodness and betterness. This usage has been rather widespread, and occurs even in such writers as G. E. Moore and Bertrand Russell.¹⁴ "Ought to be on its own account" is used as the equivalent of intrinsic goodness (or intrinsic positive value, as Urban phrases it). "Ought not to be on its own account" is used for intrinsic badness (or intrinsic negative value). Now the present writer has shown that the notions of intrinsic goodness and badness (or positive and nega-

¹⁰ B. Russell, *Philosophical Essays*, page 6.

¹¹ C. D. Broad, "The Doctrine of Consequences in Ethics," *The International Journal of Ethics*, April, 1914.

¹² C. D. Broad, same article; also B. Russell, *Philosophical Essays*, pages 16-30.

¹³ G. E. Moore, *Ethics*, pages 31-38.

¹⁴ G. E. Moore, *Principia Ethica*, page 17; B. Russell, *Philosophical Essays*, pages 5-6.

tive value) are complexes of intrinsic betterness or worseness.¹⁵ If X is intrinsically good or has intrinsic positive value, then by definition the being or existence of X is intrinsically better than the non-being or non-existence of X . If X ought to be on its own account, X ought to-be rather than not-to-be. But this means that the being of X is intrinsically better than the non-being of X . So "ought to be" is a complex of betterness. The definitions of intrinsic badness or negative value have been shown to be the exact logical converses of the above definitions.

In his first article,¹⁶ Urban confines himself to the phrases "ought to be" and "ought not to be." But in the two later articles¹⁷ the phrase "ought rather" occurs. What does "ought rather" mean? It is clearly an expression for comparative value. When we are speaking of intrinsic value, the usual comparative notion is "better." How does "ought rather" differ from betterness? Urban nowhere suggests any difference, and it seems clear that "ought rather" means better. The only possible difference that one could suggest is that "ought rather" suggests the narrow ethical meaning, which Urban has explicitly ruled out.

We have now examined both the narrow ethical use of ought and the two wide uses in "ought to be" and "ought rather." All of these notions have been found to be analyzable into disguised forms of betterness or into complexes depending on betterness. So it is clear that our fundamental value notion should be betterness rather than oughtness.

III

If one takes ought as the fundamental value notion, one must try to meet the general arguments listed above. In addition to these troubles, there are some seven confusions or fallacies in the theory of value, all of which are caused by the treatment of ought as fundamental.

1. Ought encourages the blending or confusing of intrinsic and extrinsic values. Hence the fallacy of assuming that what is true of extrinsic value is true of intrinsic value.

2. If one asks what kinds of objects or entities are in the scale of intrinsic value, that is a plain and specific question. But if one's value notion tends to confuse intrinsic value with extrinsic, instrumental, or contributory values, then one may suppose that every object or entity has *some* value. Hence one falsely concludes that every object or entity is in the scale of *intrinsic* value.

¹⁵ This JOURNAL, 16: 98-99. In those pages and in the present article, "good" is used to mean what Urban calls intrinsic positive value.

¹⁶ This JOURNAL, 13: 456, 457, 461, 462.

¹⁷ This JOURNAL, 13: 681; also 15: 396.

3. In the ethical sense, what ought to be done has nothing equally good. In other words, oughtness can not be asserted of whatever has an alternative equal in value. Hence one may falsely conclude that no two objects or entities are or can be equal in value.

4. In a specific situation, if action *X* ought to be done, then each of the other alternatives of action *X* ought not to be done. There are no actions *between* ought and ought not. So ought not is the contradictory of ought, but only within the field or universe of discourse of that specific situation. Hence one may falsely conclude that every object or entity which is in the value scale has either intrinsic goodness (positive value) or intrinsic badness (negative value). In this case there would be no indifferent entities in the scale of intrinsic value between the goods and the bads. In other words there would be no objects or entities which are intrinsically better than the bads but intrinsically worse than the goods.

5. Ought is a rather complex term depending on intrinsic betterness. Such "value qualities" as beauty also depend on intrinsic betterness, as we shall see later. If both ought and beauty are analyzed into their dependence on betterness, one will see the distinctness but co-ordinateness of the two notions. If ought is left unanalyzed, the connection between ought and beauty can be only obscured.

6. If ought is taken as fundamental, its relational characteristics will be recognized sometimes, forgotten sometimes. If ought is merely a disguise for betterness, the disguise can do no good but much harm.

7. If ought is taken as fundamental, one imagines the old dichotomy of the *Is* and the *Ought*. If one does not reduce the *Ought* to the *Is*, then one must suppose that there is some mysterious relation between the *Is* and the *Ought*.

Let us consider these seven difficulties as they manifest themselves in Urban's writings.

IV

If one takes ought as fundamental, one may say that the meaning is "ought to be on its own account." This meaning, as we have seen, is the same as intrinsic goodness or positive value. But in the vast majority of its uses, ought refers essentially to the value of a further end or a larger totality of which it is an instrument or a part. In its strict moral sense ought refers to the value an act has in relation to the total situation of which it is a part.¹⁸ Consequently the use of ought gives a constant temptation to forget that intrinsic value is the logical basis of the study of value.

¹⁸ For proof, see the above mentioned article by C. D. Broad.

As we might expect, Urban first limits his discussion to intrinsic value or oughtness, but subsequently he seems to forget this distinction in his main arguments. "It need scarcely be said that an ultimate definition of value is concerned only with intrinsic value, all extrinsic or instrumental values going back ultimately to concepts of intrinsic value."¹⁹ Later Urban explains that the relational characteristics of "ought rather" do not do away with the intrinsic nature of value. In intrinsic value we shut out the relation of means to ends but not the relation of more or less.²⁰ But when Urban argues about value he seems to forget all about the qualification of value as intrinsic. Thus in one passage²¹ he asserts that wherever there is interest there is value. Now clearly this is not true of intrinsic value. There are many things which we are interested in only as means or instruments. So if interest is the test of value, these things have only extrinsic value. Yet Urban uses this argument to prove that all objects or entities have a place on the scale of intrinsic²² value. This fallacy was caused by the confusion of extrinsic values with intrinsic values, and this confusion seems to have been caused by the use of ought as fundamental.²³

V

From the confusion of intrinsic and extrinsic values, there follows logically what we may call Urban's Law of Universality. This is the doctrine that "every object has some place in the world of value." "Every object falls under the category of value just as necessarily as under the category of being."²⁴ In other words, no object or entity (whether existent or not) is "value-free."

We must distinguish two possible interpretations of this law. In the light of its context and the use which Urban makes of it, it seems to mean that every object has a place in the scale of *intrinsic* value.²⁵ On this interpretation the law would be very important, if true. But we shall see that it is not true. On the other interpretation, Urban may mean merely that every object has *some*

¹⁹ This JOURNAL, 13: 452.

²⁰ This JOURNAL, 13: 681.

²¹ This JOURNAL, 13: 675-676.

²² He does not say on this page whether it is intrinsic or extrinsic value. But the context clearly requires the assumption that he is proving something about intrinsic value.

²³ Another instance of the confusion of intrinsic and extrinsic values is found in the remark that "we can deduce the value of an object from its nature as little as we can its existence" (13: 674).

²⁴ This JOURNAL, 13: 685 and 675-677.

²⁵ This JOURNAL, 13: 452-460 and 681.

value. In this case, the law would perhaps be true, but too unimportant for the use which Urban makes of it. Urban nowhere explicitly states which interpretation should be followed, but we may reject this second interpretation for the following reason. To say that an object has *some* value may mean either that the object is itself in the scale of intrinsic value or it may mean that the object has certain relations to something else which is in the scale of intrinsic value. If an object has no value intrinsically but is a cause or a part of something which is in the scale of intrinsic value, then the object may be called extrinsically valuable. I know of no proof that every object is actually a cause or a part of an intrinsic value, but clearly every object might be such. But this is unimportant. It is surely a trivial assertion to say that every object is or might be either in the scale of intrinsic value or among the causes or parts of intrinsic values. What we wish to learn from a study of value is knowledge concerning what objects are in the scale of intrinsic value and what are their comparative values. So we are forced to conclude that Urban means not his second interpretation, but the first one to the effect that every object is in the scale of intrinsic value.

Urban's proof for this law of universality is as follows:²⁶ "All objects, as objects, are of interest either actually or potentially, and wherever there is interest there is value." Several objections might be made to this argument, but the most important objection is as follows: If we grant that interest proves value,²⁷ what sort of value does any sort of interest prove? Does it prove intrinsic value? It seems that there are many objects which we are interested in only as means, instruments, or parts. So this type of interest can not prove intrinsic value but only extrinsic value. If we were interested in objects only on their own account and never on account of their results, the present objection would be out of place. To argue from the assumed universality of interest of any sort to the universality of intrinsic value is clearly fallacious.

I know of no valid proof that every object is in the scale of intrinsic value. This is no place to argue the very difficult problem concerning the inclusions and exclusions of the scale of intrinsic value, but let us consider a few examples. Urban likes to dwell on Meinong's "round square," an impossible object but one to which Urban attributes value.²⁸ Probably few people have attributed value to round squares. Of course the mental process of thinking about

²⁶ This JOURNAL, 13: 675-676.

²⁷ Surely Urban should give some proof for this assumption, since he does not agree with Perry that value is to be defined in relation to interest.

²⁸ This JOURNAL, 13: 676 and 679.

round squares did have a certain extrinsic value (positive or negative) in the formation of the theories of Meinong and Urban. But do round squares themselves have any intrinsic value? The present writer must confess his inability to think of them as being intrinsically better or worse than anything. Then let us consider the rather numerous numbers. Does every number have a place in the scale of intrinsic value? Does 12 have intrinsic positive value and does 13 have intrinsic negative value? It would be unfair to ask Urban to give the relative value of all numbers, but surely he should explain the value of the more frequent numbers. Or shall we not say that the scale of intrinsic value does not include numbers among its members? So there are some objects of thought which are not in the scale of intrinsic value, and Urban's law is false.

VI

What may be called the law of inequality is stated by Urban in the following terms: "Of any two values one must be greater than the other."²⁰ "When any two value objects are brought into relation, one must be higher than the other."³⁰ Urban seems to think that this follows logically from the fact that values form a "system of higher and lower."³¹ But of course the logic of relations and series does not warrant any such inference. There are "series of levels" in which the members of any given "level" are in some specified sense equal or equivalent to one another.³² In other series this is not the case. So it is a purely empirical question to be investigated whether or not the value scale is a series of levels. Consequently Urban's supposed law is entirely without proof.

Apparently Urban was led into this theory by the following facts. In dealing with the moral use of ought, we say that *X* ought to be done only if the doing of *X* stands out as better than every alternative. If another alternative is just as good, we say that either is *right*.³³ So if an act ought to be done, no other act can be equally good. On the supposition that ought is the fundamental value notion, the law of inequality would perhaps be plausible.³⁴

Empirically it must be admitted that many objects *seem* to be

²⁰ This JOURNAL, 13: 677-678.

³⁰ This JOURNAL, 13: 677.

³¹ This JOURNAL, 13: 677.

³² See, for example, J. Royce in the *Encyclopedia of the Philosophical Sciences*, Vol. I., pages 118-119.

³³ G. E. Moore, *Ethics*, pages 31-38.

³⁴ G. E. Moore, *Ethics*, pages 35-36. Even if ought were fundamental, it might still be the case that two actions which ought not to be done were equally objectionable, and so equal in value.

equally valuable. It would require strong proof to offset this seeming. No proof has been given.³⁵

VII

There is another doctrine which we may call the law of duality. This is stated by Urban as part of his law of universality, but it is really separate in meaning. According to this theory every object in the world of value is of positive or negative value. There is nothing in between the goods or positive values and the bads or negative values.³⁶ Let us restate this law. We may say that there is no entity which is intrinsically better than every intrinsic bad, but intrinsically worse than every intrinsic good. Is this law true?

Urban himself gives no proof for this law. But it would follow logically from the following facts about ought. Among the alternatives in a moral choice, there are none which come *between* the act which ought to be done and the acts which ought not to be done. Inside the group of those alternatives, whatever is not *what ought to be done* is *what ought not to be done*. So here a law of duality does hold. But this does not prove that intrinsic positive value or goodness is the contradictory of negative value or badness.³⁷ Other proof there is none.

Urban's law of duality might be proved by his law of inequality. But, as we have seen this law of inequality is false. An entity is indifferent, in the sense of being between the intrinsic goods and the bads, if its being or existence is intrinsically equal in value to its non-being or non-existence. This would mean that its being is neither better nor worse intrinsically than its non-being.³⁸ But if nothing is equal in value to anything else, then nothing could be indifferent in this sense. The notion of indifference within the value scale is defined by value equality, so if there were no value equality there would be no indifference in this sense. Since we have seen that there is value equality, there may be indifference within the value scale.

It seems clear that bare negativity, non-being, or non-existence (however these categories are explained) can never involve either intrinsic goodness or intrinsic badness. Yet merely negative facts seem to be on the scale of intrinsic value. Concerning an intrinsic evil we say that its non-existence would be better intrinsically than

³⁵ Note the reference to "equivalence" in Urban's earlier *Valuation*, page 142.

³⁶ This JOURNAL, 13: 675.

³⁷ As Fisher has pointed out (this JOURNAL, 14: 574), there is a plain inconsistency in Urban's remarks on this point.

³⁸ This JOURNAL, 16: 98-99.

its existence. Its non-existence is neither good nor bad intrinsically, but is between the goods and the bads. So the law of duality can not be true.³⁹

VIII

If ought is left unanalyzed and "fundamental," then its relation to the other value categories is seriously obscured. As an example, let us consider beauty and its relation to ought. Now ought depends on betterness but on total betterness. Ought can be determined only when reflection has investigated the consequences of an act and reckoned with all of the ascertainable values. Beauty is a category not involving total values in this way. If the contemplation of a work of art has intrinsic value, we may say that the work of art is beautiful irrespective of the moral, economic, or other consequences involved. So a work of art may be beautiful even though it may be condemned as a work which ought not to be produced or contemplated. The esthetic judgment deals with the intrinsic value of a somewhat isolated experience and it neglects the extrinsic or instrumental values which may be involved. Thus both ought and beauty depend on intrinsic betterness but in quite different ways.⁴⁰ The difference is that ought is based on a wider survey of values. Hence it may be argued that if ought and beauty conflict (that is, if a beautiful object ought not to be produced or contemplated), beauty must give way as the narrower concept.

Urban misunderstands this complicated relationship, and says that beauty is a subjective "quality" which is felt, whereas ought is something objectively judged.⁴¹ But there is an esthetic judgment as well as an esthetic feeling, and there is a feeling of oughtness as well as a judgment of oughtness. Urban seems to treat ought as being on an entirely different plane from beauty. Beauty, he thinks, is a subjective value quality, whereas ought is objective value. But since both ought and beauty are analyzable (though in different

³⁹ Urban's remarks on the value of non-existence are partially based on a natural misunderstanding of a sentence by the present writer in a one page abstract (this JOURNAL, 12: 105-106). I had said: "All facts about non-existence are equal in value. (Equal in value means neither better nor worse.)" Urban quotes this once in a slightly altered form (13: 678). Then he changes it entirely in the quotation: "All facts about non-existence are neither better nor worse" (13: 679). My own doctrine is: "all of the negative or non-existential facts in the value scale are indifferent or neither good nor bad" intrinsically. (This JOURNAL, 16: 98.) Equal in value may be defined to mean neither better nor worse *than one another*. Obviously one would not assert value equality of what is entirely outside the scale of value.

⁴⁰ For a very brief discussion, see this JOURNAL, 16: 102-103.

⁴¹ This JOURNAL, 13: 456.

ways) into complexes of intrinsic betterness, it is clear that no such difference of kind can be found between them. Urban has been misled here by his assumption that ought is a fundamental and unanalyzable value category.

IX

In his first article Urban speaks only of "ought to be," but in the two later articles he speaks of "ought rather." Now "ought rather" is clearly a relation. If value is a relation, surely the notion of betterness is the clearest and simplest to use. The conception of intrinsic betterness is easily distinguished from extrinsic values, and none of the "moral" limitations of ought are involved. If one uses better as fundamental,⁴² one will always be conscious of the relational character of value, and one can study and analyze value according to the facts of the logic of relations. As far as "ought rather" differs from better, it differs only to disguise and confuse the facts.⁴³

There are times when Urban's language almost makes him agree that betterness and not ought is the fundamental value notion. He says explicitly that *ought is deduced from betterness*.⁴⁴ But clearly one does not deduce ought from better, unless better is more fundamental.

Urban even says in one place⁴⁵ that "the relation 'better than' can be seen to lie in the nature of value as such." Yet this admission is never followed up. That better is fundamental is half seen, but there is little realization as yet of the consequences of this admission.

X

Urban analyzes the conceptions of existence and reality. But since he takes ought as fundamental and unanalyzed, he becomes entangled in the old mystifying opposition between the Is and the Ought. To summarize and criticize all of the debatable points in Urban's rather lengthy third article⁴⁶ would be impossible here. Urban himself recognizes the difficulties and "antinomies" in his discussion. So we may confine ourselves to a short positive discussion of those points on which light is thrown by the theory that value is a relation.

If value is not subjective, then value is in some sense real. The feeling of value implies the feeling of the reality of the value cate-

⁴² Or the notion of "worse." See this JOURNAL, 16: 97.

⁴³ As the previous pages should have shown. Incidentally it may be mentioned that ought is a one-many relation, whereas better is a many-many relation.

⁴⁴ This JOURNAL, 13: 681; 14: 315, note 19; 15: 396.

⁴⁵ This JOURNAL, 13: 681.

⁴⁶ This JOURNAL, 14: 309-327.

gory.⁴⁷ About this real or objective value there may be true knowledge in what may be called value judgments. These value judgments will be true or false in the same general way that other judgments are true or false. But they will differ in that they refer to the value relation rather than to such relations as time or causality. They may also differ in their psychological antecedents from such judgments as those of sense-perception. But they are not to be contrasted with "truth-judgments."

The complete object of a judgment, may, following Meinong, be called an "objective."⁴⁸ Then a judgment about value will refer to an objective, which includes what we mean by value. But this calls for analysis. When we judge that *X* is intrinsically better than *Y*, *X* and *Y* may be called value-objects, but by value we mean the relation of betterness which holds between *X* and *Y*. Value is a relation, not an objective.⁴⁹ Relations are real, and the value relation betterness is real. I see nothing mystifying in this.

If the value relation is real, must the two terms of the relation be actual existents? Clearly not, as Urban admits.⁵⁰ Doubtless the judgment of value arises in the comparison of actual experience, but it is soon extended to objects of thought and imagination. It is even extended to mutually exclusive alternatives of action, only one of which can be actualized. We may properly value what never actually exists, but of course our valuation is based upon our experiences of actualities. So the elements of what we value must have been actually experienced. But the specific construction may be new. Thus in a Utopia, the total condition valued may never exist in the past, present, or future, but the elements used in describing the Utopia are drawn from experiences of actual existents.

If ought is taken as fundamental, one might assume that value implies possibility, because the moral use of ought implies that the action which ought to be done is possible. But this would be fallacious. It is certainly clear that both of two valued objects may not be "compossible."

Since judgments about value refer to the real relation of betterness, we can have no complete account of realities (or Reality, if you please) without an account of value.

As to the value of the whole of reality, there are some preliminary questions? Can we make judgments about the whole of reality? How would such judgments deal with the difficulties at the basis of

⁴⁷ See Urban's *Valuation*, page 22.

⁴⁸ The word "objective" is unfortunate as suggesting the subjective-objective controversy.

⁴⁹ Urban seems almost to admit this, this JOURNAL, 13: 681.

⁵⁰ This JOURNAL, 13: 463, and 14: 319.

Russell's theory of logical types?⁵¹ There is no reason why value may not be ascribed to facts about totalities, but only about totalities which are capable of being judged.⁵²

As to "degree of reality," anyone can use the word reality in a eulogistic sense. The question to be asked is whether or not such usage leads to clear or confused thinking. Urban seems to think that this usage is necessitated by the law of universality, that every object is in the value scale. But we have seen that this law is false. It must be insisted also that logical importance is not the same as intrinsic value. These two points undermine Urban's proofs.⁵³ I doubt if we know enough about either metaphysics or "axiology" to be able to give a trustworthy discussion at present.

XI

With this very fragmentary criticism of Urban's doctrine of reality and value, the present set of criticisms is ended. We have seen that the central flaw in Urban's system of value is the assumption that ought is the fundamental value category. We have seen the numerous errors and fallacies which almost inevitably follow from this false assumption. But to make these criticisms must not be taken as a condemnation of Urban's work. Not only is Urban correct in his fundamental doctrines of the indefinability and reality of value. The system he has worked out is a remarkable help in showing exactly what are all the main consequences for "axiology" of the attempt to take ought as fundamental. The clear thinking out of one point of view, even though it contains an element of error, is more helpful to the advancement of knowledge than the usual doctrines which are not thoroughly thought through.

If Urban were to accept what might be called "meliorism," the doctrine that intrinsic betterness is the fundamental value category, his entire system would need going over. Corrections in many places would be required. But the main outlines of his work would remain, only bettered.

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⁵¹ A. N. Whitehead and B. Russell, *Principia Mathematica*, Vol. I., Ch. 2.

⁵² Note the strange opposition between Urban and Fisher, this JOURNAL, 13: 454 and 14: 575.

⁵³ This JOURNAL, 14: 326 and 327.

SOME PHILOSOPHIC ASPECTS OF SCIENTIFIC RELATIVITY

IT is perhaps not altogether premature to attempt to outline some of the essentially philosophic aspects of the recent development of the physical theory of relativity, if only because of the extravagances in which both popular and scientific "philosophy" have indulged. Perhaps not since the Darwinian controversy have concepts so fundamental been subjected to criticism; and the reason for this is simple. All the basal elements of the purely scientific theory itself are identical with many of the central concepts of philosophy—space, time, simultaneity, motion; even the mere name itself, relativity, is sufficient to arouse the pugnacious instincts of every true philosopher. Confusion therefore is more than usually possible, and thinkers may again, as was the case with evolution, be drawn away in a vain pursuit of philosophic jack-o'-lanterns. The moral (if I may venture to suggest it) is obvious; there should be a much closer connection between philosophy and science. It is true that every step in advance makes this more difficult to achieve; but as things are at present, the results of scientific research far too often fall like a bomb into the philosophic camp, with dire results to its traditional serenity; as for the philosophies of scientists themselves, perhaps the less said the better. But Philosophy, it must be remembered, holds an inalienable lien on the whole of experience; which in its scientific aspects is fast becoming exceedingly complex.

As I have already suggested, the term "relativity" itself accounts for much of the prevailing confusion. It is absolutely essential to disregard, at all events to begin with, its long and involved philosophic history, and to use it, completely devoid of philosophic import, as it was employed originally with a purely scientific and quite definite meaning, which implied nothing more than that the observation of phenomena is determined only by the observer's velocity relatively to the observed system.¹ Even its widest later applications are concerned only with the relative velocities of systems and observers, and with the mathematical and other scientific (but not philosophic) implications of these. It is therefore vitally important to bear in mind that the theory has, to begin with, no bearing whatever upon the problems of the relativity of knowledge, of knower and known, or on the subjectivity, in the Kantian or any later sense, of Time and Space. So far as these questions are concerned, matters stand as they did previously; no school of thought is entitled (so

¹ Campbell, *Modern Electrical Theory*, p. 381. Cunningham states this in terms of objects and ethereal media *Principle of Relativity*, p. 155.

far) to find in the scientific results any support, much less any conclusive proof, for its particular contentions; philosophically the formation is "as you were."

A second source of obscurity has lain in the apparent self-contradictory character of the theory; a defect, however, which is wholly due to omissions in its exposition, and which is removed entirely when all the facts are considered. Simultaneity, it is stated, has lost its meaning; one and the same event, again, may be both before, and after, another event; even objective² space may be "warped." The illogicality of these statements, in this form, is evident; but it is not peculiar to them alone, for every partial truth, expressed without its necessary qualifications, is similarly illogical. But if we say, with greater accuracy and completeness, that events simultaneous for one observer are not therefore necessarily so for another; or that what is "before" for *A* may (or must) be "after" for *B*, or even for *A* himself when certain conditions of his observation change; or that an imaginary space-time continuum may be heterogeneous; or that "motional phenomena become timeless phenomena in four-dimensional space";³ we merely generalize a principle which is frequently a matter of ordinary simple experience, as when the flash and report of an explosion are simultaneous for one observer but not for another, or when a spatial figure expresses a temporal process.

But the delicate phenomena and refined calculations which are involved are both so remote from ordinary intelligence that it is exceedingly difficult to form any conception of the actual concrete bearings of the theory; it is plainly impossible to construct any image of the velocity of light or the size of an electron; but these are after all obstacles rather of practical experience than of pure theory; and if the new principles could be applied to familiar occurrences the greater part of their mystery would disappear.

Such an application becomes possible if we imagine two observers who have always been completely blind, and whose knowledge of distant phenomena depends wholly therefore on their sense of hearing. Consider, *e.g.*, simultaneity and synchronism, and the fact that a clock which is at rest relatively to a normal observer and is ticking uniformly, will, if it moves continuously away at a fixed speed, thereupon tick for him at a slower rate, if he remains at rest and all other conditions are unchanged; in other words, if the clock while at rest (relatively to him) kept exact time with his watch, it would, while moving away, lose time as compared with his watch; but the velocity of light naturally makes the actual observation of this impossible.

² Objective, *i.e.*, as content of experience; but I should not myself question the wider "realist" position.

³ Cunningham, *op. cit.*, p. 191.

But instead of clock and watch, let us take two automatic guns firing simultaneously, and with exactly the same intervals between the reports when they are close together and also close to an observer. If now one gun remains in position still close to the observer, while the other moves quickly away, it is obvious that the simultaneity will cease, and a longer and longer interval will elapse between the reports from the near gun, and the corresponding⁴ reports from the distant moving gun; which means that the rate at which the observer heard the moving gun fire would alter; it would lengthen as compared with that of the fixed gun, which latter would thus come to fire (apparently) at a faster rate than its moving fellow. On the other hand if a second observer accompanied the moving gun his experience would be directly converse; to him the stationary gun would appear to fire more slowly than his own; and again if both observers with their respective guns were moving in varying directions and with varying velocities relative to each other, the comparative time-keeping of their guns would vary correspondingly.

Thus the two guns with their audible reports take the place of the two timepieces with their visible dials; and here it may be argued by the philosophically minded that the audible phenomena are mere "appearance" and that the guns "really" still retain their original synchronous firing. Now in one sense this argument is quite valid; but in another it is not; for its validity depends on all the conditions which ultimately determine human experience. To the normal observer, who can both hear and see, this contrast between reality and appearance is both inevitable and justifiable. But we have supposed our two observers to be congenitally blind, to lack therefore all experience of light phenomena and visible motion, and to derive all their knowledge of distant phenomena solely from the sense of hearing. For them therefore there can arise here no distinction between reality and appearance; what is heard is "real," and the audible differences in the firing rates of the two guns actual and ultimate.

Now these differences (audible, but to the blind observers real) depend on the velocity of sound waves; and all that the theory of relativity does is to trace and calculate the analogous consequences which the velocity of light must produce in normal human experience. If we substitute clocks for guns, sight for hearing, and the velocity of light for that of sound, there must arise an analogous discrepancy between the time rates of moving clocks, and therefore

⁴ Corresponding that is in serial order, and disregarding fortuitous coincidences arising from the transmission of sound; as well as the assumption that the velocity of light is everywhere and always a constant; this prevents the light phenomena being *strictly* analogous to those of sound.

further, since all our measurements are normally based on time and space measurements, between physical phenomena when observed by different observers who are in different physical systems moving relatively to each other. In normal experience, vision corrects hearing; but we possess no sense faculties whatever which can in a similar manner check and correct the conscious experience derived through sight. That experience is ultimate for us, exactly as hearing is ultimate for our blind observers; no distinction between reality and appearance can possibly arise; what "really" happens⁵ is what light phenomena reveal to us as happening; and then the scientific principles of relativity must be taken into account if our observations and calculations are to accord with "reality." They are no more illogical, contradictory, or revolutionary, than the theories of Copernicus, Galileo, and Newton; they merely, as these did, further correct the rough verdicts of our unrefined experience and yield exacter laws whereby we must express the content of that experience.⁶

Indeed, the principle, in spite of its name, does not even imply that we are wholly deprived of absolute standards; it merely means that we are free to determine these as we please, provided we accept *all* the results of our choice; it follows further that a proper selection will greatly simplify argument and calculation. Thus the "proper time" (*Eigenzeit*) of a system with reference to which a body is "at rest," as measured by observers moving with the body,⁷ is unvarying and in that sense absolute; and Professor Eddington maintains that "One part of the World differs from another—an intrinsic absolute difference . . . the equality of two tensors in the same region is an absolute relation . . . the vanishing of the left-hand side denotes a definite and absolute condition of the World."⁸ Just as sight would discover an "absolute" to our supposed blind observers, so thought may attain an absolute which is truly such for normal experience.

Nor again does the manner in which the theory treats simultaneity and other space and time attributes justify the contention that space is "warped," or afford the slightest fresh ground for the view that it and time are subjective. Some recent thinkers who have

⁵ *I.e.*, in actual observation. We can still go beyond this in thought, but then the very data on which thought operates are derived from observation. *Cf.* previous note on the velocity of light.

⁶ Contrast Bertrand Russell—"Demands a revolution in our conceptions of space and time" (*English Review*, Jan., 1920, p. 11); and Eddington—"The theory has introduced new conceptions of time and space," *Mind*, April, 1920, p. 145.

⁷ Therefore of course themselves "at rest" in that system.

⁸ *Loc. cit.*, pp. 148, 150, 151. The "World" is "the aggregate of all the point-events" (p. 147).

previously held this position now appear to regard it as finally established; while "realists" (so far as I know) have done little to question this attitude. But both schools alike, I think, have fallen victims to a profound misconception, which many scientists (particularly mathematicians) have avoided. They have overhastily confused the mathematical concepts which represent certain *abstract aspects* of time and space with those entities themselves as ontological; and thus the continuous variance of the space-time continuum in a field of force is expressed as a "bending" or "warping" of space, and the dynamic equivalence between gravitation and acceleration (expressed by the Principle of Equivalence) is represented as being the active operation of space-time itself; thus Russell: "attributing the phenomena of gravitation to properties of the space-time belonging to a gravitational field."⁹ But any such extensions of the scientific theory are as yet wholly illegitimate, and certainly find no grounds in the work of its founders; it would be as logical to argue that because a curve may represent a changing force, therefore energy and time must be distorted. Philosophic arguments are (so far) scarcely affected in any degree, and upholders of neither the subjectivity nor the objectivity of time and space derive much if any support for their views from the new developments, if these are confined within their proper limits.

Thus Cunningham begins by insisting on the necessity of "drawing a clear distinction between the mode of *measurement*, and the *nature* of space and time"; the theory "emphasizes the derivative nature of *metrical* space and time, though it has nothing to say against the reality of perception—is completely dependent on such perception." But when thought analyzes the content of this perception, it is possible for it to detach certain purely abstract aspects, so that *e.g.* "in the four-dimensional world of Minkowski space and time combine into a single *concept*"; and this Cunningham rightly terms "the introduction of *mind-stuff*,"¹⁰ a perfectly logical procedure if we but remember the character of what is thus introduced and refrain from objectifying its necessarily imaginary attributes. For the "four-dimensional world of Minkowski" is not a universe which is more truly real than the spatio-temporal world of perceptual experience; it is merely one which may be (in thought) substituted for either of two relatively moving physical systems, so that motion in that system, when observed from the other, must be regarded as occurring in this imaginary four-dimensional space-time concept and correctly calculated only on that supposition.¹¹ Thus "space

⁹ *English Review*, Jan., 1920, p. 14.

¹⁰ *Principle of Relativity*, Pref., pp. 8, 156, 87; italics mine.

¹¹ The imaginary element appears in the employment of $\sqrt{-1}$ in dealing with the time coordinate.

and time become particular aspects of a single four-dimensional concept, and the motion of a point in time is represented as a stationary curve in four-dimensional space"; and exactly in the same way "force and its rate of working may combine into a single concept in which distinction [is] lost, emerging only when we again separate space and time;" or in general, "All relations shall be vectorial relations in four-dimensional space."¹² It may be worth remarking that a "dimension" is any definite concept, which may (further) be absolutely defined in terms of simpler concepts (dimensions), and which when combined, as thus defined, with number, may constitute equations; time and space therefore are themselves merely instances of the general class of "dimensions" as a whole.

These methods and principles, however, do not affect in the remotest degree the philosophic problems of objective reality, the pros and cons of which remain what they were before; they merely express the laws which relate the appearances of such reality to different observers, or to the same observer under different sets of conditions. That different conditions necessitate different appearances of one and the same reality is almost a philosophic axiom; but the discovery that "We may not conceive of a body as having physical reality unless the velocities of a given point as seen by two different observers are related by Einstein formulæ"¹³ is not in itself sufficient to revolutionize our previous conceptions of the nature of that reality. In the same sense "Riemann never speaks of space itself as being non-Euclidean. He carefully refers always to metric relations."¹⁴

This consideration applies even to that most elusive of all physical reals, ether. It is notorious that it has hitherto proved impossible to attribute to it properties free from self-contradiction when taken all together; and it may be completely dispensed with when phenomena are reduced to the abstract level of motions which, as occurring in different physical systems, are expressed by Einstein formulæ. But with the reintroduction of energy and its correlative concepts conditions are profoundly different; "the propagation of light . . . will always be sufficient ground for belief in some reality by means of which the transmission is effected. The ether must be rehabilitated."¹⁵

Precisely the same holds true, *mutatis mutandis*, with regard to gravitation. The famous Principle of Equivalence is exactly what it professes to be and nothing more—a principle of equivalence, but

¹² Cunningham, *op. cit.*, pp. 191, 157, 113.

¹³ *Ibid.*, p. 162.

¹⁴ *Nature*, May 20, 1920, p. 351.

¹⁵ Cunningham, *loc. cit.*, p. 29. *Nature*, *loc. cit.*

not therefore of explanation. That changes in a gravitational field may be equally well expressed in terms of accelerations neither explains gravitation nor explains it away; as Brose points out, "Einstein does not seek to build up a model to explain gravitation, but merely proposes a theory of motions. He does not discuss forces as such."¹⁶ Whatever gravitation is due to, it produces (of itself) accelerated motions which, when in different systems, are related by the formulæ of Einstein and Minkowski. If therefore within a non-gravitational system of bodies a gravitational field is suddenly created, an additional acceleration factor is thereby introduced into all the preëxisting motions, and the paths of light rays which previously appeared straight thereupon appear to be bent in varying degrees; and this change must appear to be ultimate because of the fundamental rôle, already alluded to, played by light and vision in normal experience.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Making of Humanity. ROBERT BRIFFAULT. London: George Allen and Unwin Ltd. 1919. Pp. 371.

This volume is devoted to the thesis that human evolution is the making of humanity, and that rational thought is the primary means of this progress. By human evolution is meant the natural growth of human life from "troglydytic man" to a rationally organized social life which shall satisfy the demands of human life. And by humanity is meant this organized whole of human life, which is a real organic unit over and above the individual human organisms which compose it. This organism of humanity is, however, not something already existent as a finished fact, but something in process of making. The author's purpose is to describe *how* it is being made. This description naturally takes the form of a philosophy of history. The problem is: What has been the constant factor, the real cause of human progress?

Mr. Briffault briefly criticizes the "endogenous theories" which attempt to explain human progress by man's mental capacities or by his racial characteristics on the ground that since they neglect to take into account the conditioning factors of man's environment they merely argue in a circle. Human progress is not explained by arguing that man is by nature a progressive animal. "A real se-

¹⁶ *The Theory of Relativity*, pp. 24, 25.

quence of cause and effect first becomes apprehensible when attention, instead of being centered on the mind and the race, is directed to the environment in relation to which they react and develop" (p. 37). But when we turn to the "exogenous theories," those of "geographic and economic determinism," they also are inadequate because they neglect the human factors. Geographical and economic changes can account for *changes* in human life, but not for a *continuous* progress. We never discover the real cause in the natural conditions of progress, inasmuch as a cause, at least when speaking of progressive processes, is more than a conditioning factor. It is a *constant factor*. Mere environmental changes can, therefore, never account for the continuity which seems to be a characteristic of human evolution.

An adequate cause can only be found by studying man in his reactions to his environments. It is in the field of human adaptation to environment that the real cause for progress is to be found. The author then attempts to prove that the type of reaction which he calls "rational thought" is the fundamental cause of human progress. For rational thought is man's peculiar adaptive mechanism. "All other factors have been, *not means or efficient causes of the process of progress, but conditions*. They have promoted progress or impeded it, sped it or retarded it, according as they have acted favorably or unfavorably upon the operation and development of rational thought. In no case is their relation to the fact of progress continuous and invariable; their influence may be at one time favorable and at another time unfavorable" (p. 51). "But its actual forward development, its progressive character is exclusively the effect of that particular instrument of adaptation by which the human race has been differentiated" (p. 51.) "Although no one perhaps will directly demur to the statement, when put in so many words, that man is first and foremost *homo sapiens*, that all his powers are dependent upon the rationality with which he employs them, and that he succeeds or fails according as he thinks and acts rationally or irrationally, yet many are quite prepared to uphold views directly implying an entirely different estimate of the sources of human power; and there is a deeply rooted and widespread disposition to disparage rational thought, and exalt at its expense other supposed powers and methods as the talismans of true human development" (pp. 52-53).

These quotations are, I think, sufficient to show the author's chief interest in writing the book. The book is an ardent plea for (rather than a sound demonstration of) the controlling power of rational thinking or intelligence. It is refreshing to read such a plea at a

time when the champions of other ways of salvation are so popular. Faith in intelligence is still on the defensive. The straight and narrow path of reason is still unattractive, and those who follow it are even fewer than those who preach it! And to-day it is decidedly unfashionable philosophy to be a "rationalist" or an "intellectualist."

But at least two of the reasons why these are usually terms of reproach are evident in this book. First, the preachers of rational thought so readily beg the question. They assume that it is fairly obvious which opinion of a number of opinions is the rational one. To condemn thinking because it is irrational is the easy and obvious thing to do. But it usually throws little light on the real problem, which is: *Why* is it irrational? After all few people are willing to champion unreasonableness. I say unreasonableness rather than irrationality, because those who pride themselves on being "antirationalists" usually do so on the grounds that rationalism is unreasonable. And it is precisely because rationalism has been both more and less than the defense of "reasonableness," that it has become discredited. Mr. Briffault's book seems to me to be open to this fundamental objection. It has much to say about the value of rational thought; but little to say about its concrete definition. The former might nowadays be taken for granted; the latter is a vital and difficult problem.

In answer to this charge Mr. Briffault would, of course, refer to his chapters on "Rational Thought, Its Origins and Functions," and to his chapters on "Custom-Thought" and "Power-Thought." But I doubt whether a study of these chapters will throw much light on the problem. Rational thought, for example, is defined as "an adaptation of the organism to the most general and fundamental characters of man's external environment" (page 48). And again in more detail: "Rational thought is the human improvement on the biological method of trial and error; a perfected, economical, immensely more effective form of it. If one course of action proves successful and another fails *there is a reason for it*. If sufficient knowledge had been taken, it would have been possible to know beforehand which was the rational and which the irrational course. The successful result is that to which efficient thought would have led, had it been applied. With the growth of rationality, the development of experience, of available data, and of the habit of rational thought, its powers contribute more and more to the results of the method of trial and error, shorten and facilitate and economize its waste in an increasing degree. The sphere of that method becomes narrowed, that of rational thought extended. The more efficient method of adaptation tends constantly to prevail" (p. 55). Now that may all be true enough, but how does it help us in evaluating the rationality

of current doubtful opinions? It is all *ex post facto*. It is a fairly simple matter to see one's mistakes after they have been made, but it is another matter to acquire the capacity of avoiding mistakes. To say that "the successful result is that to which efficient thought would have led, had it been applied," is mere mockery. Mr. Briffault has little trouble in exposing to ridicule the irrationalities revealed in human history, and to point the moral that if people had been more rational more progress would have been made. (Of course it would, *by definition!*) But that still leaves the real problem of discovering the technique of rationality. How are opinions to be evaluated?

Mr. Briffault does not leave this question entirely unanswered; he makes two practical suggestions for the evaluation of thought. According to him the two most persistent and vicious forms of irrational thought are custom-thought and power-thought. Custom-thought is thinking dominated by tradition, habit, dogmatism. Power-thought is thinking dominated by the exercise of power of one individual or class over others. Custom-thought takes its rise in the earliest forms of primitive thinking. Power-thought is a product of the ever-increasing differentiation of society into classes and conflicting interests, and the consequent wielding of power by some over others. As this process continues, power-thought becomes more and more prevalent.

The history of human progress is the story of the conflict of rational thought with these two types of irrationality.¹ In every case where progress has been thwarted, one or both of these two will be found responsible. And wherever progress is made, it will be found to consist of a victory of rational thought over these. Part II., "The Genealogy of European Morals," is devoted to the elaboration of this idea. And it is in this part that the author makes his own contribution to the philosophy of history. His purpose is to show how European history illustrates the progressive power of rational thought over custom- and power-thought.

The story falls into two main parts—the Ancient, or Græco-Roman phase of civilization, and the Modern. I quote the author's own summary of the "ancient phase," which is admirable for its brevity and clarity: "Three broadly distinguished stages mark the course of human evolution. First, the long primitive tribal stage in which custom-thought ruled absolute, broken only now and again, and only to be renewed with but slightly weakened force, by material discover-

¹ Theoretically, of course, custom-thought and power-thought need not be irrational, and certainly are not in many cases. (I suspect that the struggle between the capitalists and the proletariat is such a case in the author's own mind!) Mr. Briffault does not justify his assumption of their irrationality theoretically. Whatever justification it may have lies in its practical utility.

ies and the clash of cultures. To that original phase succeeded that of the great oriental civilizations wholly dominated by theocratic power-thought whose absolutism is only occasionally and ineffectually challenged by military power, and which, owing to its greater subtlety of direction and elasticity of interpretation, virtually nullifies the disruptive effects of crossfertilization. Thirdly comes the extraordinarily felicitous accident of Greece, which at a blow almost completely liberates the human mind from custom- and power-thought, and raises it to undreamed-of heights of power and unfettered efficiency. But while it utilizes all the available data of rational thought, it contributes little to their increase, and its poverty in that respect cripples the power which it derives from freedom. The world contains as yet too much barbarism and too much orientalism; and the Græco-Roman phase of civilization succumbs at last to a gigantic tide of these elements which submerge and overwhelm it. It is eventually succeeded by a fourth phase, the one in which we live" (p. 162).

This fourth or modern phase is in every sense a new development. It is usually supposed to begin with a "renaissance," a rebirth of the intellectual life of the ancients. But the author finds in the "*soi disant renaissance*" an obstacle rather than a cause of progress. It was thoroughly dominated by custom-thought, and hence pedantic and artificial to the core. The real rebirth of Europe is to be attributed to other causes: (1) to the development of natural science among the Arabs and Moors and its spread in Europe; (2) to the commercial revolution; (3) to the force of reason revealing the romantic inconsistencies of the medieval theology which it had itself erected. The reason these forces have not made more progress than they have is to be sought in the fact that the political history of Europe is nothing more than a story of the conflicts of various powers, each dominated exclusively by power-thought. There was first the theocratic power struggling against the power of kings, followed by the struggle of the kings against the unruly power of the moneyed classes; and this in turn followed by the struggle for power between the bourgeoisie and the proletariat. All these struggles are shot through with duplicity, trickery and treachery, which when "divested of those decent veils with which its nakedness is customarily disguised by the reflections of power-thought appear to be conducive to a Yahoo view of humanity" (p. 246). It is this fact of European history which has made it impossible for morals to gain a foothold in the practical control of European society. Ethics has been forced to remain theoretical and speculative; morals are supposed to have nothing to do with politics. But in spite of this, morality has

evolved steadily and is increasingly becoming a controlling factor in life. It has thus evolved precisely because it is a form of *rational* thought. "Moral progress has in every case consisted not in a development of feeling, but in a development of thought; the rational evolution has preceded and brought about the ethical evolution" (p. 300). "So long as the extra-rational foundations of privilege were unquestioningly accepted, claims to equality, to right, to justice, could not and did not arise. So long as the divine nature of kingship was undisputed, every abuse of tyranny could exist unchallenged, so long as feudal power was looked upon as part of a superhumanly established order, every excess to which unchecked authority gives rise could proceed unquestioned. It is only when they have come to perceive that what they regarded as a sacred truth was a lie, that what they had been taught to look upon as right was iniquitous wrong, it is then only that the injured have rebelled. It is the exposure of the basic irrationality of the justifying lie, which brings about the overthrow of the abuse. The oppressed have only revolted against tyranny or injustice, however atrocious, when they have clearly perceived it as irrational, mendacious, false" (p. 282).

This illustrates the second reason for objecting to this type of rationalism. It not only begs the question, but it also shifts its ground from a defense of rational thought as the only rational basis for moral life, to the rationalization of history. It is one thing to show the futility of an irrational social life, and it is another thing to maintain that *historically* its irrationality has been the cause of its futility. I have my suspicions about any monistic philosophy of history, but it seems to me much easier to justify an economic interpretation of history, than a "rationalistic." Usually the economic consequences of an abuse are more potent and primary forces for progress than its intellectual consequences. Mr. Briffault appears to me here to be involved in a *post hoc ergo propter hoc* fallacy. It is the counter-fallacy to what he calls the "misological" fallacy. Consequently it seems to me that *The Making of Humanity* is valuable not so much as a philosophy of history as for the light it throws on many of our moral distinctions. For instance, one can not read the book without coming to a fresh realization of the tremendous influence of "power-thought" on our moral ideas, especially the idea of "corruption." Likewise, one can not read the chapter on "Current Opinion on Opinions" without coming to a fresh realization of the vogue of the "misological" fallacy. It is impossible here even to indicate the many clever ideas in which the book abounds. It is unfortunate that they are so often concealed by a needlessly pompous and repetitious style.

There is one contradiction which runs through the entire book, and which is theoretically fundamental. On the one hand the author speaks of the moral law as a natural law, of progress as an inevitable accompaniment of human evolution, of natural selection, *etc.* On the other hand the author speaks of the control of evolution, and makes a plea for education, closing with this sentence: "In the phase which its evolutionary aims have reached the first indispensable reform which must precede or accompany all others, if they are to be aught but stages in the long process of trial and failure, is an organized effort to provide for the handing down with untampering honesty the full measure of those powers which man has acquired, and to transmit them to the race. Failing such a provision, troglodytism and medievalism must necessarily continue with us, and all attempts to shake off the dead hand of unburied evil must remain essentially ineffectual" (p. 371). To me this seems to raise the question of what after all is meant by evolution and laws of nature, *etc.* I think we owe a vote of thanks to Mr. Briffault for bringing out this contradiction, or at least this ambiguity so obviously and frankly.

Mr. Briffault's book, however, deserves more positive justification than that. In a time when the protagonists of intelligence are obviously disheartened, when courage is failing, to bring forth an enthusiastic defense of the power of reason is a real service.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. October, 1920. *An Experimental Study of Visual Movement and the Phi Phenomenal* (pp. 317-332): F. L. DIMMICK. — The integration of a time and quality element in a gray flash gives the perception of movement in vision. *A Psychological Interpretation of Modern Social Problems and of Contemporary History: A Survey of the Contributions of Le Bon* (pp. 333-369): HARRY ELMER BARNES. — Le Bon was not an accurate social scientist but suggested some valuable theories. He emphasized psychic traits as being the determining factors of society rather than institutions. Some of the traits named are mysticism, racial tendencies and national characteristics. *A Psycho-Analytical Study of Edgar Allen Poe* (pp. 370-402): LORINE PRUETTE. — Poe as an only boy had many weaknesses of an only child. His poetry shows a high degree of introversion and flight from reality. *Minor Studies from the Psychological Laboratory of Clark University. Highest Audible Tones from Steel Cylinders* (pp. 403-406): C. C. PRATT. The limen is something less than

20,000, with smaller individual variations than in the use of the Galton whistle. *Book Notes.* M. M. Knight, Iva L. Peters and Phyllis Blanchard, *Taboo and Genetics.* Sigmund Freud, *A General Introduction to Psychoanalysis.* H. L. Hollingworth, *The Psychology of Functional Neuroses.* Wilfred Lay, *Man's Unconscious Passion.* William McDougall, *The Group Mind.* Henri Bergson, *Mind and Energy.* George Lansing Raymond, *Ethics and Natural Law.* Irwin Edman, *Human Traits and Their Social Significance.* *Proceedings of the International Conference of Women Physicians.* Bernard Muscio, *Industrial Psychology.* Henry Lane Eno, *Activism.* Dorothy Tudor Owen, *The Child Vision.* Julius Magnussen, *God's Smile.* J. W. McSpadden, *Famous Psychic Stories.* Orison Swett Marden, *Success Fundamentals.*

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NOTES AND NEWS

In a paper entitled "Cosmic Evolution," read before the Aristotelian Society, March seventh, Professor J. E. Boodin advanced the hypothesis of cosmic interaction to account for the evolutionary series on our earth. Modern science and modern philosophy agree in treating the evolution of our earth as an independent drama. The later levels of evolution are supposed by some magic to emerge from the earlier—life from matter, thought from reflex action. Some have attempted to introduce a *plus* principle such as an *élan vital* or entelechy. But such a principle would have to be present from the beginning, thus antedating life. It would have to account for the reversed or alternating directions of evolutionary series, and sometimes it would have to lie dormant for long periods of time. It is at best an abstraction of the fact that certain processes have direction. It does not explain the fact. For this we need a cosmic dynamics, and this is found in interaction. Interaction is not merely a speculative principle. The discovery of interaction has

revolutionized our conception of the organism. We have long known about neural messengers, but lately we have discovered that the process of growth, proportion and assimilation are controlled by chemical messengers in the form of secretions carried in the blood. Thus secretions from the thyroid and parathyroid glands control the process of growth and proportion of the organism. In the cosmic continuum we are familiar with certain interactions that control the movements of the heavenly bodies in space. Radiant heat and light, without which our earth would be dead and void, are communicated from the sun and distant stars. Is it not reasonable to suppose that the movement of our earth in time as well as in space is controlled through its interactions with the larger cosmos? Only so can we account for the appearance of life as a new type of energy pattern. It is equally impossible to explain the evolution of our sense organs without taking account of the principle of interaction. No reasonable man could hold that our complicated organs of sight and hearing are developed by chance in the organism without reference to the cosmic environment. It is safe to say that if there were no light patterns there would be no eyes; if there were no sound patterns there would be no ears. Through a long trial-and-error process and under the control of cosmic patterns the organism develops the appropriate instruments to respond in specific and differential ways to the cosmos. And what shall we say of the various levels of control within the organism? Can we account for the unique type of pattern of creative thought and its control of the lower levels by a chance combination of reflex arcs? Here too we must invoke the principle of cosmic interaction. The development of the organism to think is due as truly to thought patterns communicated through the cosmic continuum as the development of seeing is due to the light patterns acting upon organic matter. And thought patterns like light patterns must be communicated from other worlds that are of a level to emit such patterns. We know no other way. In neither case is it the act of thinking or seeing which is communicated. This is due to the interaction of the respective patterns with matter and its properties.

THE JOURNAL OF PHILOSOPHY

SOME POLITICAL IMPLICATIONS OF ETHICAL PLURALISM

IN a recent article,¹ I endeavored to show that the moral life is essentially pluralistic, that the goods available to us in this world in which we find ourselves are widely various, often incompatible, and in many cases incommensurable, and that consequently the choices which in practise we are forced to make are rather personal options than discoveries of eternal principles. It was maintained that ethical theory has usually been too pious in its deference to monistic philosophy, and that a first-hand examination of concrete human affairs, of the actual method whereby pressing problems are solved, compels a frank recognition of the arbitrary character of moral codes and programmes. However objective and "natural" moral distinctions and values are, none the less any selection between alternative goods and any determination between alternative courses of action are conventional to groups or peculiar to individuals. Failure to realize the pluralistic nature of the moral life is the occasion of much strife and social discord, and hence of an unnecessarily large amount of moral evil.

The following paper seeks to carry further the analysis which in that paper was begun. The attempt is here made to follow out the import of the position there set forth, to point out its significance for the social life of men, for their association within groups, for the coexistence of many and sometimes rival groups, and for the relations of different nations in a world which, in spite of antagonisms and devastating wars, is growing to be ever more closely bound together in politics, commerce, and culture. It is no new thing for philosophy to dwell upon the analogies between the excellent man and the perfect state. To understand the one is to be well on the way to understanding the other. Perhaps we can not with Plato divide human nature into the same number of mental faculties as we find social classes in our city; and perhaps we can not with James Mill generalize out psychology into a politics. But it is probably safe to say that no theory of morals amounts to much unless it illuminates social problems. Society can be properly ordered only

¹ This JOURNAL, Vol. XVII, No. 21.

through due consideration to the achievement of goods by the individuals of which society is composed. Hence the social and political implications of the theory of pluralism in ethics should afford the most searching test of its soundness.

In the first section which follows a contrast is set forth between two strikingly opposed views of the basis of political rights and duties, both of which have had vogue throughout centuries, and then an endeavor is made to state a theory which will contain the truth of both the opposed positions without the exaggerations which led advocates of the opposed theories astray. This constructive statement leads to an examination of the moot point of the relation of might and right. In the second section a treatment is given of the concept of sovereignty, again developing the historically opposed views, endeavoring to understand their motivation, and showing the consequences of ethical pluralism for a theory of sovereignty. Special emphasis is laid upon the international bearings of this concept, because of the present acuteness of international problems. And then in a brief concluding section, an effort is made to bind together the various points as related aspects of a consistent pluralism.

I

Historically, political theory has alternated between two suppositions. The tradition which has in most ages enjoyed most favor has looked to some ultimate moral principle as the final court of appeal in conflict between men and nations. This tradition finds expression in the stoics, in the great body of political teaching in the Middle Ages, in Grotius and Pufendorf, in Locke and the whole contemporary reaction to the maligned Hobbes, in most of the moralists who approach the problems of conduct from the religious angle. Sometimes this appeal to ultimate principle is in reality merely a firm insistence upon the finality of some particular body of positive law, in which the established values of some group or class are defended. Thus for example, the common law in England or the federal constitution in the United States has been appealed to by various advocates of the old order from the days of Edward Coke to those of the National Security League. But such appeals are enthusiastic rather than scientific or philosophical, and are intelligible only in the light of the curious political situations in which they emerge. That is, a particular body of positive law becomes enthroned as sacrosanct when it is imperiled by sweeping changes in the structure or policy of government, and becomes a rallying point upon which liberals like Edward Coke or reactionaries like the National Security League may assemble. The dominating tradition in

political philosophy is, however, a much more profound and more significant position than the transient efforts of those who find some cherished values of existing society threatened by attacks from dangerous external sources. The attempt has been made to get back of all existing bodies of law to a criterion by which even the best of them could be weighed in the balances and by which most have been found woefully wanting. This ultimate standard has often been called "the law of nature." Always it is regarded as universally applicable to all men in all places and at all times, immutable in its superiority to all enactments of human or even divine legislators, rational in its provisions which serve as the major premises of syllogisms whence all moral and political maxims may be deduced. This ultimate standard forms the proper basis of all social relationships and organizations, and gives those rulers and citizens who follow its dictates the only valid assurance of just and honorable living. Treated from the idealistic point of view, this ultimate standard becomes, as is also conspicuously true in the case of medieval realism, a part of the framework of the universe, a genuine aspect of the nature of things; it is not only normative for the actions of men, but somehow structural in the very being of the spiritual world; it exists as a real substantial and supernatural principle apart from all human art and reflection. But this logical realism, this ontologizing of the final moral standard, however characteristic of some historical expressions of this political tradition, is not indispensable to it. Ideals, in order to be supreme, do not necessarily have to be objectified into an external order which we would approach and study as we would approach and study the physical constitution of things. But throughout this political tradition, ideals are at least ultimate, fixed, and unquestionable. Most men have been quite willing to appeal with Antigone to "the unwritten laws whereof no man knoweth whence they come."² The criterion may well be considered apart from metaphysical and logical questions, simply as the standard supreme above all men, depending upon no enactment, subject to no legitimate exceptions, imposing upon all an obligation to obey its prescriptions. Such a criterion serves as a powerful agent of reform, and enlists strong loyalties and deep enthusiasms. That this orthodox tradition is still a live and vital political force can easily be seen by referring to the great and inspiring speeches in which is expressed the purpose for which the United States entered the Great War, to the effusive acceptance speeches of presidential candidates, to a multitude of newspaper editorials, to the sermons of countless ministers of the gospel.

² Sophocles's *Antigone*, lines 456-457.

The other and opposing political philosophy, though it too is found in almost every period throughout the whole history of human thought, is not so much a tradition as a series of realistic protests. It has seldom enjoyed popularity, but constitutes the vigorous and bold criticism of non-sentimental minds who disengage themselves critically from the sympathies and intimate kinship of their fellows. With Thrasymachus they cry out that justice is but the interest of the stronger. They repudiate the conventional codes and the professed standards as alike inventions of the weak to rule the strong. They prefer *realpolitik* to pious maxims. They find no objective moral order in the universe, but only a struggle in which they intend to succeed. Hobbes is the great name in this class of political thinkers, and it is safe to say that never have his insight and his wisdom been equaled by his predecessors or followers. Usually the social and political "realism" which writers of this tradition maintain, is much more crude than the skilful teaching of the *Leviathan*. And when one finds an author like Machiavelli or Nietzsche who shows discrimination and intelligence in his frank and open realism, one finds also that this author is misinterpreted and abused by his contemporaries and by his historians. The political realists always seem, as did Hobbes and Spinoza to the pious Locke, "justly decried names." They usually draw down upon themselves the same universal condemnation which Thrasymachus received at the hands of the friends of Socrates. And in its cruder form realism probably deserves to be thus reprobated. The fundamental idea of realists is that of the exercise of power, of the impossibility of substituting moral sentimentalities for the force of manly assertion and vigor, of the dependence of law upon the will of those competent to define the law. The only "law of nature" is the struggle for existence, which of course since the time of Darwin has had the reinforcement of much biological material. Success in this struggle must be won at all costs. The weak must give place to the strong. The ignoble must make way for the noble, and the noble are the survivors of the hardest contest. Duty is to oneself, to the impulse to achieve mastery, to the desire to attain self-assigned goals. Against the traditional sanctions of religion and custom, the virile man will put the might of his own triumphant determination, and woe to those who present themselves as obstacles in his stern pursuit of his chosen career. Force rather than law is the ultimate sanction of good conduct; and force is to be used, not so much to fulfil the law of nature as to create a novel and man-made law. Power is its own justification, and there is no sin but failure. That this realistic position is still the determining factor in many contem-

porary events is quite evident. The realistic principle is practised even more than it is preached; and for every Bernhardi we can find a dozen D'Annunzios. Our modern world seems at times to be one huge Fiume. Imprisonment for honest conviction, deportation of "radicals," expulsion of minorities from legislative bodies, the threat of a general strike, all these demonstrations of major power, even though they may be rationalized as in accordance with a supreme moral standard, are indications that various parties are resolved to make their will prevail by the weight of legal, or even physical instrumentalities, to create a moral standard by compulsion. Where a cloak of legality can be maintained, so much the better; but the cloak is worn rather thin, and in emergency is frankly discarded.

The only hope of effectively settling the issue between these two opposed types of social and political philosophy is in a factual approach on the basis of the human goods which men may make the end of their activities. As long as duty or obligation is the fundamental moral or political concept, no resolution of the issue is possible. But if duty is defined in terms of the pursuit of goods, then an experimental test is found. In what way can the greatest human excellence be realized? To what extent is there a final and fixed principle or set of principles to serve as a guide in realizing this excellence? What place may, nay must, force play?

On the one hand, the former tradition fails to take account of the pluralism of goods. The unity which men introduce into their own living is a practical achievement, not a theoretical monism. There are many predicaments in which men must arbitrarily select some and reject other goods, without thereby imposing upon all the necessity of a similar choice. Of course the goods of life can not be treated as atomistic entities. Rather they are altered in moral quality by the groupings in which they stand and the relations which they bear to other goods and bads. None the less, however much we may be satisfied personally with our own hierarchy of goods, our own integration of values, we can not legitimately read that hierarchy and that integration into the nature of the universe. Though a wise man will find that reflection in a difficult situation will enable him to find the unique good which the situation is to have *for him*, there is not therefore a unique good absolutely and objectively and apart from the personality, temperament, purposes, and interests of the person involved. The wise man ceases to brood upon the goods he has sacrificed, and concentrates his efforts upon, and finds his happiness in, the goods he has selected. But others may legitimately choose differently, and be equally justified in their choices. Two men may, and in-

deed often do, make opposed integrations of values, resolving the moral dilemmas they face in contrary ways, and unifying the pluralism of goods by utterly unlike programmes. The contrast between the diverse variety of possible goods and the achievement of moral unity has sometimes been viewed as that between appearance and reality; but unfortunately for the happiness of most men, the variety is only too real and the unity rarely attained. The contrast is rather, to borrow a Greek distinction, that between nature and art. The pluralism is given, the unity is to be won. And it is as foolish to suppose that there is but one form of unity, as to suppose that a block of marble could be fashioned into but one sort of statue. Under the chisel of a Michelangelo a stone rejected by another may become a David of surpassing beauty. But it might have become still other things than a David. Even if there is not a vague and indeterminate potentiality in all situations, even if moral and social facts exercise strict and unchangeable limitations upon future developments just as do the physical materials of our world, yet the potentialities are usually plural. And because of these plural potentialities there is real contingency, there are real alternatives. Thus there is something which we may fairly call arbitrary about the moral life, something irrational. The just man will be under necessity, first, of introducing order where he found none on the basis of an arbitrary choice, and then, since the most individualistic must needs seek at least some of his goods through social or communal activity, of compromising enough with his fellow men to get the bulk of his chosen ends fulfilled. The same is true of the just state. The final principles and the ultimate standards of all moral and political codes must then be some person's own selection or some group's own selection, final only relatively to some personal loyalty, ultimate only relatively to some chosen end.

On the other hand, the "realistic" protest against the supposition of eternal principles is in its extreme statement most unsound. Mere force is non-moral. However much pluralism points out the arbitrary element in the moral life, it stands irrevocably opposed to utter license and dogmatic petulance. Things are not made good by being desired. Things are not made good by becoming the goal of a strong man or a powerful group. Even if justice were provisionally defined as the *interest* of the stronger, it could not be defined as the *will* of the stronger; for the stronger could not by mere will make what he willed to be his own real interest. Goods are always human goods. They are discovered as good quite as objectively and obviously as other things are found to be square or heavy. Human goods fall within the limitations of the natural

conditions which support human life and make its continuance possible. Human goods would not be the goods of angelic beings, nor of demoniacal beings. If men became demons, our human goods might possibly become their bads, and our bads their goods. But the quite sufficient answer to this is simply that men happen to be men and not demons. Success in achieving one's goal is not justification of the goal. Rather the goodness of a goal would alone furnish the justification of success. A man may arbitrarily select his end when several incompatible goods are offered to him; but he can not by act of will alter the nature of human goods and the consequences of human actions. A man may make evil his end, but it will not thereby become a good end, no matter how much force he exercises, no matter how persistent he may be in his efforts. The basis of morals lies in the actual conditions of human life, which are given in the nature of the real world; and no man and no nation can any more alter the natural distinctions between goods and bads, which result from those conditions, than they can square the circle or transform poisons into foods.

The conclusion to which I have been working is evident in the light of the observations of the last two paragraphs. That conclusion is that the moral life is primarily a problem in successive adjustments. Neither the supposition of eternal principles nor the realistic protest is sound. Both are overstatements of one or another aspect of the facts. No principles are eternal and immutable, universal and absolute. There is no one objective criterion, but rather there are a number of alternative criteria. Thus there will be constant need for reconciliation, for compromise, for working agreements. There will be no means of settling the issues which are bound to arise between advocates of different and opposed programmes of action except either brute force or mutual adjustment. Brute force will always have to be in the background of social and political problems, since there are some values which we cherish so profoundly that for them we would defy the world and would rather perish fighting than survive in peaceful compromise. And when that kind of a case arises, there is no reason which forbids the sublime courage of unyielding loyalty. But more often a way can be found to social adjustment. As an individual selects among the pluralistic goods offered to him in order to be able to get more than random drifting would secure, so a group will arbitrarily adjust the various selections of its members in order not to be disrupted by violence, in order not to permit its members to thwart each other and exhaust all the energy of the group in inner strife which may well be needed against common external dangers. These groups will in turn need to adjust their

enterprises to those of the groups about them, to the inclusive national group in which the lesser groups live. And the nations are faced with the problem of finding a basis of adjustment or else incurring almost certainly a mutual destruction and a common doom. Right will not compromise with wrong, except as a sort of temporary truce in preparation for a future renewal of the contest; but the alternative rights may well work out compromise agreements which will enable them for a long period of time to avoid friction and work in neighborly fashion to their respective goals.

Thus the implications of ethical pluralism for political philosophy seem to be the sanction of both compromise and the use of force. These two expedients for settling differences between individuals and groups are in such general disrepute, however, that another word of defense may be advisable. In the first place, compromise is not here used to include the lowering of one's moral standards in the face of temptations. Only too often our passionate natures lead us to sacrifice some great good for some vicious satisfaction, for greedy gain, for evil end. It is as true as it is unfortunate that men do deliberately seek the bad at times. *Video meliora proboque, deteriora sequor*. Compromise as the turning from good for some seductive evil can be unqualifiedly condemned. But such is not what has here been meant by compromise. Rather I have used the term compromise to indicate mutual adjustment of rival and incompatible goods, the integration of competing social programmes zealously and worthily held by persons or groups who must operate within the same social *milieu*. Destroy one another they might; but surely such destruction is an unmitigated evil. The only alternative is that of finding a basis for joint action which enables both persons or groups to work towards their cherished goals without thwarting the other. Compromise in this sense might indeed be hailed as the social virtue *par excellence*. It is a vital necessity in any world where personal contacts are as close and as intimate as is the case to-day. It becomes itself a good, not simply instrumental, but intrinsic. The finding of a *modus vivendi* is often the very secret of happiness. And in the second place, the use of force is not under all circumstances to be disparaged. Force is good or bad relatively to the function it is made to serve. Though it is true, as is so often said, that might does not make right, it is also true that might alone is at times able to enable a cherished right to prevail. Without might, not simply would the seeking of goods be thwarted by many a deliberate choice of evil ends, but also a new and unique, a fresh and perhaps promising, selection among heterogeneous goods would almost certainly be overpowered

by convention and social habit. That is, however natural and objective goods may be, the requisite conditions for the achievement of these goods include the use of force, either personally exercised, or, in the case of goods which must be sought socially or cooperatively, communally exercised. Hobbes overstates the point when he writes that "power irresistible justifies all actions, really and properly, in whomsoever it be found";³ but no choice of noble ends, no resolution to seek worthy goods, will be effective without power. Either morals are an affair of pious sentiment and subjective wish, or they require energetic and forceful pursuit, with the employment of whatever weapons may be found suitable to the end in view. Right can not certainly be defined in terms of the might essential to success; but right is dependent upon might for success.

II

The implications of ethical pluralism for political philosophy have led to a recognition of the validity of both compromise and the employment of force. But the employment of force, as discussed up to this point, has been left intentionally ambiguous, including both the employment of force by individuals or groups in the interest of their individualistic selections of goods, and the employment of force by a superior power to bring about the integration of other persons' rival selections of goods. These two kinds of the use of force now need to be more carefully distinguished. The consequences of their employment are very unlike, and, in order to pass judgment upon the relative advisability of their employment, must be examined. The former kind is more frequently met in international affairs, the latter kind in disputes arising within a national unit. Yet either kind may be met in most any area of human activity, and their ordinary location is not essential to their understanding.

We have had in the Great War a striking example of the results of the former type of employment of force on an unprecedented scale; and the results are universally deplored. In such tests of endurance and destruction, each side is all but ruined, and the alternative selections of goods (if we generally let it be assumed that the war was a clash between rival selections of goods) are both alike made almost impossible of realization. Compromise would have been better for the victor as well as for the vanquished, though no authority capable of compelling compromise existed. Many a man and many a group, after a forceful insistence upon some chosen goal at all cost and at all consequences, may wish that less resolution and more pliability of temper had guided their contacts

³ Hobbes's *English Works*, Molesworth edition, Vol. IV, p. 250.

with rival men and groups. Of course no one can dogmatically assert that force, exerted not to compel compromise but to enforce a chosen good end, is always mistaken even when the price to be paid therefor seems disastrously heavy. For as was mentioned above, the incommensurability of goods and the consequent arbitrary aspect of moral standards prevent us from reprobating the person or group who holds out for his chosen goal to the bitter end. Provided that the discomfiture of struggle in the face of heavy odds is willingly borne by those who resort to force, there seems to be no principle by which such assertion of force can be shown to be morally wrong. There are some things so sacred to individuals and to nations, that no legal restrictions can be observed, no treaties can restrain, no international power can be recognized even if created to deal with just such issues. Better at such times are failure and extinction than compromise and survival. To insist upon one's right to condemn the resolute determination of others in carrying out their moral standards is to commit the same kind of an arbitrary act, and to put one's own standard forth as absolute much as others had put forth theirs; and thus one would but emphasize the fact that all such condemnations were but relative to some other selection of goods or some other choice of ends which the critic has made in antagonism to those criticized.

Granting so much to those who decline all compromise, we may leave them aside from further consideration, and examine only the employment of force to compel compromise between contending parties. It has been found true that most issues are not worth the cost of bitter opposition. Half a loaf is better than none. Refusal to compromise would lead to Hobbes's war of all against all, and would destroy the possibility of all achievement altogether. Thus we are led inevitably to a consideration of sovereignty, which is the dignified name for authority or power to compel peaceful compromise between rival persons and groups. The need of sovereignty is apparent upon the basis of ethical pluralism. The justification of sovereignty is the fact that more goods are available in an ordered society than are available in a disordered society. Better to have a large part of one's chosen goods forbidden than to lose all in a death struggle. Force used to compel settlement of conflict by an integration of ends is better, in the opinion of most people, than force used in passionate and daring revolt. But sovereignty is a concept which has been the cause of endless discussion; probably no other concept in political philosophy has been so frequently and profusely handled since Bodin and Hobbes forced it to the fore nearly three hundred years ago. Sometimes sovereignty has been held to be a legal term descriptive of certain

facts; and at other times it has been held to be a moral term implying certain rights and duties. But always it has been confusing and confused. None the less it is essential for any political philosophy. I shall endeavor to deal with it under three heads, taking up first various facts to which it points, secondly various theories as to where its locus should be, and thirdly some of its consequences for internationalism.

1. Sovereignty as a fact of political organization is apparent on all hands. The machinery of government may serve many a positive function, carrying on certain public enterprises and providing certain common needs. But at least it among all other functions must have the function of compelling peaceful settlement of differences, of providing the instrumentalities of harmonizing various group interests, of ordering the life of the many persons over whom the government exercises authority. The public nuisance of trials of force are so great that unless a sovereignty prevents their occurrence it ceases to remain sovereign. The sovereign powers may not deem it always expedient to determine some specific compromise for every divergence of interests; but it at least must restrict the degree of violence which contending parties may utilize and the forms of expression which that violence may assume. The very revolt against a particular sovereignty is usually not an effort to abolish all sovereignty, but an effort to create an alternative sovereignty to replace the old. The principal consequence of the existence of sovereignty is to make it increasingly inadvisable to resort to demonstrations of power to settle minor issues.

None the less, it is often difficult to tell, in examining a given society, just where sovereignty resides. Occasionally it is largely concentrated in the hands of one prince who seems to have the power to do about as he wills. But it is doubtful whether sovereignty is ever entirely absolute, since even the most autocratic rulers have found that they dare not go beyond certain limits of their subjects' endurance. More usually, as we look back over the course of history, we discover that in each successive political order there have been a number of offices or institutions which have had certain powers in certain realms within which they were able to carry out programmes and determine policies as they preferred, but beyond which they had no great influence or authority. Many nominal "sovereigns" have been mere puppets with little real sovereignty; and many common men and unofficial bodies have regulated the lives of thousands. In democratic governments the people, or the majority of the voters, may be considered theoretically sovereign; but practically the "popular will" which rules is determined by many another consideration than the decision of the

ballots at the polls. When we get back of the definitions of the locus of sovereignty which we find in constitutions or laws to the actual ability to exercise power and compel obedience, we find it most difficult to determine the real locus of sovereignty. If every difference between contending factions were pushed back to a final settlement, we should discover by the outcome who was sovereign; but such is almost never the case. Rival claimants to power are seldom willing to hazard the limited powers they are sure they possess in order to find out how much further their power may hold; and so they come to a voluntary compromise to avoid the gamble of open struggle. Not often can one claimant establish his complete sovereignty by compelling his rivals to come barefoot to Canossa.

The difficulty in locating the seat of sovereignty is due partly to the fact that it is not stable. Seldom does sovereignty remain in the same hands during two successive tests of power. Every social organization rests upon a good deal of latent anarchy, upon smothered fires of protest and potential might, which, though not usually exercised because of the indifference or cowardice or ignorance of its possessors, asserts itself at unexpected moments and changes the relative status of the contending parties. Sovereignty fluctuates in each new social crisis. Any declaration of a balance of powers is but a truce during which the powers so balanced seek for reinforcements to change the balance of powers into a preponderance of power in their own favor. Successive compromises, successive settlements on the basis of force, successive determinations on the basis of mutual convenience, all these are of frail nature, are doomed to certain extinction, are soon made obsolete by new issues, new laws, new constitutional definitions, new class influence, new trials of force. Political organization, like biological organisms, grow, become diseased, regain health, linger on uselessly, and die. The very abject surrender at Canossa may be but a clever trick to prevent permanent ruin; and more than once has a Gregory VII died in exile and a Henry IV temporarily triumphed.

None the less, though sovereignty is difficult to locate and changes from hands to hands, it is essentially indivisible. When the principle of divided sovereignty has been defended, the discussion has clearly been about something else than sovereignty. There can not be a number of courts of last appeal. The principle of divided sovereignty may be meant to teach that it is often possible to find a basis for compromise without compulsion by a superior authority, or that many types of group contact may lead to no serious clash, or that men do not need in every case to be coerced

in order to enter into coöperative enterprises. Though Hobbes saw human nature truly when he stated that all mankind manifest "a perpetual and restless desire for power after power that ceaseth only in death,"⁴ he was wrong in interpreting the desire for power to be wholly selfish, to be centered upon the sensuous pleasure of the individual, to be altogether egoistic in aim and purport. In other words, sovereignty does not need to manifest itself in every phase of human activities. Nevertheless sovereignty means the power to compel submission to social discipline, to force an integration of ends which will admit of social operation, to subject personal desires to social control. The coexistence of equal powers by two Roman consuls would not mean that there were two final authorities, but either that no issue had arisen to test the seat of sovereignty, or that both officials were creatures of a hidden sovereignty. When crises arise which demand some strong arm to force settlement, it does not help to be told that a number of arms have each a bit of power. When sovereignty means final authority, divided sovereignty is a contradiction in terms. When one is seeking a principle for settling critical issues, an offer further to unsettle the issues by introducing several more contending factors is hardly helpful.

It is perhaps worth while to dwell on the indivisibility of sovereignty a bit further. It has often been said in criticism of the supposition made so commonly in the seventeenth and eighteenth centuries of a state of nature which through the social contract gave place to the state of political society, that neither of these states ever existed in its purity, and that what we find in our study of history is a series of social organizations which lie at various points between the two extremes. It is a valid criticism; for the historic states are all combinations of a certain amount of unorganized chaos and a certain amount of authority, approaching, now the anarchy of a state of nature, and now the absolutism of a state of political society. Is it not possible to say also that neither of the extremes would be desirable? Under the former, every difference of personal or group choice would lead to serious friction, and rampant individualism would defeat its own purpose by making all choices of alternative goods alike precarious. Under the latter, the spontaneity of life would be crushed, the constraining weight of officialdom would destroy all fresh vital impulses, and the whole absolutistic structure would arouse an ever-increasing force of sullen protest which would be bound to lead to eventual overthrow. Only a state in which every person was in complete and violent conflict with every other would justify absolute power, and absolute

⁴ Hobbes's *English Works*, Molesworth edition, Vol. III, pp. 85-86.

power would but produce complete and violent conflict. But absolutism and the indivisibility of sovereignty are two quite different things; and though Hobbes, who first in modern times emphasized sovereignty, also happened to be an absolutist in his politics, there is no reason for confusing the two theories. Sovereignty in each issue which arises must be one; but the same power which decides certain issues need not be, and seldom is, the power which decides all. Yet it will not do to lay it down as an axiom that certain issues concern a different sovereignty than other issues; for the exercise of sovereignty will depend upon the given alignment in each situation, and what authority can make itself obeyed is a simple matter of fact and not a matter of theory. The whole supposition of a divided sovereignty is based on a wish that people would settle more of their issues by voluntary compromise without the need of compulsion by competent authority. But the wish is more pious than a corresponding supposition would be sound; and hence the theory which mistakes the wish for the truth of the corresponding supposition is not exactly adequate.

2. In the light of these considerations about the actual facts of sovereignty, it is interesting to turn to the political philosophies in which in modern times sovereignty has been discussed. Clearly these philosophies are to be classed as so much propaganda. They are endeavors to secure the recognition of some aspirant to sovereignty rather than a description of existing alignments of power. They are attempts to put through some cherished integration of ends rather than objective interpretations of an actual order. Filmer's insistence upon the sovereignty of the king of England was motivated by the hard and cruel fact that the king did not have the power which Filmer wished him to have; and his work on *The Necessity of the Absolute Power of all Kings* (1648) betrays quickly that the necessity existed only for those who wanted to achieve a particular order different from what was actually given. Harrington's theory of the sovereignty of the people was surely propaganda in the time of the Cromwellian despotism. Locke side-stepped on the whole issue of sovereignty, evidently hoping to substitute the law of nature for the exercise of all force; and his treatment of the relations of the executive and legislative powers which defended the order existing in 1689 baffles any attempt to determine which he considered to be the supreme and final authority in cases of conflict. But conflicts did arise, and the ensuing two centuries in England produced advocates of many different solutions. Bentham and many another "radical" would put sovereignty into the hands of popular majorities. Stuart Mill would put it into the hands of the people as they were led and directed by the wisest of

their own number. Burke would put it in the established institutions of government as they were defined in their respective functions and powers by such a treatise as that of Blackstone. Godwin would make each man his own sovereign, and the socialists would subordinate every man to some rather mythical sovereignty called the "state." Thus one does not have to go outside England to find representatives of nearly every conceivable programme of political action.

Surely these philosophies are, however, nothing but programmes, programmes of action, programmes which their advocates hoped to help realize by describing them eloquently and treating them as if they were already realized. Taken as pieces of political propaganda, these different and opposed philosophies are intelligible, their motivation is clear, their moral significance is evident. Taken as attempts to discover some metaphysical entity, a sovereignty which is not the particular sovereignty of their own day and generation, but which exists already and eludes capture, which would, if captured, be a priceless treasure, they are confusing. Historians have abused the political philosophers of England by making their moral programmes into descriptions of some mysterious essence, a sort of philosopher's stone, and have reduced the fascinating story of keen propaganda into as ridiculous a venture as *The Hunting of the Snark*. Sovereignty, as a fact of political life, may please or displease various factions and individuals who find themselves subject to its sway; but no good is accomplished by supposing sovereignty to be something else than it is. It is easy to interpret the subject-matter of the different political philosophers as the skeleton of some plan for improving the social order, for achieving certain cherished ends, for realizing certain human goods. It is hard to interpret their subject-matter if it is supposed that the thing under discussion is the same objective fact or being, seen in so many different places at the same time and in so many different guises. Political philosophy is more concerned with human aspirations than with scientific descriptions of the given order. Viewed as so much aspiration and as so much programme for action, the philosophies of sovereignty are significant human creations; but viewed as successive attempts to locate a metaphysical essence, they are distressing futilities. Sovereignty may be described as it is found, or it may be described as one wishes it were. But if the latter thing is done—and the political philosopher as distinguished from the political scientist attempts to do just that—it is not to be confused with the former. To take a piece of political philosophy and to read it as a descriptive analysis of the data of politics is to make out of sovereignty, not a fact of a nobler order than other facts,

but a dangerous lure which, like the pot of gold at the end of the rainbow, leads men on and on until they meet an awful fate in an unknown land far from home.

3. The present critical state of international problems is such as to tempt me to draw certain conclusions concerning them from the criticism just given of the idea of sovereignty. Sovereignty has been defined as power sufficient to deal with competing groups with opposed programmes of action and to force a peaceful compromise; and it is most properly exercised in the interests of the contending parties and of the other parties who would be seriously affected by an open contest of violence. Sovereignty, consequently, must exercise control over an area as extensive as the issue to be settled. For world-wide problems, we need a world-wide sovereignty. Attempts to substitute arbitration will be successful just as far as voluntary compromise is accepted by the contending factions, but no further. It is obvious in the light of the Great War that there are issues which voluntary compromise will not resolve; and it is obvious that we have no adequate power to compel compromise by force, that is, no international sovereignty. We may choose, therefore, between two alternatives. We may permit the "state of nature" and the "war of all against all" to continue in international affairs, striving to be on the winning side, and assuming, though the facts are against us, that the winning side at least will profit from such a social order. Or we may seek to create a sovereignty to which of course we ourselves will have to be subject as well as all others. This sovereignty would not be needed to solve every issue, its very existence would perhaps make its frequent operation unnecessary; but it would be available in emergency.

The great practical opposition to the creation of an international sovereignty to-day is nationalism, that is, the desire to have one's own national state irresponsible and supreme. But to limit sovereignty to national boundaries is equivalent either to a denial that there are international relations which may be productive of conflict, or to the assertion that one prefers rather to have his own nation defy the world in order to obtain its own integration of goods than to compromise. The former alternative is falsified by numerous facts. The latter gives color to H. G. Wells's recent definition of a nation: "A nation is in effect any assembly, mixture, or confusion of people which is either afflicted by, or wishes to be afflicted by, a foreign office of its own, in order that it should behave collectively as if it alone constituted humanity."⁵ The habit of speaking of a national government as a sovereign power is confusing; for though it is sovereign in many a matter, it is clearly

• H. G. Wells, *The Outline of History*, Vol. II, p. 453.

not sovereign when it is itself one party to a dispute which requires either a forceful settlement or a compromise with other parties. The supposition of sovereignty as a metaphysical essence possessed by certain national units is doubtless the reason why the difference between a government's relation to its own subjects and its relation to other governments has not been properly stressed. To call a government which is sovereign in internal affairs also sovereign absolutely would be equivalent to calling a man who was the son of his father also the son of his brothers and children. In so far as claims to the sovereignty of a national state in the settlement of world-wide issues are due to conviction that its proposed programme for the world-wide integration of contending standards and policies is the wisest or the easiest to effect, those claims are an intelligible matter. But most assertions of national sovereignty in international affairs are due, not to heroic resolution to defend a cherished choice of ends, but rather to blatant egoism and irrational pride. Most of what is called "national honor" is only so much national bumptiousness. Just as the theory of the divine right of kings was usually a defense of what T. H. Green well calls "a divine right to govern wrong,"⁶ so the claim that national sovereignty is unlimited in the field where a nation, from the very nature of the case, can seldom be sovereign without bitter struggle, is usually equivalent to the assertion that the nation has the right to act unjustly when it so desires. One wonders how much the motto "America first" is not an insistence that other nations shall not be privileged to criticize America's actions, to hold their own cherished ideals, to receive due consideration in the settlement of world policy. Yet no nation can reasonably hope to be unaccountable. With nations as with individuals, sheer will can not create the goodness of the ends sought, nor determine the badness of all other ends than one's own. Sheer will can not annul the rightness of different choices of pluralistic goods, nor can it repair the harm done by crushing other contending forces when integration and compromise are possible. Thus much nationalism, though put forward as a moral principle, is a cloak for unjustified aggression; and unless it is disciplined by a superior weight of a real international sovereignty, it is almost sure to become the cause of the downfall of human civilization.

I have no desire to malign all nationalism. Nationalism was, in the days when most human contacts were over smaller areas and human conflicts concerned only those who lived within the bounds of one single nation, a powerful force for right, a means of mediation which made possible the integration of diverse interests and

⁶ T. H. Green, *Works*, Vol. II, p. 385.

thus the realization of a greater number of human goods. And it is still, in spite of the widening area of human contacts, a wholesome force within its own realm. Only when it is assumed to be competent to deal with international problems does it become a seed of dissension instead of an instrument of union.

Various arguments in favor of this or that kind of an international order must be understood, like the attempts to determine the locus of sovereignty within a nation, as propaganda rather than as description of existing facts; and their importance lies in their betrayal of the way in which contending parties hope to secure the determination of international policies in accordance with their own choices of ends. Opposition to any and all internationalism is a confession of allegiance to anarchism, a resolution to make might right, a determination to carry through one's own national programme at any cost to oneself or to the world. The offer to enter into an association of nations on the condition that all other nations will agree with one's own definition of international policies,⁷ is utterly idle. It reveals a naïve supposition that one's own principles and ideals are alone virtuous, that right is single and absolute, that obstinate adherence to one's own preference is necessarily heroism and sublime faith. Internationalism is agreement to compromise rather than to risk ruin in combat, which is different from assuming one's own selection of goods to be in accordance with an eternal and immutable principle. No one should expect that the decision of an international order would always be pleasing to oneself; but he may expect that agreement under compulsion will be beneficial in the long run. Of course resistance to constituted authority, when such resistance is worth the cost, would be just as possible under an international organization as under a system of international anarchy; and the fact that it would then be called revolt or civil war instead of merely war would make it no different in principle. But the intelligent policy seems to be to enter into international organization as better than retaining international anarchy, whether such organization offers complete satisfaction to one's own interests or not, to accept check to one's interests when check comes as a temporary matter, to carry on the effort to realize one's own ideals through education and propaganda rather than by violence, to make the international organization rather than open conflict the field of one's endeavors.

III

In conclusion, I desire to sum up my argument. Since goods are plural, since no one selection of goods is authoritative, since

⁷ Cf. *The New Republic*, November 10, 1920, pp. 254-255.

many personal choices can legitimately be made, since antagonism and discord are recurrent and certain, therefore, the requirements of the moral life demand the greatest possible harmonization and integration of rival programmes of action. On the one hand, no single principle of eternal justice is possible; on the other hand, mere force can not create right. Rather it is true that compromise is the sole alternative to violence as a means of achieving human excellence. Since there is an arbitrary element in any moral code, force must always enter into the attainment of our ends. But force need not be exercised always by one of the contesting parties, but may be exercised by a sovereignty, that is, by a power sufficient to compel a peaceful compromise. Definitions of the locus of sovereignty are but so many attempts to direct the course of events to a desired goal, and are all alike legitimate as such. Sovereignty remains, however, essential to peace, wherever it may reside from time to time. And where no sovereignty exists, its creation is, in nearly all instances, the first step to the common good, even of those who are to be most sternly disciplined thereby.

Henry Adams spoke of politics as "the systematic organization of hatreds."⁸ It is such, and in a deeper sense than he intended to convey. He meant only that certain factions seek through political struggle to perpetuate their own rancors; but it is also true that politics is the practical, and as yet the only discovered, means for organizing conflicting and mutually hateful dispositions into a community of peaceful functioning. Such organization does not, indeed should not, always eradicate the hatreds, which to a certain extent are healthful incentives to endeavor. But it permits them to obtain their ends with most order and least harm to themselves and others. The extreme supposition that sovereignty is needed in every issue is contradicted by numerous peaceful compromises every day. The other extreme supposition that sovereignty is never needed is also contradicted most painfully by common experience, and is but the pious hope of unduly optimistic souls. The latter supposition sometimes finds expression in the theory that only the free agreement of free men is properly called sovereignty, and that power to compel compromise should not exist or be recognized in political theory. But if the word sovereignty is preëmpted for the common fact of such peaceful compromise, then some other word would have to be found to denote the other and likewise common fact of refusal to compromise except under the threat of superior power. However much all theorists may agree that mutual and willing compromise is more desirable than the exercise of sovereignty upon refractory parties, yet human society has never been

⁸ *The Education of Henry Adams*, p. 7.

able to get along, and no indication is present that in the future it will be able to get along, without a power sufficient to compel agreements where stubborn persons or groups are inclined to refuse. One overwhelmingly important practical problem before contemporary society is simply whether this truth will lead to the erection of a world-wide sovereignty before the clash of competing forces wrecks still further men's dreams of a better world.

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THE COMPLEX DILEMMA

A CURIOUS volume might be filled with the blunders of logicians. The blunders are not few, and some of them are both amusing and instructive. But there is one blunder that is not amusing, unless the spectacle of human frailty is in itself amusing; and I do not see that it is in any way instructive, unless the advocates of symbolic logic can draw from it one more illustration of the value of their devices. The blunder is an old one—how old, I do not know. I find it repeated in manual after manual that I open, some of them the works of men of distinction and even eminence. No doubt it has been pointed out before, though I do not know where—perhaps many times before; but I make no apology for pointing it out again. For such blunders are amazingly long-lived. We take them over from our teachers, as they took them over from theirs; and we teach them in our turn without a shadow of doubt as to their perfect correctness.

The complex constructive dilemma is described as a form of syllogism, in which the major premise is compound, consisting of two (or more) hypothetical propositions; while the minor is a disjunctive proposition, the members of which are the antecedents of the major; and the conclusion is a disjunctive proposition, the members of which are the consequents of the major. The complex destructive dilemma has a like major; its minor is the disjunction of the contradictories of the consequents of the major; and the conclusion is the disjunction of the contradictories of the antecedents. The two modes are figured thus:

If *A* is *B*, *C* is *D*; and if
E is *F*, *G* is *H*.

But either *A* is *B* or *E* is *F*.

Therefore either *C* is *D* or
G is *H*.

If *A* is *B*, *C* is *D*; and if
E is *F*, *G* is *H*.

But either *C* is not *D* or *G*
is not *H*.

Therefore either *A* is not *B*
or *E* is not *F*.

Both forms are fallacious. As a matter of fact they are not radically distinct, either being readily transformed into the other.

Consider the following example:

If this wound is infected, it is serious; and if it is not infected it is painful.

But the wound is either infected or not infected.

Therefore it is either serious or painful.

It is evident that the conclusion that is warranted is not the disjunction that is given. The wound may be both serious and painful. All that we can infer, therefore, is the *logical sum*: the wound is serious or painful, in the sense which admits that it may be both. The correct conclusion might, indeed, also be expressed as a hypothetical proposition: If the wound is not serious, it is painful; or in the equivalent form: If the wound is not painful it is serious.

The fallacy seems to me to have a double explanation. In the first place, it is evidently due, in part at least, to the ambiguity of common speech, which does not distinguish between the disjunction and the logical sum. But, in the second place, there is a corresponding unclearness in the major. When I say: "If it is infected it is serious," I refuse, as a logician, to commit myself to the inference, that if it is serious it is infected; I insist that if the wound be not infected it may be serious *anyhow*. Similarly, when I say: "If it is not infected it is painful," I reserve the possibility that it may well be painful if it *is* infected. But when the two proportions are set side by side, the contrast has the effect of exaggeration. I am led to think of the consequents as being characteristic of the antecedents, and thus as being mutually exclusive, just as the antecedents are.

But not only is the constructive dilemma fallacious. When the fallacy is corrected by the substitution of a logical sum for a disjunction in the conclusion, the argument is evidently *redundant*. For there is no need for a disjunction in the minor. A logical sum (or equivalent hypothetical proposition) is sufficient. In the argument here used for the purpose of illustration, as in so many others which the manuals contain, the minor is indeed a true disjunction, for its members stand to each other in contradictory opposition. But the conclusion is not a whit more solid for that. What is essential to the argument is of the form:

If *A* is *B*, *C* is *D*; and if *E* is *F*, *G* is *H*.

If *A* is not *B*, *E* is *F*.

Therefore if *C* is not *D*, *G* is *H*.

This appears, on examination, to be a typical sorites. We may arrange it thus:

If *C* is not *D*, *A* is not *B*.

If *A* is not *B*, *E* is *F*.

If *E* is *F*, *G* is *H*.

Therefore if *C* is not *D*, *G* is *H*.

In this connection it may be remarked that while the simple dilemma is not fallacious, it is redundant. Consider the following example:

If he accepts the position at Harvard, they will get married at once; and if he accepts the editorship, they will get married at once.

But either he will accept the position at Harvard or he will accept the editorship.

Therefore they will get married at once.

The minor says more than is necessary. That he will not accept both the position at Harvard and the editorship is irrelevant if true. All that we need to know is that if he does not accept the position at Harvard he will accept the editorship.

I will conclude by quoting, for comparison's sake, an example of the complex destructive dilemma. It is from Jevons, who himself quotes it from Archbishop Whately. It is thus a hoary sinner. Thousands of students have been called upon to look upon it as an exemplar of rationality. "If this man were wise, he would not speak irreverently of Scripture in jest; and if he were good, he would not do so in earnest; but he does it either in jest or earnest; therefore he is either not wise, or not good."

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REVIEWS AND ABSTRACTS OF LITERATURE

Les Paralogismes du rationalisme. LOUIS ROUGIER. Paris: Félix Alcan. 1920. Pp. xiv + 540.

This is a very interesting and useful, but a somewhat curious book; interesting and valuable for the information it contains, and somewhat curious for the writer's own philosophy in certain respects, and for what seem to be the motives which lie behind this very solid piece of work.

The purpose of M. Rougier is primarily to examine and expose question-begging intellectualism in every form. The book begins by stating that intellectualism "seems" to-day a lost cause, but that unfortunately this is far from true. The habit of dialectical apologetics still continues. Naïve and traditional ideologies hailing from the French Revolution, or from various chapters in the history of philosophy, put enthusiasm in the place of criticism. The generous

impulses that give life to popular fictions appeal to metaphysics and logic in defense of their uncriticized methods. What are these fictions? To a great extent they are those that constitute the *mystique* of twentieth century democracy.

M. Rougier uses the word "rationalism" in a sense a little unfamiliar, perhaps, to American readers. He means by it, to be sure, the habit of *a priori* and deductive argument, but he means, also, that "ism" that translates its admiration for reason into a doctrine about it, the doctrine namely that found its classical expression in the theory that reason is the specific characteristic of man which differentiates him from other animals. Since reason, not being an accident, was held to be equally characteristic of all men, the dialectical consequences for an idealizing theory of democracy are obvious enough, quite regardless of what the facts may happen to be.

Of course the earlier history of rationalism in this sense of the equal endowment of all men with reason, and consequently with equal goodness, equal competence and equal rights to power, brought extraordinary benefits. "But to-day, rationalism seems to have fulfilled its civilizing mission. Destined, essentially, to be a work of critique and destruction, it had nothing wherewith to reconstruct and found anew. Sowing broadcast in the world the idea of natural equality, of the identity of reason in all men, from which follow equal rights, it has led western civilization to the most conspicuous paradox in history" (pp. 48-49).

Now this is an idea that Americans are pretty sure to resent, bred up, as most of them are, in the "rationalism" here under discussion. But, for the French, democracy has not had the colonial simplicity it has had in America, and which, perhaps, it some time ago ceased to have here. Accordingly, the French may prove the prompter critics of problems that will be ours as much as theirs, and American philosophers must not be caught in the dialectic they, or most of them it is safe to say, imbibed with their first school books of United States history. M. Rougier, to be sure, seems caught in another, and no less naïve, dialectic. He fails to recognize, at least he fails to admit, that these philosophical convictions so at variance with the facts are programmes of action; and he quotes Bentham (I have to render from the French): "Why this zeal to proclaim these rights as unconceded, as inalienable? No one ever found them anywhere. The less they exist, the more noise there is to persuade us they have always existed" (p. 45). Of course! but one need not pause to explain that.

In the body of his work, M. Rougier trails the guilty fallacy of

the ontological argument from one philosopher to another. Here he has done a very laborious and a very useful piece of work. The story is accompanied with complete references to sources, so that his text may be used as a guide to them. I think the whole matter is by no means put so simply as it might be, but simplicity is a virtue that comes, or should come, from long handling of a theme and M. Rougier, I fancy, is giving us the first organization of an immense material.

Perhaps the most interesting section to a majority of American readers will be the one on realism, realism for the most part, indeed, of the older stripe. To be sure the word realism is used in a more comprehensive sense than we are accustomed to. Realism, for M. Rougier, seems to be any affirmation of existence which goes beyond the evidence in hand. In this sense, the most audacious and uncompromising "realists" have been the great idealists. But this use of the word helps the writer to make a very interesting classification and exposé.

M. Rougier protests against what may be a defect inherent in all intellectual method—the conceptual simplification of a subject matter. Philosophy seems, he insists, incorrigibly the victim of the assumption that men of different times, places and conditions think alike and are alike. The old dialectical definition of men still encumbers our analysis. What is obvious, M. Rougier contends, if we only observe mankind candidly, is the infinite variety of mental make-up. He goes so far as to suggest that the principle of inference is not uniform. M. Rougier is both right and wrong. It does not follow that because different men use different premises, they do not all apply the principle of contradiction. But on the other point, M. Rougier may well be right; it is likely to be more important for us to know what peoples' premises are and the will that their arguments defend, than the syllogistic forms they might be put into.

How M. Rougier would correct the extravagances of the *mythe rationaliste* is not altogether clear. Presumably by a consistent empiricism where existence is concerned, and the recognition that logic is a strictly formal technique without, as such, any ontological implications. His estimation of current academic philosophical problems is one that we are, in America, not unfamiliar with: "The problems of metaphysics are not real problems in the sense that the questions raised relate to real data. They are pseudo-problems, resulting most often from erroneous types of explanation. They arise especially when, in order to solve them, we demand explanation of a different type from the one corresponding to the mentality which raises the question" (p. 514). "It is we, indeed, who create

the mystery of the world by peopling it with saving, noble and formidable enigmas . . . Men are more willing to be ignorant than to acknowledge the evidence that there is nothing to discover. We agree that the world shall be a cruel enigma; we revolt at the thought that there is no enigma, and that things, in their indifference to morality, simply are" (pp. 520-21).

There is probably much behind a book like this that French readers naturally understand, but which American readers need to have explained. The writer seems concerned about traditions from the French Revolution, which may lend themselves now perhaps, to the enterprise of another revolution, humanitarian, perhaps, in its phraseology, but contradicting in its effects all that the phraseology proclaims. No doubt men will always aspire to give their dreams the form of logic, but that aspiration is a form of conscience that men should cling to, for without it there could be no will to criticize and clarify.

I should not, however, give the impression that the book is motivated chiefly by this consideration. Professional philosophy shows still so many examples of apologetic sophistry (pp. xi-xiii) that an examination of their technique is abundantly justified.

M. Rougier promises to support many of his claims in a work to be devoted to the history of the real distinction between essence and existence from Aristotle to Suarez, which, to judge by the pages on medieval logic in the present work, should be of exceptional interest.

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The Problem of the Nervous Child. ELIDA EVANS. New York: Dodd, Mead and Co. 1920. Pp. 299.

This book is written to aid parents and others in the management of "problem" children. The author speaks from the psychoanalytic point of view, making use especially of the concepts originating with the Zürich school of psychoanalytic thought. Such topics as the development of repression, symbolic thought, defense reactions, the parent complex, buried emotions, muscle erotism, the tyrant child, teaching of right and wrong, self and character are treated, quite largely by the method of illustrative cases. This leads, at times, to conspicuous lapses from good literary form, the material apparently being transcribed from case-histories without sufficient revision as to sentence structure.

The educational psychologist who insists on verification, or attempted verification, by laboratory methods, would regard as mystic

rather than scientific such concepts as "the censor," "the libido," "the sublimation of the libido," "buried emotions," "muscle erotism." Nevertheless, the general effect of the book upon parents who read it will tend to be what the author desired. It will aid them to understand children and to deal with them more wisely—especially in the case of the child who is constitutionally ill-balanced.

The work is recommended by Dr. C. G. Jung, in the introduction which he has written.

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JOURNALS AND NEW BOOKS

SCIENTIA. January, 1921. *The Present Position of Celestial Mechanics* (pp. 1-12): H. C. PLUMMER (Dublin).—A very general characterization of the workers in this field. The relativity theory will make no break in the continuity of development of this science. *Les Lignes Spectrales et les Théories Modernes de la Physique* (pp. 13-22): P. ZEEMAN (Amsterdam).—After an historical review, concludes that Bohr's model of the atom is at present the best verified and most fertile of atomic hypotheses—but unfortunately is internally self-contradictory. *Le Finalisme de la Vie* (pp. 23-40): FILIPPO BOTTAZZI (Naples), with reply by EUGENIO RIGNANO (Milan).—The terms suggesting teleology are always vague and even verbal, and should be eliminated from physiology. The editor, in his well-worded reply, argues that life does involve new categories, and these call for new terms, which are perfectly capable of precise definition. *The Geographical Factor in Balkan Questions* (pp. 41-50): MARION I. NEWBIGIN (Edinburgh).—In the Balkans there are no natural frontiers of geography or race. To apply there an abstract principle of self-determination of peoples is to encourage interminable wrangling. *Reviews.* Leclerc du Sablon, *L'Unité de la Science*: A. MICHEL. B. K. SARKAR, *Hindu Achievements in Exact Sciences*: GINO LORIA. P. Duhem, *Le Système du Monde*, vol. 5; H. Maepheron, *Herschel*; P. F. Alexander (compiler), *The Discovery of America (1492-1584)*: A. MIELI. A. C. Crehore, *The Mystery of Matter and Energy*; N. R. Campbell, *La Théorie Électrique Moderne* (translated from English by A. Corvisy); F. M. Jaeger, *Lectures on the Principle of Symmetry and its Applications in all Natural Sciences*: A. BOUTARIC. S. Young, *Stoichiometry*; A. W. Stewart, *Stereochemistry*: B. L. VANZETTI. M. Arthus, *La Physiologie*: FILIPPO BOTTAZZI. F. M. Duncan, *How Animals Work*: E. S. RUSSELL. H. F. Delgado, *El Psicoanálisis*; A. Maeder,

Guérison et Évolution dans la Vie de l'Âme; la Psychanalyse: CHARLES BAUDOIN. J. M. Keynes, *The Economic Consequences of the Peace*: CAMILLO SUPINO. D. Bellet, *Le Commerce Allemand. Apparences et Réalités*; A. de Farlé, *La Préparation de la Lutte Economique par l'Allemagne*: WILLIAM OUALID. C. Bresciani-Turroni, *Mitteuropa*: A. MARIOTTI. A. Cramb, *L'Imperialismo Britannico* (translated from English by G. Salvatore); A. Crespi, *La Funzione Storica dell'Impero Britannico*: ETTORE ROTA. T. Dennett, *The Democratic Movement in Asia*; W. Paton, *Social Ideals in India*; K. K. Kawakami, *Japan and World Peace*: P. MASSON-OURSSEL. J. Tchernoff, *Les Nations et la Société des Nations dans la Politique Moderne*; E. Milhaud, *Plus Jamais!* G. Scelle, *Le Pacte des Nations et sa Liaison avec le Traité de Paix*: ALESSANDRO GROPPALI. *Periodicals.* Review of the new collection of scientific reprints: *Les Maîtres de la Pensée Scientifique* (Gautiers-Villars, Paris). *Works Newly Received*, with brief reviews.

MIND. October, 1920. *Meaning of Meaning (Symposium)* (pp. 385-414): F. C. S. SCHILLER, BERTRAND RUSSELL, H. H. JOACHIM.—Schiller's criticism of Russell's theory of meaning, followed by Mr. Russell's reply, and comment upon the resultant situation by Mr. Joachim. *The Philosophical Aspect of the Theory of Relativity (Symposium)* (pp. 415-445): A. S. EDDINGTON, W. D. ROSS, C. D. BROAD, and F. A. LINDEMANN.—Eddington distinguishes between two sets of laws: "the laws under which the objective world is developing itself, and the laws inherent in the overlapping of the different aspects under which we relate it to ourselves." Ross undertakes to show that "one of the difficulties about relativity is that its supporters seem in the very act of arguing for it to be implying its opposite"; this criticism is answered by C. D. Broad. Lindemann states that "the main philosophical advance to be claimed for the general theory is to the emphasis it has laid upon the fact that the conceptions we choose to form about geometry in the four-dimensional space-time manifold which forms our universe are entirely arbitrary." *Do We Know Other Minds Mediatly or Immediately?* (pp. 446-457): JOSHUA C. GREGORY.—Finds that there is "no warrant for Mrs. Duddington's condemnation of 'the usual psychological doctrine that knowledge of minds is indirect.'" *Some Modern Æstheticians* (pp. 458-471): H. R. MARSHALL.—A survey of the theories of Bullough, Baldwin, Croce, Carritt, Bosanquet. *Discussion. The Basis of Bosanquet's Logic*: L. J. RUSSELL. *Critical Notices. God and Personality; Divine Personality and Human Life*: The Gifford Lectures by Clement

C. J. Webb: G. GALLOWAY. *New Books*. Albert Kaploun, *Psychologie Générale*: L. J. RUSSELL. Wilfred Lay, *The Child's Unconscious Mind*: BEATRICE EDGELL. H. C. Warren, *Human Psychology*: F. C. BARTLETT. Chas. E. Hooper, *Common Sense and the Rudiments of Philosophy*: L. J. RUSSELL. Th. Ziehen, *Lehrbuch der Logik auf positivistischer Grundlage, mit Berücksichtigung der Geschichte der Logik*: A. E. TAYLOR. Julius Pikler, *Sinnesphysiologische Untersuchungen; Schriften zur Anpassungstheorie des Empfindungsvorganges; Theorie der Konsonanz und Dissonanz*: H. J. WATT. *Philosophical Periodicals*.

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Stevenson Smith and Edwin Guthrie. *Chapters in General Psychology*. (Revised Edition). Seattle, Wash.: University of Washington Press. 1921. Pp. 181.

Tilley, Arthur. *Cambridge Readings in French Literature*. Cambridge University Press. 1920. Pp. 224.

Wheeler, Raymond H. *An Experimental Investigation of the Process of Choosing*. Eugene, Oregon: University of Oregon Press. 1920. Pp. 59.

NOTES AND NEWS

Professor E. G. Spaulding, of Princeton University, recently completed a course of four lectures at the Brooklyn Institute of Arts and Sciences on the following topics: What Am I? What Can I Know? What Should I Do? and What Should I Believe? Professor Spaulding has also been lecturing before the People's Institute of New York City this winter, and will give a course on the Philosophy of Evolution at the Harvard Summer School this summer.

A new edition of Bradley's *The Principles of Logic* has just been brought out by G. E. Steehert & Co., of 151-155 West 25th St., New York City. This edition is an anastatic reprint of the original edition which was published in London in 1883, and which has been out of print for some time.

THE JOURNAL OF PHILOSOPHY

A TENTATIVE ANALYSIS OF THE PRIMARY DATA OF PSYCHOLOGY.

IN the attempt to understand the conditions of psychological reactions students of behavior and especially human behavior are experiencing a need to analyze more thoroughly and to describe more exactly the fundamental data with which they are working. And what are these fundamental data? Obviously, responses to stimuli. At once we are plunged into an investigation of the essential principles of human adjustment because our first acquaintance with behavior indicates conclusively that stimuli and responses are polar phases of a single occurrence. We can not understand the response without an examination of the stimulus, nor can we isolate or handle adequately the stimulus without an investigation of the complete segment of behavior in which both play or have played a part. We may, then, state our present problem as an attempt to clarify the natures of (1) a stimulus, (2) a response, and (3) a segment of behavior.

I

Let us begin our study by a consideration of the segment of behavior, which from the standpoint of scientific psychology we look upon as an arbitrarily selected portion of the activities of a person or animal. The point is that whenever the psychologist undertakes to describe a reaction of an organism he must, in order to have any description at all, divide off, as a definite portion of behavior, the adjustment in which he is interested from its predecessors and successors in the chain or stream of actions. In this manner the psychologist obtains, in spite of the difficulties of the material, a workable descriptive unit. Now when we consider the extreme complexity and manifoldness of human action we must agree that unless we include in our unit as many factors as possible we stultify our descriptions and make them too abstract for any use. Consequently, we shall find that the psychological unit is always the most conveniently isolated series of responses to stimuli which can be said to represent a definite specific adaptation. Such an adaptation is exemplified by jumping out of the path of a flying missile, or picking up a book. To this unit of adjustment we apply the term "pattern of response."

A pattern of response is, therefore, in every instance an extremely variable and unique sequence of processes, although in similar stimulating circumstances a describable uniformity may be observed. Such uniformity as we can observe in the organism's adjustments constitutes the basis for the predictability of psychological behavior, and we may trace this uniformity in the pattern of response to the presence in it of one or more definite response systems. Consider the responses of a person in a tennis game in which certain stimuli in the form of a special play are offered him. Knowing something of the person and the conditions of his acquiring and retaining certain reaction systems, one may expect a particular kind of response play from him, and although we may know nothing of the responses accompanying the tennis adjustments proper, such as the player's thoughts, whether related or unrelated to the game, his subvocal utterances and other byplay responses which always form part of such a segment of behavior, still the central phase of the adjustment mentioned, or the tennis playing as a series of definite reaction systems, will characterize for us the total segment of behavior. In this particular case the segment of behavior will coincide pretty well with what we ordinarily call the "form" of play, and the predictability phase of the person's playing will appear in the observation whether the player is or is not true to form.

Although the uniformity of a segment of behavior is ascribable primarily to the presence in it of one or more definite response systems, still we must not overlook other factors responsible for the similarity of behavior. And first we must mention the similarity of the stimuli and of their settings, for it is obvious that the same objects appearing under the same auspices will call out the same responses. Moreover, we must not fail to consider another prominent factor in the similarity of the responses, namely, the precise conditions of the individual at the times when the actions are performed.

How important the pattern of response really is as a unit of description may be seen from the consideration that only by studying the conditions of operation of a reaction system, besides the processes coordinate with it, can we thoroughly understand it. The problems of inhibition and delay of responses can only be solved by reference to the interplay of various stimulating objects in the segment of behavior. Again, the affective coloring and the temporal duration of an adjustment can not be understood without an examination of many of the conditioning events which accompany the operation of the given reaction systems within the compass of the psychological act under investigation. The same proposition may be asserted concerning the rapidity and accuracy of any act. Briefly, we may

repeat that to learn anything more than that a given reaction system has functioned we must study the behavior setting of any given reaction system; we must study the pattern of response. Possibly the point we are attempting to make would be most emphasized by observing that what the psychologist calls illusions are merely situations in which certain reaction systems are being called out not by the appropriate stimuli, but by some other stimuli within the confines of the segment of behavior studied. Of course, when we attend to the stimulus, we might say rather that the particular stimulus has called out an inappropriate response, but the mechanism is the same whichever way we look at the matter.

Two types of reaction sequences can be isolated in any given segment of behavior. These are (1) the highly variable series of reactions we have already referred to, namely, the central reaction system or systems, with the byplay responses, and (2) the orderly and logically temporal series of reactions which may be analyzed as follows: (a) the preparatory attention response, (b) the anticipatory or precurrent reaction, which may be a perceptual or partially incipient act, an ideational or completely incipient response, or some other fully overt act, and (c) a final overt or consummatory act which we may name an emotional, volitional, thought or habit response. Any reaction under (c) may of course be a member of a chain of precurrent reactions which precedes some final adjustment, which final adjustment may likewise be an ideational or incipient reaction. Thus we may find that an emotional reaction, for example, may be a response anticipatory to a final adjustment, which may be either a definite overt act or a thought reaction.

Further, we must note that any member-reaction of a segment series may be an integration of simpler reactions. If, for example, a precurrent reaction to placing a book on the table is taking it out of a group of books, we can readily see that this latter act may comprise a series of coordinate eye-hand acts. As a matter of fact no limit can be prescribed to the development of the integrations in human behavior, especially when we consider the enormous possibilities for the combination of implicit and overt behavior of various sorts.

Such an analysis as we have made of the pattern of response affords us some slight insight into the varieties of acts which comprise actual adaptations to our everyday surroundings. In the first place, we can see what the basis is for the simplicity or complexity of our adjustments. A psychological act is simple when it contains few precurrent response systems, and the limit to such simplicity would be the case in which the distinction between the precurrent and consummatory reaction systems disappears entirely, as the

reflex segment of behavior illustrates. In the most complex behavior segments we find large series of precurrent responses anticipating the final adjustment to some stimulating object.

Further information gained from a study of segments of behavior concerns the qualitative differences in adjustments. Thus an act which consists primarily of overt reaction systems will turn out to be what is ordinarily known as a motor response, while segments of behavior in which implicit reactions predominate will be described by the conventional psychological term of reasoning. Of course, in these complex segments there never is an exclusive series of one type, but the predominant type colors the total act. Although it is not always true, yet for the most part whenever we have a large series of precurrent responses there are many discriminative phases and the total act takes on the characteristics of intelligent behavior. Again, we may observe that great variety is introduced in complex behavior by the presence in it of language reactions. Language reactions constitute the most subtle and at the same time the most efficient sort of precurrent responses; they make it possible for the person to preface his final acts by many incipient responses, for language reactions enable us to perform actions in prospect and to determine the results of such actions before actually accomplishing them. Obviously the rational segments of behavior and those constituting voluntary action will include many language reaction systems.

What is ordinarily called subconscious activity we may determine upon analysis to be complex segments of behavior from which communicative language responses are absent. It must be understood that *only* communicative language responses are absent, for subconscious acts may be replete with automatized language reactions, which are quite different things.

II

A stimulus is any object or thing which can call out a response in the organism. By object or thing we designate any actual element in the surroundings of an individual, thus using the terms in an absolutely common-sense manner. We must include among those elements trees, stones, wind, air, temperature, laws, customs, morals, ideals, *etc.*, in short, everything which influences our actions. Nor are stimuli confined exclusively to objects, for in a genuine sense we also respond specifically to the colors, tastes, odors, shapes, sizes, and other qualities of objects. Furthermore, we must add to our list of stimuli, besides objects and their qualities, all sorts of events and conditions. When we interest ourselves in the precise conditions of

psychological behavior we find that the human organism reacts to various sorts of circumstances as well as to objects. To a certain extent we may see in this fact of the extensive range of adaptational situations an important psychological difference between man and the other animals. Exceedingly significant among stimuli are the actions of the organism itself. No inconsiderable proportion of an organism's activities can be directly traced to its own immediately antecedent reactions. This fact has been most exploited by psychologists with reference to the series of reactions involved in a train of thought. Indefinitely more striking than thoughts as stimuli, however, are the various reflex actions, especially of the secretory sort. How replete the literature of psychology is with discussions concerning mysterious forces or drives controlling the actions of organisms, and simply because in many instances the writers mistake the ordinary biological-function factors of reflexes, such as the secretions of the reproductive organs, for manifestations of superbehavioristic forces.

Now crudely we may classify all the stimuli into three kinds, namely, natural, social and cultural. The first type includes all of the objects which can stimulate the lower strata of psychological organisms in common with the human species. Under the rubric of social stimuli we may consider all the objects which surround us by virtue of our living in human groups. Here we may mention such things as laws, customs, opinions, *etc.* Also this class includes all of the natural objects which have undergone modification because of the human group needs. Salient among the objects of the third class are the personal ideals of individuals which in a genuine sense are developed in the person's own experience.

Especially important is it to distinguish between the stimulus proper and the medium of contact (light rays, air waves) operating between the stimulating object and the stimulated person. This distinction is all the more important because much confusion inimical to the understanding of psychological behavior can be thereby avoided. Usually these media of contact are thought to be the stimuli and in consequence the reactions are presumed to be types of knowledge functions consisting of the presence in the knowing mind of states induced by the media of stimulation. In detail, the existence is supposed of a one-to-one correspondence between types of light rays or sound waves and specialized qualities in the mind. A serious error arises from such a view which is no less than the implication that the objects to which we adapt ourselves do not exist until after the light rays, *etc.*, "arouse the consciousness of their qualities." From the view that the sound waves, *etc.*, are the inseparable correlates of the qualities of objects, it follows that look-

ing upon the media as the stimuli commits one to a psychological parallelism, or to express it otherwise, a subjectivism.

To all of this we counterpropose the hypothesis that the light rays, heat rays, *etc.*, are simply the means whereby the organism gets into contact with the stimulating objects. A little reflection will convince us of the merit of this view, for can we not and do we not adapt ourselves to objects in the absence of any one or all but one of the large variety of media of perceptual stimulation? And of course in all ideational behavior they are entirely absent.

But let us not be at all understood as minimizing in any sense the necessity for and importance of some medium of response, since certainly, when we are merely in distance contact with an object and the light rays are removed, we can not make any immediate and overt response to that object. Moreover, we find that changes in the media introduce all sorts of possible complexities in the reaction situation, such as the distortion effects which are especially well exemplified by the stick bent in water. On the other hand, however, no quality of the response can be attributed to the mere presence of the medium of contact.

How important it is to distinguish between stimulating objects and media of stimulation may be judged from the fact that the presence or absence of such media marks the difference between psychological reactions on the one hand and biological and physical activity on the other. In the physical domain we find no action induced in an object by some other object which is not measurable as an absolute equivalent of the energy expended by the other. In other words, physical objects can only operate directly and immediately upon one another. Hence physical actions are evaluated in terms and propositions of inertia. In general, physical objects are not possessed of action systems which can be put into operation by some surrogate of the original stimulus object.

Less immediate is the operation of one thing upon another in the case of purely biological organisms, for here we have a type of organization in which it is not improper to say actions can be stored up, later to be put into operation. Consequently, the biological organism can be periodically stimulated to action which is entirely out of proportion to the force exerted upon it by the stimulating object. In tropismic action, while the range of movement is limited and the type of action is constant, the organism may still be said to be spontaneous. In other words, the biological organism has developed the beginnings of sensitivity to media of contact, although such media are identical or very intimately related with the stimulating object. This type of sensitivity in biological literature is given the name irritability. From a scientific standpoint it is clear, of

course, that these differences are all variations in the workings of different types of objects.

Consider now how differently the psychological organism is related to the objects which provide it the occasions for adjustment. Here the organism is so spontaneous and independent of the stimulating object that the former can be influenced to act by a variety of phases of the stimulating object. This condition is brought about by the objects building up, in the reactional equipment of the individual, response systems which are put into operation through the instrumentality of a variety of contact media. The psychological organism may be equipped with reaction systems so that it can be aroused to action by either the sight, sound, taste, touch, or other contact with an object. Through the use of contact media, the psychological organism can not only adapt itself to objects distantly placed, but it has been able to evolve an infinite variety of response forms and integrations to the end of acquiring delayed and inhibitory responses of all sorts, besides differential or cognitive behavior.

To psychologists' traditional neglect of the distinction between a stimulus and its medium of contact we might ascribe the responsibility for much futile discussion concerning reactions to pain. The phenomena of pain have always seemed to stand in the way of a naturalistic psychology, such phenomena being the stronghold of subjectivism, because it appeared impossible to think of pain as a quality of an object in precisely the same sense as is red or sour.

Whoever takes cognizance of this problem may see that the difficulty in interpreting pain phenomena has been due to the failure of psychologists to consider the various peculiarities in such phenomena with respect to the media of stimulation. For one thing, since pain reactions involve such destructive media of stimulation as pricking, cutting, or otherwise lacerating tissue, it is easy for us to confuse such reactions with the stimulating conditions. In consequence, it truly appears that pain is more intimately connected with the person than is true even in the case of pressure responses. From this fact as a starting point, and from the observation that pain-inflicting objects do not themselves perform the pain reactions, it was a simple step to the curious but no less common argument that pain must be in the mind since it can not be in the knife.

Furthermore, it is safe to say that when objectively we study stimulating objects, the media of stimulation, and the reactions to things as isolated phases of psychological phenomena, we will learn more concerning human behavior than is now the case. For example, much have we yet to learn concerning the qualities of electrical phenomena and their effects upon us, could we but keep distinct our

reactions from the media of stimulation, and thereby study the means of our reception of the stimulating media.

The Stimulus and its Setting. An objective study of human reactions must include in its programme of investigation, besides the media of stimulating objects, also the settings of the stimuli to which adjustments are made. For it is an indubitable fact that the person is stimulated not only by things but also by the setting or background of the objects. From a behavior standpoint the setting of the stimulus object is of extreme importance in influencing the behavior of the individual in conditioning in a large way what the person will do. A striking illustration of this fact is found in the activities of an individual reaction to a social outrage, both when the stimulus is in and out of a mob setting. Plainly we can determine that whatever differences there are in a person's behavior to the same stimulus, as in our example, they are all to be accounted for on the basis of varying conditions of the stimulating situation.

Illusions, when they occur, are to a considerable extent unexpected forms of response accountable upon the basis of the modification in the setting. Thus we may account for errors in reading by observing that the reaction which occurs is due to the failure of the stimulus to be coupled with its customary associates. The phenomena of contrast to a very considerable extent can also be described in terms of changes brought about in stimulating objects by the proximity of various kinds of surrounding things.

To conceive of stimuli as contained in a general setting conduces to an understanding of a further absolutely essential characteristic of stimuli, namely, their interrelatedness or chainlike connection. The study of complex behavior becomes futile when we presume that stimuli are each and severally unique and independent arousers of activity. Such a circumstance does not exist at all, as we indeed infer from our study of the pattern of response. Almost every situation in which we act involves a definite series of stimulations which may be intricately related one with another. The appreciation of the serial form of stimuli provides us with some insight into those complex serial responses which are generally purported to be the working out of instincts. Instead of believing in the existence of mental states manifesting themselves in a variety of connected actions, we can account for such groups of activities as direct responses to chains of interconnected stimuli. For instance, the specific acts which the individual performs in a protracted physical contest depend each upon the continuity of the series of stimulations offered by the rival contestant.

The Classification of Stimuli. Stimuli may be distinguished from each other upon a functional basis. In the first place, we may

differentiate between stimuli which call out overt responses directed toward an object present, and ordinarily called perceptual acts, and those stimuli which bring to action implicit (ideational) activities. Under the overt class we distinguish primary and accessory arousers to action, while under the implicit division we may place direct and substitution stimuli as per the following table:

- | | | |
|-------------------------|---|---------------------------|
| For overt responses: | { | (1) Primary stimuli. |
| | { | (2) Accessory stimuli. |
| For implicit responses: | { | (3) Direct stimuli. |
| | { | (4) Substitution stimuli. |

1. Overt or perceptual responses are aroused to action by the original object or situation which excited them to action from the beginning. A primary stimulus may be thought of as the object which is naturally associated with a given response, or we might say that a primary stimulus is the object which calls out a congenital response, or which is responsible for the building up of a particular response in the organism. The primary stimuli are objects in the surroundings which bring into operation original differential responses. The clearest examples in nature of such stimuli are the objects and conditions which arouse reflexes and instincts, in short, any type of congenital response system.

2. Whatever happens to be the adequate stimulus for a given response system, it is still possible to evoke that response system by stimulating with an adjunct or an accessory stimulus object. The experimental demonstration of this phenomenon is found in the now universally familiar conditioned reflex. The probabilities are that there may be several accessory stimuli attaching to a given reaction system, although this has not yet been experimentally verified.

3. Both the primary and accessory stimulation objects are directly in contact with the reacting organism, and the acts in which they function may be considered as directly observable behavior. In the domain of human psychology at least, there occur many acts which are not always observed by other than the acting individual if they are observed at all. For practical purposes we may call these types of responses thought actions. Now such implicit reactions may be called out (1) either by the object itself which is reacted to, or (2) by some other object or situation which may then be said to substitute for the original object to which the adjustment is made. A direct stimulus to an implicit act would therefore be the person of whom one is thinking, or the event in which one is planning to participate. Clearly then the person must be in immediate contact with the original object or event in order to be directly stimulated thereby.

4. In contrast to the direct stimulus, the substitution stimulus is the excitant of a response originally acquired by contact with some other object. One goes to visit some particular friend because of being reminded of him by meeting a very close friend of the former. In such a case the response is evoked by an object serving as a substitution for the object actually reacted to. Naturally enough we can trace out various conditioning factors which make possible the substitution of stimulating objects, among which are the resemblance, the common or similar use of objects, and the contextual relation of things. Apparent it is, then, that the substitution stimulus is an essential factor in all memorial and thought behavior.

It may be justifiably urged that our description of the substitution stimulus merely depicts the circumstances of any stimulus correlated with a recognition response, since every recognition reaction is indirectly aroused. Also, it might be said that every overt response involves a substitution of stimuli even though the stimulating object be the same, since every response succeeding the original adjustment must perforce be stimulated by a representative of the original object associated with the original response. In seeking for a trustworthy guide to distinguish between a substitution and a direct stimulus, we observe the following fact, namely, that whereas in the non-substitution situation the acting stimulus is one that would ordinarily call out the response in question because of an original coordination between the two, in the case of the genuine substitution, on the contrary, no such connection exists.

The operation of the substitution stimulus is clear-cut when we consider the delayed reaction in which there are several intermediary responses preceding the final actual adjustment. In such a delayed reaction some object evokes an implicit or incipient response, which in turn serves as a stimulus to some other incipient response, until finally the consummatory adjustment is made. We look upon the final adjustment as the adequate reaction to some object or situation, and as we see, it is in the end made to operate by some object or situation other than the one finally adjusted to.

III

The adjustment unit of a behavior segment is the operation of a reaction system. This system by virtue of the fact that it is an act of an organism or a person can be analyzed into a series of component functions. These components represent (1) simple acts which unite to form a larger whole such as the integration of letter strokes into word wholes in typewriting, (2) the integration of definite anticipatory and consummatory phases of an act to become a part of a

larger act, and (3) logically derived elements of a single reaction of an organism to a stimulating object. The fact is that the integrative character of psychological reactions makes it possible for all of the phases of a simple adjustment to become a single phase of a more complex reaction. The response system is, then, a unitary organismal adjustment to a stimulus and is abstracted from a pattern of response in a segment of behavior. In the following table are summarized all of the salient features of the response system:

1. Discriminative phase.
2. Conative phase, the preparatory attitude of the organism brought about through the media of stimulation, air waves, for example.
3. Affective factor, tension, strain, relief, pleasantness, *etc.*
4. Action of receptor mechanism.
5. Action of afferent transmission system (nervous conduction).
6. Action of central adjustor (synaptic coordination).
7. Action of efferent transmission system (nervous conduction).
8. Action of effector mechanism.
9. Muscular and (or) glandular phase.

Probably none of the components require any particular explanation, but in order to obviate any parallelistic interpretation of any phase of the response system we might elucidate briefly the first three members in the table.

1. The discriminative function refers to that characteristic of a psychological reaction which we might designate as the differential response. A fact of nature it is that the psychological organism acts in a distinct and specific way in the presence of different objects, or when the same objects are in different settings. This capacity of making differential responses is based upon the differential sensitivity of an organism to different qualities of things, such as colors and tastes and their respective media of stimulation, and is an elementary fact precisely as is the fact of electrostatic induction. By constant contact with numerous objects the responses become so specialized and unique as to merit the name of knowledge and when the responses are not only discriminative but anticipatory also, the reactions can be called intelligent and reflective. With the increase of the contacts of the organism with the surrounding objects the responses become, of course, more and more complexly integrated and the organism's adaptations to particular classes of things may become highly intelligent and capable.

2. By the conative component of a reaction system is meant the susceptibility of an organism to vary its position and attitude toward a stimulus because of being attracted to it through a medium

of contact. When light, air, or heat radiations come into contact with the organism they put it into a state of preparation for action upon some new stimulating object. In a genuine sense we might think of the conative characteristics of a reaction system as the factor which influences the person or organism to react to any given stimulus, since the conative factor refers to the set of the organism and the precise means in which this set is brought about. In many cases it is precisely the ease with which an organism can be set for a response to some stimulus which may condition the occurrence of the adjustment at all. Moreover, any reaction may be decidedly modified by the mode of getting set. Thus the jerkiness of a pain reflex may be ascribed to the way in which the medium of stimulation influences the organism to prepare for an adjustment. In general, the direct contact media of stimulation bring about more active and prompt preparation for responses. Very important in influencing the form of the conative factor in reactions is the number of receptors which are in contact with media of stimulation at the same time.

3. The affective factor or feeling phase of a reaction system refers to the general condition of the organism before the present stimulation, which condition greatly modifies the present reaction. Also the organism is conditioned by the present response and carries over the feeling to future conduct. The feeling factor may be described as calmness, relief, strain, tension, pleasantness, excitement, satisfaction, *etc.*, and depends to a considerable extent upon the physiological condition of the person.

In general, it must be observed that the three components of the response system which we have been describing refer much more to the functioning of the complete organism than is true of the other components. Strictly speaking, of course, none of the components can be considered as anything but an abstraction from a total unitary activity. It is possible, however, in all but the three cases specified, to correlate the components with the activity of a part of the organism in the form of specific anatomical structures (glands, muscles, end organs, nervous structures). The fact that these three former components of the reaction system can not be correlated with anything but the total activity of the organism is doubtless in large part responsible for parallelistic hypotheses. Moreover, the fact that these three components may constitute predominant phases of anticipatory reactions antedating a final adjustment, which may seem to be predominately muscular and glandular, gives rise to the notion of the uniqueness of these components.

The Classification of Reactions. Such complex phenomena as response systems naturally can not be simply classified or described

from a single standpoint. We propose, therefore, to enumerate the outstanding characteristics from several logically uncoordinated angles.

1. *Connate and Acquired Responses.* Since the psychological organism is likewise a biological organism its development parallels the unfolding of the animal form. Each starts with a complement of functions which develop to greater and greater complexity in accordance with the needs of the individual. Thus the psychological organism comes into the world equipped with definite response systems, which may be considered as the genetic prototypes of all the future response patterns of the particular individual. In other words, the complex reactions of the mature individual are developed by a process of interaction of the organism with surrounding objects on the basis of the connate action systems.

Although there seems to be no logical objection to the proposition that all responses are developed from these crude connate beginnings, yet the reactions of a mature person are so absolutely unlike the connate systems that they must be looked upon as qualitatively different. That is to say, the description of them should be in no wise compromised by the fact of their humble origin. For after all the facts of psychological phenomena are best described by considering reactions as directly deservable responses to definite stimuli. In other words, the acquired reactions which operate in our highly integrated and controlled adjustments such as thought and memory adaptations should be described as they arise to meet the needs of the organism, and as they operate and are controlled by the stimulating circumstances in which they function. Probably the best attitude toward the problem under discussion is the careful observance of both the continuity of the individual's behavior development, and the full factual description of any present reaction.

As samples of connate response systems we may cite the actions usually described as reflexes, instincts as found in the animal and infant, and random movements as found in infants. Among the acquired response systems we will naturally find the most complex integrations of behavior factors and as a typical example of them we may mention the communicative language responses, as well as all the behavior units which function in our multivariied acts of skill.

2. *Actual and Potential Reaction Systems.* Another mode of classifying reaction systems is the consideration of them as actually occurring responses in the presence of their adequate stimuli, or as latent forms of adaptation to surrounding objects when the stimuli are not operating. Under the former heading we may place all the actually functioning responses of the organism at the moment, while under the latter class we place all those responses which the individ-

ual will perform when surrounded by different objects and persons. Obviously, we can not at any instant acquaint ourselves with the complete adaptational equipment of any individual, and thus arises the necessity for performance or efficiency tests. Apparently the difference between the two types of responses reduces itself to a degree of connection with a stimulus, but the classification points to the unmistakable presence of response systems in the individual prior to their excitation by stimuli. In other words, by the term latent response we mean only to point out that the person as a psychological machine may be expected to respond in a certain way, whenever he is offered a particular stimulus, provided he has acquired the necessary response system and it is not for any reason prevented from operating. And all this in precisely the same sense in which the automobile salesman informs us that his machine will operate under definite stated conditions, although the automobile may not at that moment be actually running.

Naturally the range of potential responses includes all of the various action systems, which, when they occur, exhibit to us the precise nature or character of the person. That is to say, it will include not only the reflexes and simple habit responses but also the most complex social and intellectual activities. Let us observe at this point that whenever the terms tendency or disposition are properly used in psychology they must refer to just such particular latent reaction systems which constitute the capacities of the person when those systems are not acting, and which are the performances of the individual when they do function. Immediately upon the presentation of their stimuli these latent response systems are aroused to activity and become actual responses.

3. *Delayed and Immediate Responses.* Students of behavior in their first contacts with psychological phenomena observe the immediacy of certain responses and their more or less protracted delay, in the individual's final adjustment in other cases. Now this difference in reaction is not merely a matter of an interpolated time interval between the appearance of the stimulus and the occurrence of the response, but rather an interpolation of precurrent responses between the final response (considered the response in question) and the appearance of the stimulating object or situation.

The immediate responses can be best understood by observing that the segment of behavior in which they occur is limited to a single or a very few responses. It is for this reason that there is a close correlation between immediate responses and the simple reflex type of action. Here the first action called out by the given stimulus is at the same time the final adjustment.

In contrast to the immediate responses we find that in some seg-

ments of behavior there are series of responses resulting in a final adjustment. In these delayed responses a definite attention adjustment may be followed by a definite perceptual or ideational reaction or a series of such reactions; then finally a consummatory response will follow. Also in complex voluntary reactions we may find numerous language responses interpolated between the stimulus and the consummatory response.

Different varieties of delayed responses are found in organisms, but we can distinguish between at least two fairly clear-cut types. In the first of these types all the interpolated responses are overt reactions,¹ while in the second type the precurrent acts are language reactions or ideational processes. Naturally, the ideational or language precurrent responses are more efficient and allow for a longer time interval between stimuli and responses, and, what is more important, pave the way for the development of extremely complex behavior.

4. *Temporary and Permanent Reactions.* One of the most obvious facts about reactions is their constant waxing and waning. The former phenomenon finds its best known expression in the perseverant activity while the waning character of reactions is found in the process of forgetting. Many responses there are which remain permanently with the individual and operate in the presence of their adequate stimuli. These responses we call permanent and they are illustrated by the informational and skill reactions which give character to the individual.

Among the temporary responses are the memorial actions, which are pressed into service for a given limited period. These temporary responses do not disappear completely from the reactional equipment of the person, but they are merely disengaged from the stimulating situations to which they once were attached. Familiar psychological phenomena which throw light upon the nature of permanent and temporary responses are the amnesias and aphasias which illustrate conditions in which parts of the permanent reactional equipment of the person are temporarily lost, or we might say operate as though they were really temporary response systems.

5. *Explicit and Implicit Reactions.* Among the most important of distinctions between responses is that of the explicit and implicit response systems. Briefly, we might differentiate between these two types of responses by pointing out that in the former case some actual operation is performed upon the stimulating object while the implicit act can never be anything but a precurrent response to some final adjustment which produces some effect upon an object.

In every case an implicit response is a vestigial remnant of some

¹ Such as bodily orientations; cf. Watson, *Behavior*, p. 227.

original overt act or an incipient functioning of the whole. Because the implicit action is subtly and rapidly performed it constitutes the basis for all sorts of thinking operations. Probably the best examples of implicit responses to objects and situations are thinking and dream activities. Thoughts or ideational activities are nothing more than a subtle and symbolic repeating of responses previously performed upon some object or situation. Being vestigial responses, implicit acts may take on a large variety of symbolic forms, so that an ideational activity may be in the widest sense representative of any given act. In some cases the representing act may function more like an overt than an incipient response showing the possibility of substituting reactions, one for another. This substitution of responses is of primary importance for the integration of complex response systems.

6. *General and Specific Reaction Systems.* Although reaction systems must be considered as definite responses to specific stimuli, still we can differentiate between those systems which are aroused to action by classes of things rather than by individual objects. As we consider the order of complexity in our reactions we find that the simpler adjustments to natural surroundings are excited to action by purely individual and specific stimuli, while in the more complex social responses the stimuli may be indifferent individuals of a type of thing or event. In the complex behavior equipment of the person we find, for example, that any elderly person may stimulate us to offer him our seat. Similarly, the acts of any person may arouse our proffer of thanks. Precisely the same reactions will serve as generalized adjustments to any individual stimulus of a given class. Again, we acquire responses not to tamper with anything but that which is definitely our own property. Especially noticeable in our equipment of generalized reaction systems are negative or inhibiting responses.

IV

Fragmentary and schematic as the above analysis of psychological phenomena is, it does, we still believe, suggest some of the salient characteristics of the elementary processes involved in psychological activity. Not the least valuable aspect of such an analysis is the essential implication that psychological phenomena are the actions of a complex and highly organized individual. In effect, this means that psychology must always employ itself with data that are dynamic in character, in the sense that they are reactions to surrounding objects or things and not manifestations of complex cellular organization and functions, or of some hidden mind or soul. Considered as the operation of a psychological machine, the data of psychology are,

theoretically at least, subject to precise natural description and formulation into laws. To be sure, psychologists can not, because of the nature of the facts with which they deal, hope to duplicate in their domain the exactness and simplicity of physical formulations, but they can exclude from psychology all animistic prepossession and unscientific description.

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IS SUPERNATURALISTIC BELIEF ESSENTIAL IN A DEFINITION OF RELIGION?

IN a previous article in this JOURNAL,¹ devoted chiefly to a consideration of William James's philosophy of religion, I discussed what I called the *fallacy of false attribution*, which, I said, "consists in the erroneous interpretation of an experience whereby the experience is attributed to an external, divine source in cases where a physiological explanation is adequate to account for it." James leaves us in no doubt as to his acceptance of supernaturalism, and his consequent commission of the *fallacy of false attribution* when he appeals to the so-called religious experience as evidence for the truth of religion. In *The Varieties of Religious Experience* he says, "If one should make a division of all thinkers into naturalists and supernaturalists, I should undoubtedly have to go, along with most philosophers, into the supernaturalist branch" (p. 520). He further classifies himself as what he calls a "piecemeal" supernaturalist. "Piecemeal" supernaturalism, he says, "admits miracles and providential leadings, and finds no intellectual difficulty in mixing the ideal and the real worlds together by interpolating influences from the ideal region among the forces that causally determine the real world's details" (pp. 520-21). Others, however, might reject all supernaturalism and still insist that evidence for the truth of religion is to be found empirically in the religious experience. If supernaturalistic belief were not involved in the religious experience, that is, if it were possible for one accepting a purely naturalistic account of all one's experiences still to regard some of them as *religious* experiences, then the *fallacy of false attribution* would not occur.

The crucial question arises, therefore, as to the possibility of defining religion in naturalistic terms. Supernaturalistic or transcendental belief of some kind is commonly regarded as essential in religion, both in popular thought and also in the traditional theo-

¹ Vol. XIV. (1917), pp. 653-60. See also, for discussion of the *fallacy of false attribution*, the author's book, *The Biological Foundations of Belief* (Boston, 1921), Chs. II., III.

logical accounts such as those based upon Plato or Kant. The burden of proof, consequently, rests upon any one who goes contrary to the accepted views. Many have attempted, however, to define religion without including any specific sort of supernaturalistic belief; and I propose to examine some of these attempts and to point out wherein they are fallacious.

Those who try to define religion err frequently in two ways. In the first place, philosophers and theologians are apt to define religion as it is *for them personally*, not as it is for people in general. In the second place, philosophers and theologians may sometimes define religion as they think it *ought to be* for all mankind, not as it is actually found to be in general human experience. It is historians and psychologists of religion who are the best guides in the search for a correct definition, for they examine the institutions, ceremonies, and personal experiences which are commonly called religious.

Historians of religion and psychologists who concern themselves with religious experience agree rather generally that religion, though manifesting itself variously, from inarticulate experiences of individuals to socially sanctioned creeds and institutions, is always characterized by the presence of certain specific beliefs. Anthropologists tend at present to agree in accepting some such account of the earliest form of religion as Mr. Marett gives in his book, *The Threshold of Religion*; and, according to Mr. Marett, religion in its earliest, preanimistic stage consists of belief in a vaguely defined, unseen "power," out of which belief there arise acts of appeasing and persuading and making use of this "power." "To begin with," says Mr. Marett, "the religious eye perceives the presence of *mana* here, there, and everywhere. . . . Whatever the word may originally have signified . . . it stands in its actual use for something lying more or less beyond the reach of the senses—something merging on what we are wont to describe as the immaterial or unseen (p. 118). James, similarly, in a study of religion upon the highest level, says that religion consists of the "belief that there is an unseen order, and that our supreme good lies in harmoniously adjusting ourselves thereto."² So, at the two extremes of religious development, the lowest and the highest, we find, as these two definitions indicate, that religion is characterized by belief in some sort of supernatural reality. Mere belief in the existence of this supernatural realm, however, does not in itself constitute religion. There is in religion the further belief that some sort of human adjustment to this reality is advisable, as James states in the definition quoted above; and in practise such belief issues in overt acts of worship. The objects of

² *The Varieties of Religious Experience*, p. 53.

religious belief, differentiating it from other kinds of belief, are, then, of two classes: first, some sort of supernatural order of reality, capable of sustaining a more or less personal relationship with man; and, second, certain acts and attitudes towards this order of reality, acts regarded in the lower religions as efficacious in gaining the aid of the unseen powers, and in the higher religions, acts of adjustment to the unseen order. This would pass as a minimum definition of religion, a statement of what is necessary and no more than is necessary to constitute religion. Religion, further, depends for its existence upon the existence of the *beliefs* in the above-mentioned religious objects, not necessarily upon the existence of the objects themselves.

A wholly adequate justification of my definition of religion would involve the exhibition of supernaturalistic belief in all instances of what, by general consent, is called religion. The procedure might be a wholly empirical one, based upon a historical and psychological study of races and of individuals who have manifested the external signs of religion during the course of history, and who continue to do so at the present time. Such a study would be long and arduous, however; and, besides, many such studies have already been made. I shall limit myself, therefore, to an examination of certain definitions of religion that explicitly exclude the element of supernaturalistic belief; and I shall show that such belief is implied in these very attempts to deny its necessity.

In one of his early articles³ Professor Leuba denied that belief is essential in religion. He says: "We have in this essay insisted upon the absolute divorce which must be recognized between intellectual beliefs and religion" (p. 314). "Religion has become—or is coming to be—the conglomerate of desires and emotions springing from the sense of sin and its release" (p. 321). But here religion is said to involve belief in sin, a belief that does not occur in the merely moral life. "Sin" does not occur in the vocabulary of secular ethics. A sense of sin implies belief in a "higher," unseen order, together with the belief that maladjustment to this order exists. Consequently, Professor Leuba does not here escape defining religion in terms of supernaturalistic belief.

Others who attempt to define religion without including supernaturalistic belief may be criticised similarly. Thus Mr. Crawley, in his book, *The Tree of Life*, says that belief is not essential in religion. He says: "Religion may arise and subsist without any belief either in God or the soul" (p. 178). "The source of religious feelings and their constant support is not the belief in 'spirits'"

³ "A Study of the Psychology of Religious Phenomena," *American Journal of Psychology*, Vol. VII. (1895-96), pp. 309-385.

(p. 185). "The religious emotion is no separate feeling, but that tone or quality of any feeling which results in making something sacred. . . . Consecration—the making sacred—of elemental facts, so noticeable both in primitive and civilized life, is the normal result of the religious impulse, and of this alone" (p. 209). Then Mr. Crawley's problem becomes that of defining sacredness. He finds sacredness characteristic of the elemental facts of life, such as birth, marriage, death, and burial. "The vital instinct, the feeling of life, the will to life . . . is the origin of religion" (p. 214). Thus, at the last, Mr. Crawley does not define religion apart from supernaturalistic belief, not necessarily belief in definite spirits or in God, but in a mysterious power, that of life. The "feeling of life" which, for him, constitutes religion, is not such an attitude as that, for example, of the modern scientist who gives a mechanistic account of life, but is a belief in life as a mysterious supernatural fountain of power. Sacredness can not be defined apart from belief in a supernatural area of reality. Birth, marriage, death, and burial, regarded merely as physiological and social processes, possess no sacredness. Belief that supernatural power is manifested in such processes renders them sacred.

Although in one of his early articles, from which I quoted above, Professor Leuba defined religion without including the element of belief, in one of his later works⁴ he very definitely includes belief as a necessary constituent. Further, all who admit the relevance of the question of truth and error in religion, thereby admit the presence of belief as a universal and necessary factor. Except where belief or judgment occurs, the predicates "true" and "false" do not apply at all.

Buddhism is an instance of a religion which might *seem* to be completely atheistic, that is, without any belief in God. In practice, however, this is not the case. Pure Buddhism is more a philosophy than a religion, while in Buddhism as actually practised as a religion the Buddha himself is deified. Consequently, Buddhism may come under my definition of religion by virtue of added elements. Moreover, one may maintain, as Professor Leuba does,⁵ that original Buddhism, though disregarding gods, did involve belief in a transcendent psychic power. And Professor Hocking⁶ regards Buddhism as having what would pass for a god, that is, the law of Karma, which is the moral order of the universe.

The religion of Humanity, which positivism offers, might be cited as an instance of a religion that contradicts my definition.

⁴ *A Psychological Study of Religion*. See especially pp. 9, 10, 52.

⁵ *Ibid.*, p. 289.

⁶ W. E. Hocking, *The Meaning of God in Human Experience*, p. 333.

"The religion of Humanity," says the positivist Mr. Harrison,⁷ ". . . insists that the normal object of religious reverence lies, . . . not in the Incomprehensible, but in the Comprehensible; not in the Universe, but in this planet; not in the Absolute, but in the Relative; not in the Supernatural, but in the Natural; not in the Divine, but in the Human World." My criticism is, that the religion of Humanity, so called, is not properly a religion at all according to accepted usage of the term. Even Mr. Harrison admits this, for he says, "*Education* would be a more significant and precise phrase to use of Positivism, if we could purge *education* from its purely intellectual connotation" (Preface, p. xviii).

M. Sabatier, in his *Outlines of a Philosophy of Religion*, defines religion in terms of "feeling," and says that no element of belief is necessarily present. Beliefs, he says (p. 8), may die out, but religion will go on forever. Religion is "the feeling of dependence which every man experiences with respect to universal being" (pp. 21, 22). "This feeling of our subordination thus furnishes the experimental and indestructible basis of the idea of God" (p. 22). "The feeling of our dependence is that of the mysterious presence of God in us" (p. 23). Such a definition as M. Sabatier's does not, however, escape the admission of an element of belief. A psychological analysis of one of these experiences of "dependence on universal being" reveals in the experience a belief, however indistinct and inarticulate, in the reality of a religious object—a belief in "the mysterious presence of God in us." M. Sabatier says (pp. 23, 24) that "the material universe is not the principle of sovereignty to which it is possible for man to submit," and that the practise of religion is an "act of confidence and communion with the universal Spirit." Here is clearly involved belief in the reality of "universal Spirit," as opposed, for example, to universal matter; and this is a distinct case of belief in a religious object.

Professor Höffding, in his *Philosophy of Religion*, tries to differentiate religious experiences from other experiences without reference to belief. "Religious experience is essentially religious feeling," he says (p. 106); and religious feeling is "the feeling which is determined by the fate of values in the struggle for existence" (p. 107). Any "cosmical vital feeling" is religious feeling, according to Professor Höffding (p. 110). The doctrines, dogmas, and cults in which religion has come to be expressed are not literal, he says, but figurative. "The religious consciousness expresses itself by means of more or less figurative ideas" (p. 242). "Religious ideas . . . give figurative form and expression to other sides of the soul's life than those which are served by intellectual ideas" (p. 243).

⁷ Frederic Harrison, *The Positive Evolution of Religion*, p. 212.

Professor Höfding even says that the various religious conceptions of God, immortality, and the like, have originated historically "in combinations of figures" (p. 243).

Two criticisms may be brought against such a position. In the first place, it is impossible to differentiate the religious consciousness from other, non-religious experiences without introducing the factor of belief. If "cosmical vital feeling" is to be called religious feeling, and not merely emotion of an esthetic sort, it is so only by virtue of a belief as to the source of the experience—a belief that a supernatural significance attaches to the experience. In the second place, even though some of the religious legends and dogmas have now become merely symbolical for a portion of present-day worshippers, the dogmas did not as a matter of historical fact originate as symbols. A literal significance was originally attached. Moreover, a literal significance is still ascribed to them by the majority of worshippers. How long would even symbols remain if there were no literal believers?

Even for those who do take all religious dogmas symbolically, religion is not definable apart from belief in a class of supernatural objects or in a single supernatural object. A symbol, in order to be a symbol, must be a symbol of *something*. The worshipper who takes the dogmas as symbols, and does not believe them literally, still believes that they are symbols of *something* real or realizable, though not capable of being expressed except through poetic, imaginative symbolism. Furthermore, the objects symbolized are supernatural objects, existing beyond the world that the sciences study. Professor Höfding himself admits this, for he says: "If we could and ought to uphold no other views of existence than those which scientific inquiry can construct and prove, then the axiom of the conservation of value must fall to the ground. Science is not in a position to produce out of itself a religious faith" (p. 244).

An effort is sometimes made to define religion in terms of faith, and to regard faith as something entirely distinct from ordinary belief. Thus Ritsehlianism, claiming with Pascal that "the heart has reasons which reason does not know," bases religion on faith as a form of religious knowledge entirely different from scientific, factual beliefs. Faith, however, is a mental process open to ordinary psychological analysis; and upon analysis it is found to consist of belief in the reality of some object or in the truth of some proposition, along with an accompanying emotional state of trust or confidence. Faith in God involves belief in God's existence, together with confidence in His goodness and care. This latter notion is illustrated in the non-religious life by the case, for example, of faith in the curative properties of medicine. Often the term "faith" is ex-

tended in its theological usage to mean belief in the reality of something for which there is no empirical evidence. Tennyson's lines in "In Memoriam" express this idea:

We have but faith: we can not know;
For knowledge is of things we see.

But faith in this sense of the word still includes the element of belief, just as it must do in any other legitimate usage of the term.

There has been frequently in history, just as at the present time, a strong tendency to find the essence of religion in personal experiences of a mystical sort. Furthermore, it might seem to some people that, when defined in terms of mystical experiences, religion is defined without the inclusion of belief as a requisite element. This, however, is not the case. Upon analysis mysticism is found to consist of a strongly marked emotional state, together with a conviction or strong belief that there is a divine significance attaching to the experience. At least *after the experience* there is present in the mind of the mystic this belief as to the divine source and significance of the experience.

Though supernaturalistic belief of some sort occurs in all religious experiences properly so called and in all accurate definitions of religion, it might be claimed, nevertheless, that those persons ought to be called religious whose reactions to the universe as a whole, to the cosmic drift of things, were serious and reverent, even though their philosophical views were naturalistic. The majority of scientists would probably be included in this class. The man of high moral ideals and serious purposes, especially if his life is touched with deep emotion at the thought of the total cosmic situation, ought hardly to be called irreligious, perhaps, even though he lacked all the usual religious beliefs. Such a man is certainly not irreverent; but it would be more accurate, however, to call such a man, not religious, but moral merely, with esthetic emotions coloring his morality. Regard for correct usage of the term requires that religion be defined in such a way as to include supernaturalistic belief.

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REVIEWS AND ABSTRACTS OF LITERATURE

La Filosofia Contemporanea. GUIDO DE RUGGIERO. Seconda Edizione. 2 vols. Bari: Gius. Laterza & Figli. Pp. 271, 292.

A completely objective survey of recent European philosophy has not yet been written, and perhaps never will be written. Such

books as have thus far been written are *perspectives* of recent philosophy defined by the doctrinal and geographical location of the writer. That Signor De Ruggiero lives far from current American philosophy both in body and in mind, is most clearly indicated by his apportionment of space. He divides contemporary philosophy by the principle of nationality, allotting 120 pages to Germany, 125 to France, 160 (including the Appendix) to Italy, and 80 to "Anglo-American" philosophy. James and Royce receive about five pages each, Baldwin two pages, Charles Peirce one page, and Dewey one page, no other American being mentioned at all. There is evidence of the same perspective in the extent of the author's reading. Although the first edition of the present work did not appear until 1912, there is no evidence of the author's being familiar with anything of James's after the *Pragmatism* (1907), or of Royce's after the *Studies in Logical Theory* (1903). Among British thinkers, there is no mention of Whitehead, Alexander or G. E. Moore; while Russell is barely alluded to as an exponent of logistics. The strangest omission of all, in view of the author's doctrinal bias, is that of Bosanquet. This writer's *Logic* obtains a brief and disparaging mention in company with those of Mill and Bradley, but his other writings are ignored entirely. Although Italian readers will thus derive from this book a very imperfect and misleading knowledge of current philosophy in England and America, this does not prevent the English or American reader from finding the book a useful guide to the current philosophy of continental Europe. Contemporary German philosophy has been reviewed so frequently that this portion of the book is valuable as an interpretation rather than as a history. But the summaries of French and Italian (including Neo-Thomistic) philosophy are unique and illuminating, and constitute the chief merit of the book.

In its general method and intent the book is not an historical exposition, but a criticism and constructive argument. The author is a Neo-Hegelian and he reads Neo-Hegelianism into and out of the whole course of recent philosophical development. Thus Hegel's greatness lay in his giving a metaphysical interpretation to Kant's great discovery of the *a priori* synthetic rôle of thought. It remained for the Neo-Hegelians to purge this view of dualism and transcendence of every sort, and so to perfect the philosophy of "absolute immanence." This step could not be taken until after the classical idealism had been supplemented and even momentarily eclipsed by the naturalistic and empirical movement. This latter movement accomplished two things: it proved that the rigor and autonomy of the special sciences must be respected; and, by reducing materialism

to subjectivism, it provided a chapter in the idealistic conception of nature. The new idealism did not, however, arise in the home of the old. The German Neo-Kantians of all descriptions, Cohen, Rickert, Windleband and the rest, lost their way and wandered from the path. It was left to strangers of other lands to assume the succession and proclaim the true doctrine. These apparent transplantations of idealism which flourished better in a foreign soil evidently puzzle the author, since idealism is, like all true philosophy, an outgrowth of the national life, and can not, strictly speaking, be transplanted. The solution lies in regarding idealism as the independent outcropping through the medium of national life of the same essential spirituality. In any case, the true successors of Kant and Hegel, the true exponents of the immanent, concrete and historical idealism, have been Lachelier and Weber in France, Baillie in England, Royce in America ("the most vigorous of Anglo-American philosophers"), and Croce and Gentile in Italy.

From a doctrinal and geographical point of view other than the author's this book is not an account of contemporary philosophy, but of nineteenth century philosophy. For the author the primary object of philosophy is to establish a spiritual view of the world against the inroads of skepticism, materialism and secularism; which was, in a sense, its object during the last century. In the interest of this cause the author is satisfied with the traditional speculative and *a priori* methods of philosophy; and he speaks with the traditional accent of authority and outraged dignity when he has occasion to chastise the various forms of the naturalistic and empiricist heresy. It is therefore inevitable that the most characteristic development of contemporary philosophy in England and America should be lost upon him. Their genial qualities must strike him as flippant and scandalous, and their rigorous qualities as unedifying and destructive. He must necessarily fail to see what may strike another observer as the most significant and wholesome symptom of twentieth century philosophy, an effort at greater precision, clearness, openness of mind and respect for fact. It is the same desire to rid philosophy of cant, verbalism, and apologetic bias that has moved thinkers otherwise so wide apart as the pragmatists and the exponents of logistics. It has moved the realists of England and America. It has led Bergson to limit his speculation to the immediate vicinity of some definite and special scientific question. It has led to the development of *Gegenstandstheorie* with Husserl and Meinong. It has led even the idealists themselves, and notably such thinkers as Royce in America and the Neo-Kantians in Germany, to pursue methodology, and to develop new and intimate connections with natural science. This

desire does not and can not obtain adequate recognition in De Rugiero's Italian and Neo-Hegelian philosophical perspective.

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La Philosophie Géométrique de Henri Poincaré. LOUIS ROUGIER.
Paris: Alean. 1920. Pp. 208.

This book starts from the thesis that sciences, according to traditional logic, consist either of rational truths, *a priori*, eternal, universal, analytic, and necessary, or of empirical truths, *a posteriori*, capable of revision, singular, synthetic and contingent. Kant's doctrine of the *a priori* synthetic judgment was an attempt to mediate between these positions, but unsuccessful on account of the complicated intellectual machinery involved. The correct position is that of the "geometrical conventionalism" of Poincaré.

The book is divided into two parts, of which the first deals with the logical and mathematical prolegomena to Poincaré's theory. The author aims at minimizing the amount of mathematical knowledge necessary to understand Poincaré's exposition, and while he is reasonably successful, there still remain enough formulæ and technicalities to puzzle readers who have not some mathematical attainments.

The second part of the book gives the theory of "conventions" and Poincaré's criticism of other positions, from empiricism to Kantianism. The author identifies Poincaré's position with his own, and professes to add nothing but certain confirmations from the recent utilization of non-Euclidean and four-dimensional geometries in problems of the physics of relativity.

M. Rougier has the true Frenchman's gift for clear exposition, but one misses at times the brilliant passages that enlighten, by striking figures of speech, Poincaré's own expositions, particularly in his later works such as the *Science et Méthode* and the *Dernières Pensées*. For the American reader, a frank acceptance of Poincaré's self-classification as a pragmatist would contribute to an understanding of his point of view. But of course M. Rougier was writing for a French audience. It is, however, good to have attention directed as often as possible to work like Poincaré's for there has never been his equal as an exponent of the theory of knowledge in relation to concrete instances of scientific achievement.

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JOURNALS AND NEW BOOKS

BRITISH JOURNAL OF PSYCHOLOGY. Vol. X., Part 4. July, 1920. *Note on Professor J. Laird's Treatment of Sense Presentations* (pp. 285-89): J. E. TURNER. — We must supplement the realism which Professor Laird advocates by regarding sense data as always fragments or aspects of the physical world, determined (for psychology) to be sense data by these conditions under which they are always and necessarily presented to a consciousness debarred by its finitude from an immediate apprehension of the whole reality. *Reply to Mr. J. E. Turner's Note* (pp. 290-92): JOHN LAIRD. — It is irrelevant to point out that sense data have a certain evanescent continuance. *A Performance Test under Industrial Conditions* (pp. 292-309): S. WYATT and H. C. WESTON. — An investigation was carried on in the cotton industry under the auspices of the Industrial Fatigue Research Board. The process under investigation was bobbin-winding. Each winder came from her own winding-frame to the test frame and pieced the 50 pairs of ends as quickly as possible. Individual differences decrease as a result of practise, but the day's work has a variable effect upon different individuals. *Two Examples of Child Music* (pp. 310-11): WILLIAM PLATT. — Two examples found since the author's book was published are given. *A Voice Reaction Key* (pp. 312-14): ERNEST W. BRAENDLE. — The apparatus is described with a diagram. *The Distribution and Reliability of Psychological and Educational Measurements* (pp. 315-18): WILLIAM McCLELLAND. — "Raw" standard deviations should be corrected by subtracting the value of σ_m^2/m from its square. *The General Factor Fallacy in Psychology* (pp. 319-26): GODFREY H. THOMSON. — The utter invalidity of deducting a general factor from hierarchical order unless absolutely perfect. *Fluctuations in Mental Efficiency* (pp. 327-44): B. MUSCIO. — Possibly as a consequence of the production of fatigue, continuous mental activity, such as is involved in academic study, definitely lowers the capacity for certain mental tests. *Publications Recently Received.*

Bryce, James (Viscount). *Modern Democracies*. New York: Macmillan Co. 1921. Two volumes. Pp. 508, 676. \$10.50 per set. Cambridge Plain Texts: Bossuet, *Oraison Funebre*, pp. 70. Dumas, *Histoire de mes Bêtes*, pp. 60. Gautier, *Menagerie Intimes*, pp. 65. Lamartine, *Meditations*, pp. 88. de Musset, *Carmosine*, pp. 80. Cambridge: University Press. 1920.

Cambridge Shakespeare, edited by Sir Arthur Quiller-Couch and John Dover Wilson. Vol. I, *The Tempest*. Cambridge: University Press. New York: Macmillan Co. 1921. Pp. 116. \$1.40.

- Pound, Louise. *Poetic Origins and the Ballad*. New York: Macmillan Co. 1921. Pp. x + 247. \$2.50.
- de Ruggiero, Guido. *Modern Philosophy*. Translated by A. Howard Hannay and R. G. Collingwood. London: George Allen & Unwin. New York: Macmillan Co. 1921. Pp. 402.
- Ward, Stephen. *The Ways of Life: A Study of Ethics*. Oxford University Press. No date. Pp. 126.

NOTES AND NEWS

The first session of the Institute of Politics, dealing with the general subject of international relations (see this *JOURNAL*, Vol. XVIII, No. 2, Notes and News), will be held at Williamstown, Mass., from Thursday, July 28, until Saturday, August 27, 1921.

A partial list of those who will deliver lecture courses extending throughout the session follows: The Right Honorable Viscount James Bryce, England; Baron Sergius A. Korff, Russia; Stephen Panaretoff, Bulgaria; and, unless unavoidably detained, Luis M. Drago, Argentina; and Josef Redlich, Austria.

A partial list of those who will conduct round-table conferences is as follows: Isaiah Bowman, director of the American Geographical Society; Professor Archibald C. Coolidge, of Harvard; Norman H. Davis, former Under Secretary of State; Professor James W. Garner, of the University of Illinois; Professor Jesse S. Reeves, of the University of Michigan; Professor Frank W. Taussig, of Harvard; and Professor George G. Wilson, of Harvard. Professors E. H. Haskins and R. H. Lord, of Harvard, will probably alternate with Mr. Bowman and Professor Coolidge, respectively.

In addition to the formal lectures and round-table conferences there will be occasional addresses by visitors of national and international reputation.

The lectures and addresses will be open to the public and all are cordially invited.

The round-table conferences will be limited to duly enrolled members of the Institute. Each member will be assigned to one or two round-table courses and will be given an opportunity to indicate the course or courses which he prefers to take. The round-table conferences will be conducted after the manner of graduate seminars. It is the intention to so limit the number in each group and to so assign the members of the Institute to the various groups that each member will be able to contribute to the discussion.

Those desiring further information can obtain it from the secretary of the Institute, Professor Karl Ephraim Weston, of Williams College.

THE JOURNAL OF PHILOSOPHY

"CRISES" IN THE LIFE OF REASON

CAN nature lift herself by her own boot-straps? Using the word "lift" in a eulogistic sense, the only meaning which can attach to this question is whether any one conformation of nature is better than any other. Now nature as a whole can show no progress, neither could she register it were it miraculously to occur. But a part of nature might conceivably play somewhat skillfully into the hands of another part, and by a union of effort effect a local improvement. Progress must of necessity be an episode, and in a world where better and worse are basal categories it must be a moral episode. For such an episode to be natural it would be necessary for nature to evolve her own values as well as devise a method for their operation. Inasmuch as such an episode appears at a definite juncture of time and portrays in its genesis a certain contingency, it is dramatic as well as moral. If we use the word reason to stand for the total embodied progress, not in nature as a whole, but in that part of nature which has somehow managed to rise above its source, we may say that the life of reason is not only an episode in man's career, but is also a moral drama.

In what has just been written it would be easy to recognize a conscious adoption of the point of view of Santayana. Santayana's *Life of Reason* is not only an affirmative answer to the question placed at the beginning of this essay, it is also in its literary form the most perfect and in philosophical acumen the most penetrating account of the natural history of reason with which I am familiar. The purpose of this paper is to review the first volume of the series, not in a spirit of criticism, but with the intention of describing the complications that arise in the development of reason. Being a dramatic episode, reason has its critical junctures and its resolutions. What I am especially interested to describe are the "crises" in the drama. Though uncritical, the exposition will exhibit at times a spirit of wariness. The constant use of such terms as "natural apparition," "familiar mystery," "speculative fable," "eddy in the current," "kindly illusion," "significant figment," "inveterate preference for form," "miracle of insight" begets a suspicion that Santayana might, after all, have attributed to nature something of the art of the prestidigitator.

When Glaucon and Adeimantus approach Socrates with the ques-

tion, does it pay to be moral? they are careful to make it plain that they do not doubt that virtue and utility are inseparably connected; only, they say, they have never yet heard the thesis that justice is more gainful than injustice defended in a satisfactory manner. Now I do not doubt that reason has a natural history and that ideals have a natural basis. Neither do I doubt that if man is to recognize the forces which govern his life they "must portray themselves in human experiences."¹ But to accept and justify these forces just as they are given and to praise them for their loveliness as is done, for example, by Lucretius, is to mark at once both the value and the limits of naturalism. The poetry of Lucretius, says Santayana, is "not the poetry of a poet about things, but the poetry of things themselves."² The operations of nature stand in no need of idealization; the interplay of its mechanical forces lends itself as much to poetic expression as to scientific formulation. Not in transforming nature into something more ideal than herself, but in conforming to her as the pattern of all beauty and excellence, is to be found man's task. Resignation in some form is the unescapable issue of a mechanistic conception of nature and life. But to make an ideal of conformity is to renounce the imagination and to resign our humanity. We exalt nature in order to humiliate man.

If naturalism is "sad," idealism is "rudimentary" and transcendentalism is "insolent." As young children do not distinguish their images from things external, the idealist mistakes the visions of the imagination for a perfect and eternal reality. To think oneself omniscient is a mark of immaturity, but to mistake the stirrings of impulse for the creative energies of nature is a colossal piece of human impudence.

But the forces within us do somehow carry us to things beyond us. Our primitive instincts no less than our "leaps" of thought have a transcendent reach. The persistent striving of an impulse is the substance of things hoped for and its concomitant emotion is the evidence of things not seen. To foster and maintain an interest, and to generate a force that can conceive and pursue it, is nature's way of rising above her source. Reason is the process by means of which man realizes ideals. We have ideals, because, being human, we need them. If naturalism, by withholding ideals, gives us too little, idealism, by objectifying them as structural elements inwrought into the framework of existence, gives us too much. Between these extremes lies the "illusionism" of Santayana, not sad, though wistful; not rudimentary, but significant; not insolent, but kindly. Ideals, originating in human nature and ministering to human needs, are legiti-

¹ *Life of Reason*, Vol. I, p. 1.

² *Three Philosophical Poets*, p. 34.

mate to the extent that they are generous and real as far as they are revelant. It is not surprising, therefore, to be told that ideals constitute the realm of “significant figments” and “kindly illusions.” An important caution must always be observed touching the legitimacy of ideals. To idealize the natural is not the same thing as to naturalize the ideal. Every ideal is a work of art and final causes nowhere exist in nature. Aristotle’s deity is a legitimate formulation of a moral aspiration, but as a physical principle of natural efficiency it is altogether deceptive. To express our aspirations in “speculative fables” is the crowning work of reason, but to deify an abstraction or to rationalize a myth is to open the way for dogmatism and deception. The reverse process is less kindly and more illusory.

At the outset we may dispel “transcendental qualms.” All of the principles of synthesis and evaluation necessary for a natural history of reason are discoverable within experience itself. “The most irresponsible vision has certain principles of order and valuation by which it estimates itself; and in these principles the Life of Reason is already broached, however halting may be its development. We should lead ourselves out of our dream, as the Israelites were led out of Egypt, by the promise and eloquence of the dream itself.”³ Experience is no enthymeme. The premises from which it is derived and the conclusion which it yields can be discovered by any one who is sufficiently gifted to discern them. A natural explanation is one which accounts for a fact by referring it to other facts which belong to the same order of existence. For Thales to have said that the earth floats on water is at least better than saying that it rests on the shoulders of Atlas. “Early experience knows no mystery which is not somehow rooted in transformations of the natural world.” For Santayana, as for the Greeks whom he reveres, absolute qualitative change is unthinkable. Reason must, therefore, have its natural antecedents.

We begin with the immediate, thanks to Heraclitus⁴ who was the first to desery it. What the immediate reveals is impulse and imagination, two pre-existing and primordial processes, the union of which constitutes reason. Upon the advent of reason, life is already swiftly moving toward impulsive and instinctive ends. Side by side with the life of impulse and equally vital is the life of imagination, a dreamful existence far more fundamental than anything so sophisticated as perception. Originally these operations of nature go on in ignorance of each other. It is unfortunate, for each possesses

³ *Life of Reason*, Vol. I, p. 54.

⁴ The brilliant characterization of Heraclitus (Vol. I, p. 15) is somewhat misleading. In his appeal to reason and in his blending of naturalism and humanism, he is much more than the “honest prophet of immediacy.”

what the other lacks. Impulse has power, but is blind; imagination has vision, but is impotent. Promordial consciousness is disinterested, entirely speculative, and as a result is altogether improvident. Reason arises when consciousness asserts a preference. By choosing among objects, it discovers itself. It comes to take an interest in itself for the sake of the object it prefers. The accident by means of which ideas, which originally have no relevance to action, attach themselves to impulse, thus giving potency to vision and foresight to power, is nothing less than the birth of reason.

Heraclitus began with the immediate; he also ended with it. One day is as another was the burden of his lament. Could he have come after Plato he might have arrested the flux with a figure of speech. In this respect Santayana is more fortunate. "When the flux manages to form an eddy and to maintain by breathing and nutrition what we call a life, it affords some slight foothold and object for thought and becomes in a measure like the ark in the desert, a moving habitation for the eternal."⁵

Coextensive with every alternation in impulsive and ideational life is a tone of feeling. Pleasure and pain, or as we should now say with a more strict psychological accuracy, affections of pleasantness and unpleasantness, are invariable accompaniments of every phase of immediate experience. Herein lies the possibility of discrimination and preference. That pleasure is worthy of choice is an ultimate fact. One needs no transcendent obligation to persuade him to enjoy himself. It is not a question of the worth of pleasure, seeing that pleasure is itself the basis of all worth. Selection on the basis of a felt preference is the first differentiation in the flux.

Just pleasure and pain do not constitute rationality. But when once the source of value is revealed, consciousness can no longer remain disinterested. A further step is taken when ideas attach themselves to pleasure. Here interest awakens. The half-born reason welcomes returning joys and trembles before impending sorrows. As ideas suffuse pleasures, pleasures somehow overflow and attach themselves to objects. "Here we come upon a crisis." What happens, we are told, is that pleasures become objectified, they saturate the object which happens to come along just in the nick of time. Pleasures affiliate with the objects which cause them. As a result objects can be named and their recurrence predicted. Thus arises the concept of causality. Causality does not arise from any malicious intent on the part of reason to fix the blame for its distress or in any feeling of gratitude for favors received. Its origin lies solely in the fortunate eccentricity of pleasure to affiliate with its source. It might have been entirely different, thus showing that

⁵ *Ibid.*, p. 42.

the life of reason is after all only a natural contingency. Just here, I suppose, is Santayana's justification for calling the life of reason a dramatic episode. Pleasures and pains, therefore, become the links that bind impulse and imagination together. Henceforth their destinies are bound up in the same process. Ideas become factors in action. We know not things directly but only through the intervention of the pleasures they afford us.

When imagination connects up with impulse it joins hands with a body well on in its evolution. The body has aims and needs. Every attitude is an incipient courtesy and every gesture is a social response. Imagination falls in with this purposeful activity already well launched. It makes no attempt to graft its own aims on to the body; it does not because it hasn't any. Imagination has no interests; only bodies have that. The function of the imagination is to conceive ends, not to possess them. In a sense consciousness remains disinterested still, its only interest being to assist the body to an awareness of the ends which it already possesses though has not as yet foreseen. Impulse needs no incentive and what consciousness brings is not efficiency but light.

Reason is now born and an external world is discovered. We are told *how* all this happens. But why does consciousness, which is a “born hermit,” turn its most prized possessions out of doors? To explain this we can not simply revert to a primitive animism, since it is animism itself that is in need of explanation. Santayana begins as does Descartes with the inner life and works outward to the discovery (or invention? or apparition?) of nature. Does he really escape subjectivism? A discussion of this question would take us too far afield. It is merely suggested as a real difficulty in Santayana's analysis. Furthermore it seems to me that the separation of impulses and pleasures and ideas, even allowing for the literary effect, involves a false abstraction. Activity is a single and indivisible process with ideation, affection and conation as inseparable phases. But let us continue with the exposition.

The recognition of stray and random objects falls far short of a general theory of nature. A further step is taken in this direction. Consciousness is not only a “born hermit,” it is also a born conservative. Though the new-born reason is everywhere confronted with surprise, for in strict literalness no element of the immediate ever recurs, reason itself has no sense for novelty. The same back again is its continual lament. To maintain a life of sentiency on a rational plan requires two things: that pleasures return and be as they were. And what sentiency requires, reason proclaims, namely, independence of objects in order “to normalize their recurrence,” and a settled character or form in order “to normalize their constitution.”

Independence and form are the two conceptions in terms of which nature is discovered and unified. How do these conceptions arise?

The question, how is knowledge possible? has always had great fascination for philosophers. It is a legitimate question. Born into a world not expressly designed for it, yet there, if anywhere, reason must find a home. Though in its later career it may, through misfortune or disillusionment, come to renounce the world, in its infancy at least it is loyal to its lineage. Out of this loyalty arises the means of converting the world into a home for the spirit. Thinking is a form of life. As a vital process, it must like all life's other processes, maintain itself by extracting from its environment the means of its own conservation. The new-born reason can not feed on the flux. The immediate is not food for thought. The process by means of which thought derives its sustenance is a sort of living on its own past. The past never recurs, but something of its being is retained and utilized in the present. The mind, having an "inveterate preference" for form, singles out the quality and lets the quantity go. It is thus that experience becomes accumulative. It is not a mechanical process of addition, but a vital process of nutrition. Only a growing experience can sustain and nourish the process of thinking. Form or essence is, therefore, the food prepared by a voracious intellect by its own assertive energy. The mind is not endowed with form, it only possesses a preference for form; it does not possess categories, only a tendency to categorize. No "transcendental ego" is needed. The demand for that *deus ex machina* is the result of treating thought mechanically rather than vitally. Plasticity and modifiability of nervous tissue is all that is required. Epistemology is a branch of physiology.

This may be expressed differently. Transcendence, not immediacy, is the crux of thinking. How what is present can imply what is absent is just one of those "familiar mysteries" inexplicable but factual. Suggestion is just as much a natural operation as digestion. It can neither be intelligible nor unintelligible, since it is the nature of intelligence itself that is being considered. All that we can say is that if what is implied were present in the same sense as that which implies it, there would no longer be implication, but explication. Neither would there be thought. Implication is a sort of mist of meaning that rises above the stream of sentiency, as natural as evaporation; and like evaporation, involving a distilled essence which in good season will return and enliven the source from which it first arose.

The only possible issue of Santayana's theory of knowledge is in mechanism. Mechanism, being the basis of intelligibility, is one and the same thing as explanation. The unification of all of those

ideal terms by means of which reason dominates and controls the flux, assigning to it independence and permanence, constitutes the realm of nature. Nature, therefore, is ideal. And since it arises in response to the demand for explanation, it is a purely mechanical system. Reason prescribes its laws. Only ideals are real, real in the only sense in which they can be real without losing their ideality. We have a knowledge of them as we know any goal of thought, not as a sign, but as a thing signified. Sentient can no more be sentient of the ideal than the given can be implied or the absent be present. The confusion of the ideal with the sentient is the basis of dogmatism, the most deceptive form of reification. That is why, though it is never wrong to pass from the sentient to the ideal, it is never right to reverse the process. As Hume would have said, you can have no *a priori* knowledge about matters of fact.

Nature disclosed is mind discerned. Reason's discovery of mind is not reason's discovery of itself. It is the discovery of that vague realm suspended between nature and sentient. Nature is that part of existence that has been reduced to constancy and control. The discovery of mind marks reason's inability to subdue the flux all at once. Despite the advance of mechanism an element of caprice persists and seems to stand outside of the order of nature. Nature is mechanism; mind is the residuum of the indeterminate, the realm of the unpredictable. Santayana might have expressed the discovery of mind in a simpler way. A part of the ideal of perfection, he tells us, is that all ideas be applicable in action. The discovery of mind marks the failure of this ideal. Imagination, a form of life, like other vital processes, is prolific. It produces countless ideas with the hope that some one of them by attaching itself to impulse may become fruitful in action. Reason must take some notice of those ideas which fail to connect with impulse. Never leaving the realm of the imagination they can never enter the realm of nature. They are untrustworthy because they are untried.

When we say, love your neighbor as yourself, we assume the independent existence of a neighborly spirit. But for reason there was a problem of discovering fellow-minds before there was a problem of loving them. Now the discoveries of reason, no less than those of science, are often entirely accidental. It could not be otherwise with a subject-matter that is irrational and a method that is experimental. The discovery that other men have minds is a pure accident. It could have happened only to a rudimentary consciousness. Sophistication always leads to solipsism. Mature reflection, seeing that no idea can be transferred from one mind to another, would be sure to deny any such thing as mental interaction on intellectual grounds. Consequently, had fellow-minds not been revealed to emotional con-

consciousness at a time before reason learned the use of dialectic they would never have been revealed at all. Already we have seen that but for an emotional overflow, external objects would never have been discovered. It is easy to go one step further and turn the objectified feeling into a principle of natural efficiency. Now the "pathetic fallacy" is usually fallacious, but there is one case when it is not, namely, when it happens to be true. Truth must of necessity be an accident in the trial-and-error method. The discovery of other minds comes as the natural result of "varied reaction" when applied to emotional life. Prompted by a vague and indistinct feeling for personal presence, rudimentary consciousness puts out various tentacles one of which, as if by a "miracle of insight," touches the projection of a similar consciousness similarly groping.

This, in outline, is the natural history of reason. It includes the following steps: (1) Antecedents in impulse and imagination; (2) the basal character of pleasure and pain, preference asserted and value revealed; (3) the attachment of ideas to pleasures and the projection of pleasures to objects, interest awakened; (4) the rise of the concept of causality and the external world discerned; (5) explanation required, a theory of knowledge proclaimed, and nature discovered and unified; (6) the discovery of fellow-minds. Inasmuch as results are never mistaken for causes and values never confused with origins, the account is a model of natural description. Were there space in which to add criticism to the foregoing exposition, it would be directed along three main lines. First, a false abstraction, more than merely rhetorical, involved in the separation of impulse, feeling and ideation. Secondly, can one, beginning with the inner life of feeling, the domain where a "stranger intermeddled not," escape subjectivism? Thirdly, by attributing to mind a preference for form and by assigning to reason the function of legislating for nature, is Santayana as far from Kantianism as he thinks he is?

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THE COÖRDINATE CHARACTER OF FEELING AND COGNITION

ONE of the vexed questions of psychology that troubles the philosopher who would describe the nature of conscious activity is the disputed status of feeling-states. Fourteen years ago C. Stumpf¹ indicated the three possible views in respect to the status of pleasure and displeasure. Feeling may be a quality of sensation (so H. R. Marshall); feeling may be a mental element coördinate

¹ *Zeitschr. für Psych.*, Vol. 44, pp. 1-49, 1906.

with sensation (so E. B. Titchener); feeling may itself be a kind of sensation (Stumpf's *Gefühlsempfindungen* theory). It is not my purpose in this paper to weigh the merits of these theories. I am in sympathy with the second of the three, and so believe that in the unitary conscious state the two aspects, feeling and cognition, are coördinate rather than one subordinate to the other. I do wish to point out, however, perhaps as devil's advocate, that two of the arguments in support of the theory of relative independence of feeling and cognition, although considered impregnable, will not bear the test of close scrutiny.

In his recent book *The Origin of Consciousness*,² Dr. Strong makes much of the difference between affective states and sensations in support of his argument for the originality of the psychical. After describing the possible application of the "return wave" theory to feelings, he adduces two criteria by which he judges it proved that feelings and sensations differ fundamentally. He says, "The sensations into which affective and conative states have been resolved are defined as psychic elements due to nerve currents from the periphery; the sensations which are cognitions of the intra-bodily are sensations localized in a particular part, and bringing before us a process occurring there. In especial, the latter class of sensations are attended to—or rather the objects they bring before us are attended to: the sensations constituting pleasure and pain, emotion and will are not attended to. To attend to an emotion is to destroy it—it breaks up at once into the localized sensations which are cognitions of intra-bodily processes" (pp. 85–86). Speaking of affective states, he says, "Objects are localized, they are unlocalized; objects are attended to, they are unattended to and even abolished by attention" (p. 86). Let us examine these alleged criteria.

I

Feeling-states are said to be abolished when attended to. Unfortunately, the evidence in support of this statement is more of the nature of casual observation than of careful introspective analysis. Nevertheless, the latest evidence, contained in Dr. Wohlgemuth's monograph, *Pleasure-Unpleasure*,³ goes toward substantiating the common observation that the more one directs his attention to the cognitive aspects of a situation, the less intense are the affective aspects. As Dr. Strong says, "Even in the case of a keen sense of disappointment, where we are very apt to dwell upon the feeling, the keen sensation in the throat of which we quickly become aware

² London, 1918.

³ *Brit. Jour. of Psych.*, Monograph Supplement VI., pp. 1–252, Cambridge Univ. Press, 1919.

is an object that displaces the emotion and makes us in so far no longer disappointed. The young child who simply bawls is the truly disappointed person." Dr. Wohlgemuth, however, found that when a feeling is attended to *as part of a situation* it becomes "clearer." It seems equally to be a fact of common observation that we may increase a sense of disappointment by attending repeatedly to the factors which are associated with the disappointment. The child who is compelled by parental order to stay indoors does not conquer his disappointment by thinking how he might be outside with his companions playing ball. Dr. Wohlgemuth seems to have combined successfully the empirical evidence in his rule, "If a feeling-element is attended to as belonging to a cognitive content, or as part of a situation or complex, it is intensified and becomes clearer; but if an attempt be made to focus the attention upon it to the exclusion of its cognitive concomitant the feeling-element is destroyed."⁴

But the latter half of this rule is not a conclusive argument for the coördinate character of feeling and cognition since there is a parallel case lying wholly within the field of cognition, where direct attention destroys a sensation. The visual field offers a considerable range of given objects to vision. Only one small part of this field, however, may be attended to at any time. The other objects are said to be "marginal." Now how may we attend to objects in the marginal area? The naïve answer would be, Look directly at the objects there. In so doing, however, we no longer view these objects as *marginal*, but as objects at the focal point of attention. It is not even true that in each case the objects will be the same. Marginal objects have an indistinct and blurred character that is quite different from the same objects directly attended to. Furthermore, they sometimes lack some of the qualities that are to be perceived in direct vision. A bit of colored paper held outside the range of the blue-yellow zone appears uncolored when seen marginally—a very different object from the same bit of yellow paper viewed directly. However, it is quite possible by practise to get a clearer view of the paper as a marginal object by choosing a fixation-point to which to attend. In this case the observer attends to the object *as part of a situation*. The parallel with feeling is obvious. Now if feeling might be characterized as of a marginal nature, we should not be able, on the score of a difference of behavior in regard to attention, to affirm its qualitative difference from sensation or to speak of it as an independent element of consciousness.

In this connection the "furtherance-hindrance" theory calls for

⁴ *Ibid.*, p. 246. Cf. *Lectures on the Elementary Psychology of Feeling and Attention*, E. B. Titchener, p. 70, New York, 1908.

some consideration. It is well enough established that pleasure accompanies smoothly running activities, whereas displeasure is associated with any impeded progress. What is beneficial to an individual is often marked by unimpeded progress, while an obstacle will stand in the way of an activity. Here we have to do largely with the motor "set" of the organism. Whatever may be the precise neural basis of pleasure-displeasure, it is almost certainly more diffuse than the neural basis of any sense. The facts warrant our admitting the motor elements of reaction as associated in part with feeling. Here some light is thrown upon the relation of attention to feeling. For, if the neural basis of feeling partly consists of nerves leading to the brain from the muscles employed in an activity, it is easy to see that if the attention be directed to these elements to the exclusion of the objects provoking the activity on the sensational side, the motor "set" of the organism will be changed completely.

A second argument in favor of the coördinate character of feeling and cognition is that feelings are non-localizable, whereas the objects of cognition are localized. This argument, however, is not supported by sufficient experimental evidence. In fact, it is directly controverted by Dr. Wohlgemuth who says,⁵ "Feeling-elements can often be localized. The ability to do so depends to some extent upon the attitude of the observer toward the feeling-element. The more his attitude allows him to objectify the feeling-element the easier it is to localize the feeling-element, or, possibly, *vice versa*. The question of the localization of the feeling-elements has been as hotly controverted as that of their co-existence, and I hope that now it will be considered as definitely established. All my observers are in agreement about it. . . . The ability to localize the feeling-elements improves greatly with practise. Great individual differences obtain with respect to the ability to localize the feeling-elements, especially those of auditory and visual sensations." In the present state of experimental evidence it seems unwise to base a theory of feeling on the attribute of non-localizability. It may be remarked that it is often extremely difficult to locate precisely some of the cutaneous sensations and more difficult yet to localize the organic sensations.

We must not, however, treat the important alleged criterion of non-localizability in a hasty manner. Observers differ in their results, and the agreement of the four trained observers employed by Dr. Wohlgemuth may not be regarded as absolutely decisive. Much of the difference of opinion, I believe, is due to a lack of agreement among writers as to the meaning of the term "localizability." It

⁵ *Op. cit.*, pp. 242-243.

is instructive to turn to Professor Titchener's discussion of the matter.* He gives two possible definitions: localizability may refer to perceptual space or it may refer to the coextensive character of affective states with the whole conscious state in contrast with the side-by-sidedness of sensations. Dr. Wohlge-muth uses the term with quite a different meaning. His observers locate the affective states in the tongue, mouth, nose, throat, hand, head, etc. Only in the case of visual and auditory sensations do the observers ever refer the affective states to the place of the stimuli in perceptual space. Dr. Wohlge-muth, again, would have no use for the second possible definition of Professor Titchener because his own evidence (and that of Kellogg⁷ and others) indicates that mixed feelings are unquestionably a fact.

So far as mixed feelings are concerned, I have long been convinced from my own introspection that they are the rule rather than the exception. The experimental results achieved in this matter convince me that feeling can no longer well be defended as a co-ordinate element of conscious activity on the ground that one and only one quality of feeling is at any one time coextensive with the cognitive element of a conscious state. To the definition of localizability as a projection of the affective elements by conscious activity into perceptual space, I would say that further analysis is demanded. For the definition may mean either of two things: either affective states are supposed to carry with them an affirmation of objects in an existent world parallel to a characteristic affirmation in cognition, or there is said to be in the *content* of sensations and feelings a similarity of spatial reference.

I judge from the words of Professor Titchener and Dr. Wohlge-muth that each emphasizes one of these possible interpretations. Professor Titchener might conclude (although in point of fact he gives up the criterion because of insufficient agreement among observers) that feelings differ from sensations in that the former are localized within the body and the former outside the body. The neat question here implied, but never so far as I know discussed, is whether the affirmation of a feeling as intra-bodily is an existential affirmation of the bodily organs involved, or whether the affirmation is of objects considered merely as given to consciousness.

It is quite possible, however, to determine the validity of the criterion of non-localizability defined in the second way. We may eliminate all affirmations of physical space, including parts of the body; we may eliminate everything that is not integral to the *given* in sensation and feeling. Then we may ask whether sensations and

* *Op. cit.*, pp. 43-55.

⁷ *Psych. Monographs*, Vol. 18, No. 3, 1915.

feelings as given have a local character, an element of *distance from* or "inner space" that may be discovered introspectively. When we do this, however, we find that, although we discover the local character present in all sensations, the attribute has lost the precision that attaches to it in many cases by virtue of an accompanying existential affirmation. We find that there is a whole range of variation, from organic sensations that may just barely be localized, to visual sensations which are quite definitely localized with respect to other sensations in the visual field. The attribute of local character seems definitely to be connected with the place of the sense end-organs *i.e.*, there seem to be places where we see, hear, feel cold, *etc.* But some of the "lower" sensations, although they are discovered to have the spatial reference when truly introspected, are most indefinite in their precise location. They are no more certainly localized than many of the obscurer feelings of pleasure-displeasure. These observations would seem to indicate that localizability is not an intrinsic attribute only of sensations. For feelings have their own curve of localizability, and there is nothing to distinguish the lower limits of the two curves of sensation and feeling as respects this attribute.

The similarity of affective and cognitive states as regards localizability is even more evident when we consider the organization of sense-organs and the relation of organization to marginal consciousness. The cutaneous sense end-organs are organized only to a slight degree; we do find groups of cold and heat spots. But in the "higher" senses the sense-organs contain many end-organs in a circumscribed area. The result is that within the limits of a single sense attention must single out one impression that is focal and leave the others to marginal consciousness. The term "marginal" may be applied to *all* sensations not at the focus of attention. Thus, if I attend to a cold sensation felt in my hand, the cold sensation occurring at the same time in my foot is marginal. Careful study should be made to determine the degree of localizability of two sensations of the same quality as compared with two sensations of different qualities. I believe that the most precise localization is found when two sensations of different quality are derived from end-organs in the same sense-organ. In any such comparison one sensation will always be marginal, as attention can be directed to but one at a time. Marginal visual sensations are most precisely located, next those of sound (by a musical observer).

Now whatever be the neural basis of feeling, it is generally agreed to be less organized and more diffuse than the end-organs of any of the senses. If, therefore, we are right in speaking of feeling as of a marginal nature, we shall expect very little precision in

the matter of localization. We shall expect that individuals will generally disregard the localization of feelings, and that they will find that feelings may be recognized as local only upon careful introspection. On the other hand, the marginal sensations of the visual sense will be so vivid, owing to the high degree of organization of the visual end-organs, that they will be universally recognized.

II

We may postulate that the question of the relation of feeling to cognition must be decided by introspection of mental states rather than by investigation of their neural bases. Undoubtedly every psychical activity has a neural basis, but there are no two distinct types of neural activity to which cognition and feeling respectively may be referred. Even if there were, our problem would not be solved, as we have to determine whether cognition and feeling are coördinate in *conscious activity*. Consideration of the factor of attention has not revealed any criterion by which this coördinate character may be established. Nor has localizability, applied strictly to conscious states, proved more serviceable (although the possibility of distinction on the basis of a difference of affirmation was suggested as a problem requiring investigation).

It is entirely possible, however, that, when we come to analyze conscious states more fully, we shall find that the qualities of pleasure and displeasure are in some respects not homogeneous with the qualities of sensation. They may have characteristics that warrant their being regarded as a distinct aspect of conscious activity. I believe that there are at least two such characteristics.

1. One can not ever introspect and not discover pleasure, displeasure, or both present in consciousness. Much was made formerly of an "indifference-point." But the theory of pleasure-displeasure as a linear scale has been destroyed as completely as the theory that cold and heat sensations form a linear scale. Feeling would appear to be duo-qualitative, pleasure and displeasure each constituting a linear scale. Furthermore, it is not necessary to the validity of this first criterion that introspection disclose the presence of a feeling-element in association with *every* sensation. To postulate this is to postulate the difficult theory of feeling as an "affective tone" of sensation. It is very likely true that I am quite indifferent to the sounds that are buzzing in my marginal consciousness as I write at the present moment. The essential point is that pleasure or displeasure or both be found *somewhere* in every conscious experience, even if only as an accompaniment of organic sensations. If this requirement be satisfied, it is fair to say that feeling is coördinate with cognition in conscious activity. In respect to the

attribute of being present in every conscious state, feeling will be on the same footing with cognition which, too, is never absent from conscious activity. That feeling is usually (not always) less prominent as a conscious element than cognition is easily understood if feeling is of a marginal character; it would thus resemble marginal visual sensations which are neglected by us habitually a good part of the time.

2. Another firm foundation for the theory of the coördinate character of feeling and cognition is the fact that of the conscious qualities only pleasure and displeasure may become detached from the situation in which they arise and cling in succeeding conscious states to qualities of *any* of the senses. In the field of cognition only one sense has a slightly similar characteristic, and it differs in two ways from feeling: (a) The visual after-image may become attached to a succeeding light-sensation, but here the qualities are within a single sense. (b) The persistence of the visual after-image is marked either by a fusion which abolishes the quality that fuses (as when a red after-image fuses with a blue sensation to form purple), or by an entire absence of fusion, in which case the after-image persists as an independent entity (as when the image floats before the eyes and gets in the way of present vision). Now when pleasure or displeasure continues over from a preceding to a succeeding conscious state, it is not fused with another quality in such a manner as to lose its character of pleasure or displeasure, but, remaining what it was, it colors affectively the new state. Very interesting results as to the behavior of the feeling-elements of moods are reached in Dr. Wohlgenuth's experiments.⁸

The case for feeling as a coördinate aspect of conscious activity, therefore, rests partly on the universal presence of one or both of the affective qualities in all conscious states, partly on a certain independence of cognition manifested by feeling in the production of moods. These facts are more significant than the very questionable arguments adduced from attention and localizability.

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THE BASIC ASSUMPTION OF EXPERIMENTAL SCIENCE

IT is often supposed that experimental science inevitably must assume the existence of an external world which, to a certain but very important extent, is not subject to the control of the more or less passive observer. Moreover, it is supposed regardless of what may be the case for such pure or abstract non-experimental sciences

⁸ *Op. cit.*, pp. 243-244.

as, let us say, non-Euclidean geometry, the strictly experimental sciences, such as chemistry and physics, could not exist, let alone be understood, unless it is assumed that there is an outer reality whose laws, at least, are not subject to our control and about which we can learn most directly, if not exclusively, by means of the experimental method.

Now it is, of course, a fact that the scientific, and indeed the most anti-realistic metaphysician, does live and act, no matter what his belief may be, as if there were an outer independent order of fact and law to which he must conform. But it must be pointed out that in spite of the practical and, perhaps, if some metaphysicians are correct, metaphysical necessity of this belief, as far as the purposes of science go, be that science experimental or abstract, this assumption that there is an outer independent order of reality is but an unnecessary and even unscientific over-belief. The procedure of either the experimental or the abstract sciences is every bit as understandable, and indeed gains somewhat in metaphysical economy, if stated in a form which does not assume anything as superfluous as the existence of an order of reality back of the percept-concept experience which is the immediate datum of the scientist. All that is really necessary for the scientist to assume to be able to give an intelligent account of his procedure is, (a) the percept-concept nexus that forms the prime experience of the individual scientist, (b) that there exist certain necessary relations between parts of the percept field, and (c) that there is a certain amount of ignorance as to what these necessary relations are. In these terms the problem of the experimental scientist is merely the problem of finding out, by trying, if, when he has a certain selected set of percept data, that is, when he has present to perception the conditions of the desired experiment, he has also present to consciousness the added percept datum expected if his theory as to the relationship between various parts of the percept field is correct.

Thus to the scientist it is immaterial whether he assumes the existence of an external world or not, but (provided only he realizes the theoretically unnecessary and extraneous non-scientific assumptions involved) of course it is highly convenient, if only for the purposes of exposition, to state his results in a form which anyone can understand, and that means in non-subjective terms.

If the existence of an independent external world is not assumed by experimental science, what is involved? It seems to me that Mill was on the right track when he emphasized the permanency of certain factors in experience. This permanency, however, does not lie in the percept data themselves, as Mill seems to have supposed. The percept material itself, the "things" or "substances" which

we are accustomed to suppose lie back of it, are, as was pointed out long ago by Plato, notoriously unstable. Not only do two bits of sense data seem, that is are, constantly changing, never having twice the same inter-relation, but even the "things" of which they are supposed to concern themselves, that is to say the percept data with as much of variance abstracted as is known or suspected to be due to the individual and not inherent in the permanent factors of the percept field, are constantly changing. The constant things of physics, the mol of gold, the standard meter stick, are in fact constantly varying in position, temperature, electrical charge, and even in mass and dimensions. The significant thing about them which is constant, the only thing that the scientist need assume constant, is not the constancy of substance, but the constant truth of certain conditional propositions about them, namely, that under certain standard conditions of temperature, handling, pressure, *etc.*; this given nexus of concept-percept experience, which we call the mol of gold or standard meter, will have the mass of about 197.2 grams, or the length of one meter. And it is to be noted that even here we are not really asserting that a given "thing," the mol of gold or the standard meter, has fixed attributes, nor even that a given sample "matter" or whatever the substance of things is supposed to be has certain properties. What concerns science in such shorthand expressions as "gold is yellow" is not that gold is a simple entity with the invariant property of yellowness—though we are not denying that metaphysically speaking that may be a fact. What does concern science is the permanent truth of a certain conditional statement not attributing attributes to a substance, but asserting the existence of a fixed relation holding between certain attributes and certain other attributes. That "gold is yellow" means to the scientist that under certain limited (standard) conditions there is a fixed relation between selective reflection for yellow light and the atom number (79); or, to put the same fact in a form which avoids even more clearly the assumption of the existence of an external "thing," what is meant by saying "gold is yellow" is nothing more nor less than saying that in a certain limited set of percepts (the limitation being that other percepts of the set must be standard) the percept "yellow color" is inevitably to be associated with the percept nexus "atom number 79." From this it follows that the real fixed entity of the scientist is not some bit of substance, but a proposition, the fixity of which is of the same nature as the truth of any proposition, whatever that is; and though it may be metaphysically necessary to assume some ultimate fundamental substance or fixed stratum of being, say matter or force, on which to tack "properties," science does not need to assume anything so meta-

physical. All it must assume is not some primary substance to which certain properties appertain, but only that if we have certain percepts certain other percepts are invariably present also. The question of ultimate substance it leaves to metaphysics.

In a like manner science leaves to metaphysics the question of the locus of the necessity or compelling power which it must assume correlates under standard conditions "yellow color" with "atom number 79," or rather correlates the percept "yellow" with other percepts associated with atom number, such as relative position of a certain fluorescent line on an X-ray screen. If there is to be any science at all, there must of necessity be some such correlation, but whether the reason for this correlation lies in some law of our percept mechanism, as it may very well, or whether it lies in some logical necessity inherent, say, in the definition of atom number, which logically requires that atom number 79 be associated with a band of selective absorption such that under standard conditions yellow light is selectively reflected, or whether this necessity is physical, it being the physical nature of gold, only to be determined experimentally, to so reflect—all these questions are outside the scope of science. To repeat, the raw question of experimental science is exclusively, "Is such and such a relationship between experienced data invariant or not?"; not, "Does a 'thing' have such and such properties?" or "Is such and such a relation a law of the external world?"

However, these raw questions of fact are not all there is to science, unless, indeed, we consider a purely descriptive account of factual relations science. Science *per se* attempts more than to describe, and though we may allow purely descriptive material, from which nothing is generalized or concluded, a tentative place in an incompletely developed science, a science really becomes scientific when its facts are so related that you can pass from one to the other by a determined route. It must be such that the connection of one fact with another is itself an integral part of that science. That is to say, a body of fact to be scientific must form a system, *i.e.*, an aggregate of fact, the specification of the relationship between which is a part of the specification of the aggregate.

But this is not all. Not only must we in science fix the connections between facts, but, if we are to pass from one body of facts to another by some process of proof or explanation which is sufficient to completely prove or explain the remaining facts, we must admit that science forms a system of the particular kind recently called logical,¹ it being the property of such systems that among the entities of which they are composed (in this case the propositions which con-

¹ This JOURNAL, Vol. XVI, p. 518 (1919).

stitute the science) there are certain ones (the more general laws or postulates) which, once they are given, determine completely some if not all of the remainder (the "proven" or "explained" less general theorems). Thus when once the general laws of science are given it is impossible that the theorems be otherwise. If this were not so and each fact were independent of the other, or if its relations to other facts were not of such a nature, rigorous proof would be impossible, and one law could not be said to be the consequence of another. Thus if we are to have science at all, we must admit some sort of necessity connecting one body of fact unambiguously with another. From the postulates of Euclid it must follow that the sum of the squares on the sides of a right-angled triangle must be equal to the square on the hypotenuse and not equal to some different quantity, for, to put it most briefly, the very essence of science is that of a logical system.

But though this must be admitted, I think, for science in general, and though it forms apparently the basic assumption on which science in general is built, for experimental sciences this assumption takes a particular form which has important consequences.

In the pure non-experimental sciences, if any there be, say in such a science as non-Euclidean geometry where no one would think of appealing to experiment to see if the sum of the angles of a triangle are greater or less than two right angles, and in which no test for truth value is pertinent save the mere fact that the propositions of the science form a logical system, *i.e.*, that theorems can be proven once postulates are given, sciences in which the question of the truth of the postulates themselves is quite outside the scope of the science, it is quite conceivable that this requirement that theorems be proven may be merely a physiological condition the brain structure imposes on thinking, or perhaps merely a convention of the scientist, a rule he has arbitrarily laid down to govern the game of science-making, and that the data of science itself, be they outside real triangles or percept-nexus triangles, are in fact entirely independent entities which really stand in no such determinate relationship as that supposed by the scientist when he proves one from the other. Perhaps it may be supposed the real data of science just are, and that that is all there is to it, and that any dependence of one on the other is a fiction imposed upon them for the convenience or perhaps even by the necessity of the human understanding.

But though such an assumption of the absolute independence of the basic data can, as has been said, be made for non-experimental sciences, that is, for sciences which depend only on self-consistency or other logical tests for their truth value, such an assumption can not be made for the experimental sciences. Here it must be assumed

that the data of science, quite independent of any conscious process of proof, are in themselves related in the way that is assumed in the deduction of one set of laws from another. Here it must be assumed, if experiment is to be used to prove or disprove theory, that in the outer world, or better in the percept-nexus which we are engaged in studying, there actually does exist a set of invariable relationships between facts, so that one fact and not some contrary fact does in reality follow from a given set of general laws, thus quite regardless of convention or any conscious process on our part. For it is to be noted that while in the purely non-experimental sciences, we have, or should have, confidence in our theorems only in so far as we are conscious that the mental or mechanical processes by which we passed from postulate to theorem were correctly carried out, in the experimental sciences, though we may think our reasoning in passing from one set of laws to another was quite correct, we almost always appeal where possible to an experimental verification of our reasoning; for we assume, and this is the basic assumption of experimental science, that, in reality and quite independent of any mistakes we may make in reasoning, the data of science, whatever they are, are in fact so organized that the very existence of one set of laws is inexorably connected with the existence of just those other laws which, in a properly formulated science, can be proven once the first set is given.

It is just this assumption which allows us to use the results of experiment as a check either of our reasoning in passing from one supposed law to another, or, if we have no reason to doubt our reasoning, as a check as to the possible truth of the supposed law we started from. Thus, suppose we had confidence in the first and second laws of thermodynamics, and derived from them by what we supposed to be rigorous processes of proof the law that for dilute solutions of non-dissociated substances the change of the freezing point with the concentration is equal to 1.99 times the square of the absolute temperature divided by the heat of fusion of the solvent. Suppose we try the experiment and find this is not so. There are then several things which may be wrong. (1) Our experimental conditions may not have been as we thought they were, our thermometer may be inaccurate, equilibrium may not have been established, *etc.*, *etc.*, but all these can easily be checked by processes involving no dubious assumptions. (2) Our assumption that our solution is dilute and non-dissociated may be wrong. If it were, certain consequences would follow and these in turn may be checked up by the same sort of processes we are describing. (3) Our proof may be incorrect. (4) Our assumption of the so-called laws of thermodynamics may be wrong. And (5) it may be that all these processes and as-

sumptions are correct, but that we are not justified, just because by a purely mental or at least human process we derived this law from other laws which are so, in fact, in assuming that we have any right to expect the theorem "proven" to be experimentally verified. Now the point to be noticed is that though we may doubt any or all of the first four of these assumptions we never doubt for a moment the fifth; and we would be willing to give up instantly even the laws of thermodynamics themselves, together with all of the consequences which follow from them, once we had convinced ourselves, perhaps even on the basis of a single very accurate measurement and single careful calibration of conditions and instruments, that experiment did not jibe with expectation, this even though the consequence which was tested was many times further remote from the postulates than the one we have just chosen. Never once would we give up the assumption that the data themselves were necessarily interconnected into a logical system, for to do this would be to give up the very possibility of an experimental test of assumptions and reasoning.

This must be noted as perhaps the most important point of this whole discussion for metaphysics, regardless of whether we regard the data of science as things outside, or as percepts, or even concepts. The mere fact of experimental science requires the outer world, if such a thing is to be assumed, to be a logical system in the exact sense stated, or, if we do not assume an outer world, it requires that the raw data of science, be they percepts, pure properties, partial realities, spirit, or what not, be likewise organized into a logical system, the laws of which can be tested by experiment. If the raw data of science are so organized, it apparently is of little effect on the methods and possibility of science whether you assume them composed of spirit, matter, force or what not, or indeed whether you assume that they dwell in an external world, in your mind, in some "Absolute," or nowhere at all.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Psychology of Functional Neuroses. H. L. HOLLINGWORTH.
New York: D. Appleton & Company. 1920. Pp. 259.

Professor Hollingworth in his book applies himself to two main projects. The first is represented by an attempt to give in psychological terms the type of reaction presented in psychoneurotic conditions. To do this he reverts to the conception of redintegration which Hamilton first used to indicate the tendency of a complex idea

to be reinstated upon the occurrence of one of its constituent parts. We need only grant that a part of a stimulus may provoke a reaction similar to the reaction provoked by the complete stimulus to see the application of this conception to the psychoneurosis. Its relation is especially traceable in the war psychoneurosis cases. In the individual, whatever the initial psychoneurotic symptom, it arose as a reaction to a very complex situation involving such varied details as weapons, ghastly sights and noises, physical violence, *etc.* The individual commonly recovers from the acute symptoms when removed from the stimulating environment. During some time afterward the occurrence of a single detail of the original complex experience is sufficient to induce the complete symptom reaction again. That this conception is presented with breadth of consideration is well indicated by such comments as these:

“Untutored [savage] minds are especially likely to display the redintegrative type of thinking. . . . The footprint of the enemy, the sight of his weapon, the sound of his voice are feared in much the same degree as is his actual attack. A very great part of the reactions and beliefs of primitive men is made up of just such conduct—acts which, if they would be exhibited by a man in modern life, would be considered psychoneurotic.”

It is properly enough explained that redintegrative reactions have a rôle in such normal processes as learning; also that wherever redintegrative reactions occur they are variously encountered both in normal and abnormal, faulty, incomplete, and otherwise inadequate forms. This leads to the statement,

“Sagacity is, then, the ability to comprehend properly the part in its relation to the whole and to discriminate out of a whole the appropriate relevant or significant detail. Failure in sagacity will thus imply a disposition to react to a present total situation by singling out some detail of it and reacting to this detail by some total reaction previously associated with a whole in which the detail figured as an item. This is the mechanism of the psychoneuroses.”

One's opinion of this *entirely* hinges on one's opinion of the *sagacity* element. We can accept the well presented account of the redintegrative reaction, *per se*, and admit that there is this psychological process in the psychoneurosis sequence. We hesitate, however, to accept the other implication—that inherent *sagacity* plays such a determining rôle.

The second main project of the book serves to furnish Professor Hollingworth with his reasons for his emphasis on this factor. It concerns intelligence ratings of nearly 1200 psychoneurotic individuals—soldiers under treatment during and at the close of the late war in the Plattsburg army hospital. From these examinations it was found that the soldiers with chronic or extended functional nervous conditions were in the main either decidedly inferior to the

average soldier in intelligence, or else considerably superior to him. The opinion is expressed that most of the average intelligence men who had psychoneurotic symptoms made a rapid recovery and did not reach a hospital for extended cases. Regarding the other grades of intelligence, it is suggested that the high grade cases failed to make prompt recovery because of a high strung sensitiveness to the effects, and the low grade because of inadequate motivation and insight.

It is now possible to explain why we are skeptical of the value of Professor Hollingworth's interpretation. He frankly stresses *sagacity*. His explanation remains good as long as his words relate to the psychoneurotic group of inferior mental capacity. When he encounters the other psychoneurotic group, that which is considerably superior to the average, in intelligence, he explains their failure to make prompt recovery by attributing to them "a high strung sensitiveness to the effects." High strung sensitiveness has no obvious identity with lack of sagacity. When it is needed to explain one large undisputed group, it strongly tends to weaken a theory, put forth as general in application, whose corner stone is something quite dissimilar.

One interesting observation in the book was gained by correlating the intelligence ratings with specific symptoms, with the latter divided into three large groups, objective or physical, subjective or mental, doubtful or transitional. The individuals with overt, objective somatic and postural symptoms were four years inferior in intelligence rating to those individuals whose symptoms were psychic, subjective and automatic. Those individuals manifesting a combination of both types of symptoms constituted mentally also an intermediate group. This particular finding accords with the observations of most writers, but it is of great interest to have it receive scientific confirmation.

Later chapters of the book deal with the "scattering" found in psychoneurotic cases, with the purely statistical aspects of the investigation, with a discussion of the reliability of group survey in the determination of mental age as compared with individual rating and with methods and standards of mental measurement.

The lucidness of the writing and clear cut formulation of thought need mere mentioning to emphasize the agreeable scientific spirit of the book. With a very few exceptions, there is sufficient skill in the use and understanding of medical diagnostic terms. Possibly an over-assuredness in the conclusions throughout is a defect. When the task is told in terms of approximate mathematical valence the exactness of the answer can perhaps be over-rated.

Chiefly for its method, but also for its conclusions which are stimulating, the book very much deserves study.

THOMAS K. DAVIS.

NEW YORK.

An Introduction to Social Ethics: The Social Conscience in a Democracy. JOHN M. MECKLIN. New York: Harcourt, Brace and Howe. 1920. Pp. ix + 446.

The close connection between scientific ethics and sociology is coming gradually to be recognized. This book is a most happy combination of the two subjects. It frankly bases ethical values upon the study of the social process. It therefore discards most of the paraphernalia of traditional ethics. There is no formal discussion of free will, of the nature of moral obligation, of the nature of good and evil, or of the *summum bonum*. Rather, after an introductory section of one hundred pages largely devoted to giving the historical setting of moral problems from Puritan times to the present, and after another section of about the same length devoted to a socio-psychological analysis of the moral sentiments, the author takes up the practical problems of an harmonious social order under present conditions, considering successively the moral problems involved in the relations of the individual to institutions in general, to the family, to the church, to the school, to private property, to machine industry, to business enterprise, to city life, and to the state.

To some Professor Meeklin's sociological approach to moral problems will seem not sufficiently profound and critical; but to many others it will give value to the book. Whatever special criticisms may be offered, the general value of such an approach can no longer be doubted. The author is fully aware of the limitations of present social science as a basis for ethics, but it may be fairly claimed that he has made the best use of his available material. He rightly sees in social psychology the chief hope of making the study of society scientific and hence the best basis for a scientific social ethics, although he draws more or less upon all of the social sciences. Moreover, he shows wide acquaintance with the best economic, political, and sociological writers, and usually uses their results critically, though not always.

The author has thus produced one of the most stimulating concrete ethical discussions of the problems of present democracy. The general title of the book is, perhaps, too broad; but its sub-title, "The Social Conscience in a Democracy," very nearly describes the contents of the book. As an attempt at the fusion of ethics and modern

social science for the solution of present social problems it deserves the careful consideration of all students of those problems.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. September-October, 1920. *Le mécanisme de la pensée, les schèmes mentaux* (pp. 161-202): DR. REVAULT D'ALLONNES.—“Modifying the statement of Aristotle, we assert that *it is not possible to think without schematizing.*” Sensation, perception, apperception, are distinguished on this basis, and judgment and thought studied as modes of employing schema. *Contribution à l'étude des “régressions psychiques”* (pp. 203-272): ALBERT LECLÈRE.—This study is devoted to the examination of the sexual aspect of the problem of psychic regressions. *L'hérédité des caractères acquis dans ses rapports avec le problème du progrès*, (pp. 273-294): DR. S. JANKELEVITCH.—“Man will become refractory to evil, not in virtue of a modification of his nature, but uniquely under the influence of an environment which will render immorality useless.” *Analyses et Comptes rendus*. J. Hoffmans, *La Philosophie et les philosophes, Ouvrages généraux*: P. MASSON-OURSSEL. C. A. Richardson, *Spiritual Pluralism and Recent Philosophy*: G. MARCEL. L. L. Penido, *La Méthode intuitive de M. Bergson*: R. GUÉNON. P. G. Franceschini, *Manuale di Patrologia*: P. MASSON-OURSSEL. J. Roger Charbonnel, *La pensée italienne au XVI^e siècle et le courant libertin*: P. MASSON-OURSSEL. Tomaso Campanella, *Città del Sole*: P. M.-O. H. L. A. Visser, *Collectief Psychologische Omtrekken*: A. VAN GENNEP. Giuseppe de Castellotti, *Elementi di Etica*: J. PÉRÈS. *Revue des Périodiques*.

THE AMERICAN JOURNAL OF PSYCHOLOGY, July, 1920. *Psycho-analysis of Charlotte Bronte, as a type of Woman of Genius* (pp. 221-272): LUCILLE DOOLEY.—The desolate childhood, the self-sacrificing womanhood and the gloomy home life are revealed in the writing of this brilliant author. The writer emphasizes the influence of the father. *An Experimental Study of Visual Form* (pp. 273-300): M. J. ZIGLER.—Visual form presents a dual problem, one in psychology and the other in applied logic. Identical stimuli approached in different sets of attitudes may arouse perceptions of different forms, while different stimuli approached in the same attitudes may arouse the same form. *Minor studies from the Psychological Laboratory of Cornell University. A note on the theory of Blacks, Greys and Whites* (pp. 301-302): F. L. DIMMICK.—Blacks,

grays and whites form two qualitative series placed end to end. This affords a clarification of the color theory. *The spatial condition of the fusion of warmth and cold in heat* (pp. 303-312): J. HENRY ALSTON. - Heat is a physiological fusion of the excitations normal to warmth and cold. *Book Review. The Social Evolution of Religion*, George Willis Cooke: PHYLLIS BLANCHARD. *Book Notes. The Mental Hygiene of Childhood*, William A. White. *Graphology and the Psychology of Handwriting*, June E. Downey. *Psychoanalysis; Its History Theory and Practice*, André Tridon. *Introductory Psychology for Teachers*, E. K. Strong, Jr. *Personal Beauty and Racial Betterment*, Knight Dunlap. *Imagination and its Place in Education*, Edwin A. Kirkpatrick. *Modern Spiritism*, A. T. Schofield. *Sex Attraction*, Victor C. Vaughan. *Women's Wild Oats*, C. Gasquoine Hartley. *The Hysteria of Lady Macbeth*, Isador H. Coriat. *An Introduction to Social Ethics*, John M. Meeklin. *An Introduction to Philosophy*, Holly Estil Cunningham. *The North Riding of Yorkshire*, W. J. Weston. *Native Villages and Village Sites East of the Mississippi*, David I. Bushnell, Jr. *Thirty-Second Annual Report of the Bureau of American Ethnology, 1910-1911. Thirty-Third Annual Report of the Bureau of American Ethnology, 1911-12. Third Annual Report of the Massachusetts Commission on Mental Diseases (1918).*

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NOTES AND NEWS

THE CARUS LECTURESHIP AND THE JOINT MEETING OF THE EASTERN
AND WESTERN DIVISIONS OF THE AMERICAN PHIL-
OSOPHICAL ASSOCIATION

In confirmation of a proposal made orally to Professor H. B. Alexander and by him reported to the Western Philosophical Association (now the Western Division of the American Philosophical Association) at its spring meeting in 1920, Mrs. Mary Hegeler Carus, widow of the late Dr. Paul Carus, has written the following letter:

“25 March, 1921

“PROFESSOR JAMES H. TUFTS,

“*Dear Sir:* The Edward C. Hegeler Foundation and the Open Court Publishing Company, as a tribute to the memory of Dr. Paul Carus, for so many years a devoted student of philosophy and kindred subjects, offer to provide for a series of lectures to be delivered under the auspices of the American Philosophical Association or the divisions of the American Philosophical Association, acting jointly.

“The terms and conditions of the offer are as follows:

“I. The lectures shall be known as the PAUL CARUS LECTURES.

“II. The lectures shall be given as the Committee choosing the lecturer may determine during the year 1921 or 1922 and at the meeting of the American Philosophical Association or the divisions of the American Philosophical Association, acting jointly. If there should be any reason for modifying this condition, the donor will be very glad to consider any requests for such modifications.

“III. The lecturer shall be chosen and the invitation extended by a committee consisting of not more than nine representatives of the American Philosophical Association (these representatives to be appointed by the Executive Committee of the American Philosophical Association, or by the Executive Committees of the several divisions of the American Philosophical Association, according to the rules and practice which govern such appointments) together with not more than three representatives of the Open Court Publishing Company.

“IV. The lecturer shall receive an honorarium of one thousand dollars, to be paid by the Trustees of the Edward C. Hegeler Trust Fund.

“V. Within a reasonable period after the delivery of the lectures, the manuscript of the lectures shall be delivered to the Open Court Publishing Company for publication in book form. This

provision shall be optional for the first series of lectures. It is understood that the honorarium shall not be regarded as a purchase of or royalty upon the published book, but that the author shall receive the usual royalty accruing from the sales of his book by the Open Court Publishing Company.

"Trusting that this offer may appeal to the members of the American Philosophical Association and make possible some real contribution to the field of philosophy and that the lectures, if given and published, may serve to stimulate and deepen the interest in philosophical studies, I remain

"Faithfully yours,

"MARY HEGELER CARUS,

*"Trustee of the Edward C. Hegeler Trust Fund and
President of the Open Court Publishing Company."*

In accordance with the terms of this letter and the instructions of the Eastern and Western Divisions the representatives of these two Divisions, in conference with Mrs. Carus representing the Open Court Publishing Company, chose Professor John Dewey to deliver the lectures at a joint meeting to be held in September, 1921, if possible. A letter and cable were sent to Professor Dewey, but no reply has been received. In view of the consequent inability of the Committees to make any definite arrangements, and of the desirability of having a well-attended meeting for these lectures the Committees have reluctantly decided to postpone until a later date the joint meeting, due notice of which will be given.

In making public this letter and announcement the officers of both the Eastern and the Western Divisions of the American Philosophical Association desire to express their appreciation of the generous interest in philosophical study and publication which prompted the liberal offer of Mrs. Carus on behalf of the Edward C. Hegeler Foundation and the Open Court Publishing Co. They desire to express also the hope that these lectures may encourage and strengthen the cause of philosophical study which Dr. Carus had so warmly at heart, and to which he devoted a life-time of service as editor and author.

A. H. JONES,

Secretary Eastern Division,

G. A. TAWNEY,

Secretary Western Division

THE JOURNAL OF PHILOSOPHY

PROFESSOR DEWEY, THE PROTAGONIST OF DEMOCRACY¹

PHILOSOPHERS have for centuries sought some ultimate principle, to contemplate which would be an end sufficient unto itself. Yet, according to Professor Dewey, the earliest philosophizing had no such aim. Primitive man's account of his world was invented in a fanciful way, in order to justify and preserve the existing social fabric. "Made of imaginations" it lauded the deeds of some mythical ancestor or creator; sanction of traditional authority was its motive. Later grew up the desire for scientific truth; a desire born of the pressure of practical needs. Arts and crafts, technologies, "give that common-sense knowledge of nature out of which science takes its origin" (p. 12). When these two purposes—the desire to justify established authority and the need of correctness—were combined, systems of philosophy arose. But their object was social and practical; only later did men forget the original aim, and develop a style of philosophy which is quite aloof from human needs. To point out the delusion that caused this falling away, and to recall philosophy to its native task, social service, is the reconstruction which the author of the work before us undertakes.

We need not cavil at Mr. Dewey's theory of the social-practical origin of philosophy. Its truth or falsity is scarcely verifiable; and it is not certain that he takes the theory seriously himself (*cf.* pp. 24–25). It is, to be sure, of a piece with much of his teaching hitherto; the practical motive is made fundamental, and disinterested curiosity is treated as secondary, if not unnatural. But his analysis which follows might be accepted without his genesis of philosophy, and to that we pass. How did philosophy get off the track, and how shall it be put right?

In brief, it went wrong because of the delusion of superiority—a delusion which, in the author's view, infected human society from top to bottom, and is not far from being the root of all evil. The two sorts of knowledge—empirical knowledge of this world and alleged knowledge of some sanctifying principle—were rated of different worth. "The workers and craftsmen who possess the prosaic matter-of-fact knowledge are likely to occupy a low social status, and their

¹ *Reconstruction in Philosophy.* John Dewey. New York: Henry Holt. 1920.

kind of knowledge is affected by the social disesteem entertained for the manual worker who engages in activities useful to the body" (pp. 12-13). So the support of tradition by a reasoned system assumed a higher dignity than the pursuit, by experiment and observation, of scientific information about nature. As the systems could not use those humble methods, they developed a technique of their own, which led to "an over-developed attachment to system for its own sake" (p. 21). Thus did philosophy gradually "arrogate to itself the office of demonstrating the existence of a transcendent, absolute, or inner reality" (p. 23), claiming "a higher organ of knowledge than is employed by positive science and ordinary practical experience . . . marked by a superior dignity and importance" (*ibid.*). This arrogation has persisted even until today, with the result that philosophy has remained aloof from practical concerns. To remedy the fault, it must renounce "its somewhat barren monopoly of dealings with Ultimate and Absolute Reality" and occupy itself with "enlightening the moral forces which move mankind" (pp. 26-27). The scientific method of experiment and observation must be applied to the social problems; the plain and humble instead of the autocratic method. The essence of Professor Dewey's reconstruction lies in the democratic attitude. Philosophy must descend to the scientific level, and give equal opportunity to all social programmes, testing them by their results, and affording superior privilege to no *a priori* deduction or conception of society. This is to be applied to all departments of life: education, the family, morals, politics, industry, commerce, religion. Evil and error lie in assumption of superiority or self-sufficiency—whether of a man, a race, a conception, a vocation, an institution, or a God. In a word, his programme is a revolt against superiority. On eighty-nine different pages of the book he characterizes the issue in terms of a struggle against aristocratic pretension for equal privilege. As Whitman was the poet, so is Dewey the philosopher, of democracy. He is, it seems fair to say, the epitome of Western democracy, its spirit become a self-conscious thorough-going philosophy of life; his work is the most characteristic contribution which this country has offered, and perhaps can offer, to the spiritual history of man. And the merits and defects of his programme are those of democracy itself; to estimate the one is to estimate the other. But let us get before us the detail of the programme.

Human progress has been marked by "the gradual decay of the authority of fixed institutions and class distinctions and relations" (p. 48). The older view was of "a universe with a fixed place for everything and where everything knows its place . . . and keeps it" (p. 54). "In short, classic thought accepted a feudally arranged

order of classes or kinds, each 'holding' from a superior and in turn giving the rule of conduct and service to an inferior" (p. 61). "Law is [in the older view] assimilated to a command or order" (p. 64). "We often hear about laws which 'govern' events . . . This way of thinking is a survival of reading social relationships into nature . . . the relation of ruler and ruled, sovereign and subject" (*ibid.*). But in the modern way "The remote and esthetically sublime is to be scientifically described and explained in terms of homely familiar events and forces" (p. 65); which is "the substitution of a democracy of individual facts equal in rank for the feudal system of an ordered gradation of general classes of unequal rank" (p. 66). Man's "interest has shifted from the esthetic to the practical; from interest in beholding a harmonious and complete scheme to interest in transforming an inharmonious one" (*ibid.*). The Greeks, to be sure, founded the science of mechanics, but as the democratic spirit was undeveloped, they could not go far; "mechanics were base fellows." But "the mechanization of nature is the condition of a practical and progressive idealism in action" (p. 72). "To respect matter means to respect the conditions of achievement" (*ibid.*). Yet with all this growth of the scientific spirit we find "in moral and political matters . . . the older order of conceptions in full possession of the popular mind" (p. 75). "That the Germans with all their scientific competency and technological proficiency should have fallen into their tragically rigid and 'superior' style of thought and action . . . is a sufficient lesson of what may be involved in a systematic denial of the experimental character of intelligence and its conceptions" (p. 99). We need, not worship of a higher power, but "the co-operation of those who respect the past and the institutionally established with those who are interested in establishing a freer and happier future" (p. 101), "to glorify the claims of reason without at the same time falling into a paralyzing worship of some super-empirical authority or into an offensive 'rationalization' of things as they are" (p. 102). Over against this democratic co-operation the interest in knowledge for its own sake appears to Professor Dewey aristocratic. "In contrast with such knowing, the so-called knowing of the artisan is [considered] base. . . . What condemns his knowledge even more is the fact that it is not disinterestedly for its own sake. . . . While civic or political and moral knowledge rank higher than do the conceptions of the artisan, yet intrinsically considered they are of a low and untrue type . . ." (p. 110). But "natural science . . . is something to be pursued not in a technical and specialized way for what is called truth for its own sake, but with the sense of its social bearing, its intellectual indispensableness" (p. 173). Nothing, in-

deed, has value in isolation; value is relative, and distributed equally in all directions. "Anything that in a given situation is an end and good at all is of equal worth, rank, and dignity, with every other good of any other situation, and deserves the same intelligent attention" (p. 176). No one end, such as ecstasy, knowledge, riches, health, is an end in itself, higher in dignity than the means to it. "Acquisition of skill, possession of knowledge, attainment of culture, are not ends: they are marks of growth and means to its continuing" (p. 185). "Democracy has many meanings, but if it has a moral meaning, it is found in resolving that the supreme test of all political institutions and industrial arrangements shall be the contribution they make to the all-around growth of every member of society" (p. 186). So the State is no fixed sovereign; it is "just an instrumentality for promoting and protecting other and more voluntary forms of association, rather than a supreme end in itself" (pp. 202-203). Sovereignty is a dogma. "Pluralism is well ordained in present political practice and demands a modification of hierarchical and monistic theory" (p. 204). "Organization is never an end in itself," but only a "means of promoting *association*" (pp. 206-207). Institutions are for man, not man for institutions; human progress by co-operation of all is the one absolute end.

Now these look to be the sayings of a generous and humane soul, and Mr. Dewey will be, and is, justly honored for his sympathy with "lower" interests and his plea for impartial co-operation. But we have to ask, as with any proposed reconstruction, is it as fair as it appears? Does not the author harbor certain resentments which render his programme as one-sided and injurious as are the very traditions whose faults he rightly points out? We believe that he does; we find his gospel, and that of democracy generally, not truly broad, or fair, but exclusive and narrow. It is not an impartial synthesis; the democratic remedy for human ills does not cure, but inflames, certain sores which rankle in the spiritual anatomy of man.

His estimate of scientific method—fundamentally important because he takes from that method his cue for philosophic reform—is, we think, quite askew. With all his respect for every-day "homely" fact, he does not consider the every-day procedure of the scientist. Science, he says, is interested primarily in "laws of motion, of generation and consequence" (p. 61) and constancy is not of "existence" but of "function" (*ibid.*). But if the scientific account is true, atoms are constant in existence as well as in function. The electron so far as known appears to be a fairly permanent structure. The Mendelian biologist, with his atomic theory of heredity, finds in the chromosome a substance, or permanent structure, passing from parent to offspring, and by its persistence de-

termining the inheritance. The tendency of present mathematics with its logical constants and elements is quite in the Platonic direction. Laws and functions are not the only constant things revealed by science. For all the theory of origin of species, the species we know are so stable that within the memory of man very few new ones have originated. The changes are vanishingly small as compared with the fixity. Nor is the world as portrayed by science so very democratic. It is a world of hierarchies: suns, planets, satellites, each in its fixed orbit or place; nervous systems ruling the behavior of organs, organs doing one kind of work and no other; atoms with fixed ways of combining;—the perusal of the results of science suggests an order more like the old feudal than the new democratic system. Mr. Dewey however selects those aspects of science that suit his world-view. Note the same preferential selection in the following: "Nowadays if a man, say a physicist or chemist, wants to know something, the last thing he does is merely to contemplate. He does not look in however earnest and prolonged a way upon the object, expecting that thereby he will detect its fixed and characteristic form. He . . . proceeds to *do* something, to bring some energy to bear upon the substance to see how it reacts; he places it under unusual conditions in order to induce some change. While the astronomer cannot change the stars themselves, he can at least by lens and prism change their light as it reaches the earth" (pp. 112-113).

As a fact, "merely to contemplate" is the first thing he does. He cannot experiment unless he begins by merely thinking about the problem. It is also the last thing he does. He records the experimental results and scrutinizes them in an "earnest and prolonged way," whereby he detects the nature of the phenomenon. Newton, it is said, replied to one who asked him how he made his discoveries, "by intending my mind." There are three stages in an experiment: first, contemplation in order to have intelligent procedure; second, the process of change induced by novel conditions; third, the mere contemplation of the results. The third is the end and motive of the first two. With many scientists, if not most, it is a motive which has no ulterior purpose—just knowledge for its own sake. Is it not quite misleading to pick out the second stage and treat it as the essence of scientific method? Surely a genuine spirit of fairness would grant all three an essential place, while recognizing that pure contemplation is the highest of all. Is it not a distortion which declares that the whole method "signifies nothing less than that the world or any part of it as it presents itself at a given time is accepted or acquiesced in *only* as material for change" (p. 114, italics mine).

And in spite of his profession of respect for science, it looks as if Professor Dewey did not sincerely respect that discipline, for he makes little use of its results, and what they reveal as to the constitution of this world. He loves equality, sociality, fluidity, and he selects from the great *corpus scientiæ* certain motives allied to these. Meanwhile thinkers of opposite preference, professing as strongly *their* respect for science, pick out opposite aspects. Messrs. Russell, Spaulding and others find science to be not experiment, but a system of timeless relations. Of what value toward progress is it, thus to confront one extreme with another? Neither can extirpate the other. Nor can the pure esthetic delight of knowing be abolished by apotheosis of experimental sociology; it is as intense and persistent as the gregarious impulse which Western democracy glorifies. A genuine human sympathy would be broad enough to rise above these exclusions. It would respect—as that democracy has shown little aptitude for doing—man's desire to contemplate changeless beauty, to attain intellectual independence, to create a work of art for its own sake, to worship a transeendent Deity; yes, even though these ends were conducive to no further or "social" good. That their effects are good in the long run may be true, but they are not valued for that reason by those who attain them. Modern Americans, with their love of publicity, co-operation, and "getting together" do not need to be told what Mr. Dewey is telling them. They are not in grave danger of drawing away from their fellows to study classical philosophy, or to attain in some cloister a mystic union with God. They have already reacted violently against these tendencies, and he who would intensify that reaction is but preventing a just balance between contemplation for itself and utilitarian ends, between art and applied science, between inner religion and external social work; a balance wherein neither shall be subservient to the other.

Professor Dewey seems to think that one who finds the satisfaction of a philosophic system its own justification must be hostile to social interests. It is certainly the case that one thinker who advocates social amelioration has no appreciation of the "spectator view of knowledge." Thereby, however, he does not increase the measure of human life; he diminishes it. Why should not knowledge be both power to transform the world, and a joy forever by itself? Let some men devote themselves chiefly to the first and some to the second, each respecting the other's unique contribution. Would this not be a sounder humanitarianism than to condemn the "spectator view of knowledge"? And indeed, as matter of history, great thinkers like Plato, Aristotle, Aquinas, Spinoza, Kant, Hegel, did have both motives. It is not true of these that "forbidden by conditions and held back by lack of courage from making their knowledge a

factor in the determination of the course of events, they have sought a refuge of complacency in the notion that knowledge is something too sublime to be contaminated by contact with things of change and practice" (p. 117). These men wrote on ethics and politics, and tried to influence the society of their day. If they were in varying degrees pre-committed to "aristocratic" doctrines, Mr. Dewey is no less pre-committed by his environment to democratic ones. He is no more trying to change the practise of today than they tried to change that of their times. He is the democratic philosopher in the world of American democracy, as Hegel was the aristocratic in the world of Prussian aristocracy, and he carries democracy to quite as great an extreme as did Hegel his aristocracy.

That the democratic attitude is not an impartial one appears in another way when Mr. Dewey treats of the practical interests. "When they [the economic ends] are recognized to be as intrinsic and final in their place as any others, then it will be seen that . . . if life is to be worth while, they must acquire ideal and intrinsic value" (p. 171). We must do "away with the traditional distinction between moral goods like the virtues, and natural goods like health, economic security, art, science, and the like" (p. 172). (Mr. Dewey might recall that Aristotle considered all of these to be a part of virtue.) And, to repeat what was quoted above: "Anything that in a given situation is an end and good at all is of equal worth, rank, and dignity with every other good of any other situation, and deserves the same intelligent attention" (p. 176). Yet none of these goods, however equalized, are to be thought self-sufficient; each is but a means to the total improvement of life, and its value lies in its leading. The denial of self-sufficiency thus brings us to the glorification of *process*. "The process of growth, of improvement and progress, rather than the static outcome and result, becomes the significant thing. Not health as an end fixed once and for all, but the needed improvement in health—a continual process—is the end and good" (p. 177). "Growth itself is the only moral end" (*ibid.*). Not possession, but invention and creation, is good. "Acquisition of skill, possession of knowledge, attainment of culture are not ends; they are marks of growth and means to its continuing" (p. 185). It is the movement, the process itself of passing from one stage to the next higher, that is good. Is growth in knowledge then a process distinct from the acquisition of knowledge, and the end which justifies the acquisition? One would have thought these identical. But because for Mr. Dewey no acquisition or possession is good in itself, being "static," it must be that only the process itself is good—process as distinct from possession. Is not this motion for motion's sake? Such a doctrine is not true to experience. Men do not wish

to grow for growing's sake alone—weeds grow as well as flowers—but because thereby they get something good and do not lose it. When a moderate quantity of the desired thing is best, they desire no more (if they are wise); *e.g.*, one does not wisely seek to better his health indefinitely, or his wealth. But knowledge, tact, good-will, taste—these we wish to increase without limit. Bodily goods and spiritual goods differ in just that point; and it is not a sound rule which overlooks the distinction and makes them “of equal rank, worth, and dignity.” The democratic attitude of putting all these on a level, of fusing all indiscriminately in a process, is a specious impartiality which works injustice to the higher ends. We cannot afford to give equal consideration and opportunity to all impulses, all motives, all social experiments. The higher ends must be recognized to be higher, and must be more favored. They are, in our poor human nature, weaker than the lower. Fine art cannot compete with trade in the open market, literature cannot compete with best sellers, nor the philosopher with the inventor. The higher callings, which demand arduous and prolonged labor with little apparent result, would die out if they were not specially protected—*e.g.*, by fixed salaries and permanent tenure, as is the case with professors. The human infant would not survive if he had only equal opportunity with the beasts. Or we may put the same point otherwise by saying that the only way to make opportunities truly equal is to favor some callings, some motives, some men much more than others. True democracy means unequal privilege and turns into a form of aristocracy. And Mr. Dewey might, if pressed, admit this; but he nowhere does so, and he does emphasize many times the evils of superiority and special privilege. The effect of his book on the American democrat would not be favorable to distinction of better from worse in the process of growth. Deep in his heart he loves equality, and he takes no care to point out the need of discrimination in applying that category. Recall what he said on p. 186: “the supreme test of all political institutions and industrial arrangements shall be the contribution they make to the all-round growth of every member of society.” Now we do not want the “all-round” growth of everybody. We want some to do chiefly certain things, others to do chiefly other things. Difference of skill, distinction of higher and lower value, division of labor, are necessary to life. And because it tends irresistibly to overlook these differences, democratic impartiality becomes partiality to the lower.

In political philosophy the author is inevitably led to the dangerous doctrine of pluralism. The State is no end in itself; only a means of “promoting and protecting other and more voluntary forms of association.” As such, in his view, it becomes actually inferior,

as we shall see, to association for association's sake. "Every combination of human forces that adds its own contribution of value to life has for that reason its own unique and ultimate worth. It cannot be degraded into a means to glorify a State" (p. 204). But when the claims of various associations within a State conflict, as they often do, who shall have authority to settle the quarrel? Dreading authority as he does, he no more furnishes a means of settling disputes than do other pluralists. "Organization" he declares "is never an end in itself" but rather "a means of promoting *association*" (pp. 206-207). "Society is the *process* of associating" (p. 207). "To this active process, both the individual and the institutionally organized may truly be said to be subordinate" (*ibid.*). Herein process appears once more as end-in-itself; the process of getting together for the sake of getting together. This indeed is the one great sanctifying principle: "when the emotional force, the mystic force one might say, of communication, of the miracle of shared life and shared experience is spontaneously felt, the hardness and crudeness of contemporary life will be bathed in the light that never was on land or sea" (p. 211). But of course, rogues may share as well as honest men, and even honest men do **not** want to share all things. Nobody denies the pleasures of social life, or the need of co-operation in some things; but mere sharing is no more an end in itself than mere privacy. The whole difficulty is to determine what ought to be shared and what ought not, as well as what sort of sharing, subject to what rules, shall be permitted. And how men may remain together without some organization being *established*, some government *fixed* which they shall obey, we do not know. Naturally Mr. Dewey would not, in his reaction against sovereignty, go to the extreme of anarchy, but how far would he go? His words indicate no limit. Is it right to declare that the State is not final without confessing that at times we have to treat it as if it were? It is not refutation but qualification that is here needed. No doubt Mr. Dewey knows how to supply that qualification; but those who look up to him as a leader—and they are many—have not his wisdom and will probably forget, if they ever knew how, to draw the line. His teaching therefore will work—has already worked—in the direction of extreme radicalism and a fanatic devotion to change of the social fabric. He has accused philosophers of a "morally irresponsible estheticism"; his words and emphasis, taken as they stand, lead to a morally evasive fluidity. It is true that he has spoken of doing justice to the claims of reason and tradition (*cf.* pp. 101-102), but the rarity of that sort of statement, compared with the tremendous stress he lays upon the opposite motives, make it appear perfunctory. Notice his words about freedom; how they

weight the fluidity and neglect the stability which make up that attribute! "Freedom for an individual means growth, ready change when modification is required. It signifies an active process, that of release of capacity from whatever hems it in" (pp. 207-208). Of course it does; yet it signifies also ability to remain firm and rigid when firmness and rigidity are required. It is the omission of counterpart-truths like this that renders his doctrine a menace.

Of democracy we read "It is but a name for the fact that human nature is developed only when its elements take part in directing things which are common, things for the sake of which men and women form groups—families, industrial companies, governments, churches, . . ." (p. 209). This sounds very well; one thinks of "government with consent of the governed," self-determination, and other modern ideals. Yet, taken as it stands, it is misleading and dangerous. How far are the elements to take part in directing? Should the children take part in the family councils? Is the family to be governed by equal co-operation, without any authoritative head? When I call in a doctor, do he and I vote together as to the remedies to be used? Or is the town-meeting, with its equal privilege for all citizens, the ideal of industrial companies, churches, and other groups? "Take part" may mean anything, from equal co-operation to mere presence as a factor to be conciliated. If it means the latter, it amounts practically to nothing. But the *tendency* of one who reads these words is to read into them "take *equal* part." When we remember how Mr. Dewey dislikes superiority, we feel that he has this at the back of his head. And people who preach democracy usually do advocate equal responsibility and equal participation. Equality is the very heart of their doctrine. Yet the degree of participation which children can be allowed in families is so different from the degree which the citizens exercise in a town-meeting, that it is quite unenlightening to group both under the same rubric, as the democratic ideal.

Perhaps our author is referring, however, merely to a far distant goal. "Human nature is developed only when," . . . he says. Because men are now not at all equally developed, they cannot be granted an equal share in directing; but the ideal is to bring them all to the same high level and give them equal participation, and even at present to let them participate in directing according to the degree of their capacity. The latter we of course admit; it means that we want the best to control most, the inferior to control little. But if democracy meant no more than this it would not be acclaimed as the message of hope and the emblem of progress. Its hopefulness is thought to lie in the belief that inferiority will decrease. Professor Dewey would hardly advocate participation in directing unless

he wished participation to increase, to be greater than it now is. And we submit that there is a radically false ideal at work here; an ideal not openly proclaimed or perhaps consciously entertained—that of the equal development of all men (*cf.* the quotation from page 186). This ideal is false because such equal development is undesirable; it would, indeed, be fatal to progress. It would render society as monotonous as the desert; it would do away with the beautiful economy of division of labor, with individuality, with unique achievement. Men need to look up to superiors, to obey, to revere. Ideals must be embodied in superior persons if they are to be effective. Personality is, and forever ought to be, a mighty force; and the social democratic heaven of equal development would reduce personality to nothingness.

Mr. Dewey, however, undoubtedly means that we ought to give to the less developed a greater share in control of common things than they now possess. "We exaggerate the dependence of childhood so that children are too much kept in leading strings" (p. 185). I think many would answer "Not in this country!" And if he feels thus about family relations, where the difference between parent and child is so much greater and more obvious than the difference between man and man in industrial companies, churches, *etc.*, presumably he would put the demand for participation more strongly with the latter. He has made no explicit assertions on these matters; but the tendency of his teaching, his omissions and his stresses, move unambiguously toward the greater sharing of control and eventual doing away with authority. It is not that *he* does not know where to stop, but that what he has written does not suggest to anyone else where to stop—or even the desirability of stopping at all. Drawing the line appears rather as a concession to human weakness; aristocratic motives are portrayed as intrinsically evil, democratic as intrinsically good. And this, we believe, is fundamentally unsound. Personal authority, stable institutions, differences of level, unequal privilege, are as ideal and as finally good as equality. Security of possessions, fixed knowledge everlastingly true, everybody seeks and will always seek. These are quite as good as readiness to acquire new possessions and new truth. We do not wish to make men equal through and through; we do not wish the ordinary man to be capable of doing the work of the expert; equality should pertain only to certain elementary necessities of life. We do not wish the best endowed to put off their progress until the least endowed have come up to their level. We do not desire equal opportunity except where capacity is approximately equal and competition is stimulating. And the providing of equal opportunity does not tend to make endowment equal; it puts a premium on the lower capacities which are less

restrained by scruple and more quickly realized. We do desire progress, but progress without increasing stability of what one has gained—whether of material or spiritual goods—becomes the revolution of the squirrel in his cage, or the treadmill of the horse. We wish the lesser men to become greater, and the superior men to become greater still. But all the emphasis of democracy today, and of Professor Dewey its protagonist,—no matter what he *would* say if pressed—is *actually* in favor of the lower, material needs, the judgment of the masses, the standards of the unskilled. It will if unchecked tend to bring humanity down to the level of its least developed members, and is thus directly against progress.

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THE DISTRIBUTION OF THE PREDICATE

IN a recent number of this JOURNAL¹ Professor Dotterer proposed a new definition of "distributed term." This he did with a view to meeting certain objections which I had suggested in my *Elementary Handbook of Logic* against the common doctrine that the predicate is distributed in negative propositions and undistributed in affirmative. I shall attempt to show in what follows that the new definition with its accompanying explanation leaves the objections unanswered.

My first objection was directed against the position of those who reject Hamilton's theory of the quantification of the predicate, but hold the doctrine of the distribution of the predicate. These logicians reject Hamilton's theory, because it supposes that in the act of judgment the extension of the predicate is present to the mind. This, they claim, is not true. But when they come to explain their own doctrine, they say that the mind refers to the extension of the predicate. My contention was that the mind can not refer to the extension of the predicate unless the extension of the predicate is present to the mind; hence, if Hamilton is wrong, these logicians are wrong.

My second objection was that the use of the doctrine of the distribution of the predicate involves a vicious circle. This doctrine is used by logicians to determine certain implications of a proposition. The beginner in Logic has no difficulty in seeing that the subject of a proposition may be distributed or undistributed, but it is not self-evident to him that this is true of the predicate. For this reason the logician sets about proving it. But in order to prove it, he appeals to the implication of the propositions, and then he

¹ Vol. XVII, pp. 519-522.

tells the student that, in drawing out the implication, he must remember that the predicate is distributed or undistributed; that is, he first calls upon the student's knowledge of the implication to prove the doctrine, and then he bids the student call upon his knowledge of the doctrine in order to find out the implication.

My third objection was based upon the partial inverse of *All S is P*. The partial inverse of this proposition is *Some non-S is not P*. According to the doctrine of the distribution of the predicate, *P* is distributed in the partial inverse, whereas it was undistributed in the original proposition. Consequently, if we accept the doctrine of the distribution of the predicate, we shall have to pronounce the partial inverse invalid; and if we pronounce it invalid, we shall have to hold that conversion and obversion are illegitimate processes.

In the fourth edition of his *Formal Logic* Dr. Keynes says that the distributed *P* in the partial inverse is explained by the fact that, in inverting *All S is P*, we assume the proposition *Some things are not P*.² I have discussed this suggestion of Dr. Keynes in my *Handbook*. Professor Dotterer's explanation is substantially the same as the one contained in the third edition of Dr. Keynes's work.

It will doubtless be admitted that the doctrine of the distribution of the predicate should not be retained in works on Logic merely on the ground that it is venerable. It was introduced into Logic, not for its own sake, but avowedly as an instrument. Its purpose was to facilitate the explanation of certain inferences, particularly those involved in conversion and the categorical syllogism. If it does not fulfill this purpose, it is useless and has no place in Logic. I think Professor Dotterer's explanation robs the doctrine of all its usefulness. His argument is as follows: "Given 'All *S* is *P*' as the original proposition, and 'Some non-*S* is not *P*' as its partial inverse, it is indeed true that *P* is distributed in the inverse and undistributed in the invertend. In the invertend, however, it is undistributed with respect to *S*; and in the inverse, it is distributed with respect to non-*S*. And this is no more of a contradiction than to say that John is tall as compared with William, but short as compared with Henry. The 'hypothesis of distribution' does not, then, 'break down' in the case of the partial inverse; for in this case the rule of distribution is simply irrelevant."

I would observe, first of all, that I did not say that the circumstance of a term being undistributed in the invertend and distributed in the partial inverse constituted a contradiction, but that it caused the doctrine of the distribution of the predicate to break down. By this I meant that it was inconsistent with the purpose of

² *Formal Logic*, p. 140.

that doctrine and with the use to which it had been put by logicians. The chief use to which logicians had put the doctrine was to caution us against distributing a term in the conclusion if the term had been undistributed in the premise or premises from which the conclusion was derived. Otherwise, they said, the conclusion went beyond the information contained in the premises, and therefore, was invalid. Now, the partial inverse of the *A* proposition violates this rule, and yet it is valid. I infer from this that the doctrine of the distribution of the predicate breaks down.

Professor Dotterer replies that *P* is undistributed with respect to *S* in the invertend, while in the partial inverse it is distributed with respect to non-*S*, and therefore my argument is of no avail. But what, precisely, is the force of this remark? Is it intended to have a general application? I take it that it is, particularly as it is enforced by the illustration: "John is tall as compared with William, but short as compared with Henry." I understand, then, that the doctrine of the distribution of the predicate is not affected, if a term which is undistributed with reference to a given term in a premise is distributed with reference to a *different* term in the conclusion. Take the following argument: *All M is P; No S is M; therefore No S is P.* Professor Dotterer's comment, applied to this case, would run as follows: "It is indeed true that *P* is distributed in the conclusion and undistributed in the major premise. In the major premise, however, it is undistributed with respect to *M*; and in the conclusion, it is distributed with respect to *S*." Professor Dotterer says the rule of distribution is simply irrelevant in the case of the partial inverse. If that is true, then it is irrelevant in the case of the conclusion *No S is P*; for the reason he gave for its irrelevancy in the first case holds also in the second.

This is what I meant when I said that Professor Dotterer's contention destroyed the usefulness of the doctrine of the distribution of the predicate. Hitherto the doctrine has been used to test the validity of the conclusion in a categorical syllogism. But it can not be used for this purpose if it is irrelevant.

One of the general rules of the categorical syllogism reads: "No term may be distributed in the conclusion which was not distributed in one of the premises." Professor Dotterer suggests the following wording as more accurate: "Neither term of the conclusion may be distributed with respect to the other, unless in the premise in which it appears it is distributed with respect to the middle term." But how can this rule be proved? The doctrine of the distribution of the predicate can not be invoked to prove it; for in the case of a conclusion in the categorical syllogism the doctrine is irrelevant. In

consequence, the rule will have to be proved independently of the doctrine; and this means that the doctrine is useless.

After formulating his definition of "distributed term," Professor Dotterer makes the following remark: "In speaking of the distribution of a term we are not merely concerned, to employ Professor Toohey's terminology, with the *import* of a proposition, but also with its *implication*." These words lead me to believe that in my use of the terms "import" and "implication" I have not made my meaning clear to Professor Dotterer. I do not think that my use of these terms differs in any essential respect from that of, *e.g.*, Dr. Keynes. By the *import* of a proposition I mean that which is explicitly before the mind when the proposition is uttered. Thus, in the proposition, *Every S is P*, the intension of *P* and the extension as well as the intension of *S* are explicitly before the mind. But in common with most English logicians I claim that the extension of *P* is not explicitly before the mind. Hence I hold that the extension of *P* is not part of the import of the proposition. By the *implication* of a given proposition I mean any proposition which is involved in the import of the given proposition; that is, any proposition which can be derived from the given proposition. Let *Some P's are S* be an implication of *Every S is P*. The extension as well as the intension of *P* is explicitly before the mind in *Some P's are S*. Therefore, the extension of *P* is part of the implication, but not of the import, of *Every S is P*.

If we say that the extension of *P* is part of the import of *Every S is P*, we are espousing Hamilton's theory. But unless we adopt that theory, we can not speak of the predicate of a proposition as being distributed or undistributed; for the words "distributed" and "undistributed" have no meaning except in reference to the extension of a term.

When Professor Dotterer says, "in speaking of the distribution of a term we are not merely concerned . . . with the *import* of a proposition, but also with its *implication*," does he mean that the implication as well as the import is a necessary factor in determining whether a term is distributed or undistributed? If he does not mean this, I do not understand the relevancy of his remark. If he does mean it, then my second objection holds against his position. If we must consult the implication of a proposition to learn whether one of its terms is distributed or undistributed, we can not use our knowledge of the distribution of the term to derive the implication without involving ourselves in a vicious circle. Besides, which of the implications shall we fix upon to determine whether *P* is distributed or undistributed in the original proposition? *Some non-S is*

not P is an implication of *All S is P*; and yet *P* is said to be undistributed in *All S is P*.

Professor Dotterer's definition of "distributed term" is as follows: "A term is distributed with respect to another term when by reflection upon the mere form of the proposition containing the terms in question we can tell that the class denoted by the one is either 'wholly within' or else 'wholly without' the class, or some part of the class, denoted by the other." I do not know whether Professor Dotterer is an advocate of Hamilton's theory or not; but this definition is intelligible only from the point of view of Hamilton's theory, at least as regards the propositions *A*, *E*, *I* and *O*. The words, "reflection upon the mere form of the proposition," exclude all appeal to the implication. But since we can not contemplate the class denoted by a term without having the extension of the term present to the mind, and since we can not "tell that the class denoted by the one [term] is either 'wholly within' or 'wholly without' the class, or some part of the class, denoted by the other," unless we compare the classes together, it follows that the extension of both terms is present to the mind, and therefore forms part of the import of the proposition. This is Hamilton's doctrine.

There is an inconsistency in the logician treating the subject and predicate of a proposition as classes—an inconsistency which is masked by the ambiguity of the words *All* and *Some*. Each of these words may have a collective as well as a distributive force. When *All* has a distributive force, it is exactly equivalent to *Every*. *Some* has a collective force in the proposition, *Some strikers destroyed the factory*. When *Some* has a distributive force, it is equivalent to "every one of a certain number of" or "no one of a certain number of," according as the proposition is affirmative or negative. Thus, *Some men are wise* is the same as *Every one of a certain number of men is wise*. The rules of Logic are based on the supposition that the subject term is used distributively, or at least that it is not used collectively. The words "distributed" and "undistributed" can not be applied to a term unless it is used distributively. In the proposition, *All the angles of a triangle are less than two right angles*, the subject term, "angle of a triangle," is distributed; for it is used distributively, and the proposition is the same as *Every angle of a triangle is less than two right angles*. But in the proposition, *All the angles of a triangle are equal to two right angles*, no logician would speak of the subject term, "angle of a triangle," as either distributed or undistributed. Now, when the subject and predicate of a proposition are considered as classes, the proposition can not convey any meaning unless both terms are interpreted in a collective sense; and if they are interpreted in this sense, the words

“distributed” and “undistributed” can not be applied to them, any more than they can be applied to the subject of the proposition, *All the angles of a triangle are equal to two right angles*. The words “collected” and “uncollected” would not be altogether inappropriate. If, then, the rules of Logic suppose that the subject is not used collectively, how can they be reconciled with a treatment of the proposition which imposes upon both subject and predicate a collective sense?

Moreover, it is impossible, at least in affirmative propositions, for the predicate to be used distributively, and therefore, it is impossible for it to be either distributed or undistributed. The words *Every* and *Every one of a certain number of* are the test whether the subject term is used distributively or not. If neither of them can be prefixed to the subject of an affirmative proposition, the subject is not used distributively. But it is obvious that neither of these signs can be prefixed to the predicate. Take any of the examples adduced by logicians to prove that reference is made to the extension of the predicate, and it will be seen that this test would reduce them to nonsense. Thus, the proposition, *All Tartars are Turanians*, would become *Every Tartar is every one of a certain number of Turanians*. But the converse, *Some Turanians are Tartars*, may without violence be made to read *Every one of a certain number of Turanians is a Tartar*.

One more remark in conclusion concerning the partial inverse of *All S is P*. The difficulty connected with the partial inverse is due to an initial mistake in the interpretation of the particular negative proposition. On the common interpretation, *Some non-S is not P* gives us more information about *P* than does *All S is P*. But in reality it does not. It is true that, when a term is distributed in a proposition, we have information about more individuals in the extension of the term than we have when the term is undistributed? There can be no doubt that we have, when the *subject* is distributed. *Every man is mortal* gives us information about more men than does *Some men are mortal*. In Logic, the application of the doctrine of the distribution of the predicate is based on the supposition that the same is true of the predicate. And the fact that the proposition, *No S is P*, gives us the universal converse, *No P is S*, imparts a degree of plausibility to this view. But the *O* proposition stands on entirely different ground. Take the two propositions, *Some mammals are bipeds*, *Some mammals are not bipeds*. There is more information concerning *mammals* conveyed by these propositions taken together than there is by the first proposition alone. But the first proposition conveys as much information about *bipeds* as the two combined. The second proposition gives no information what-

ever concerning bipeds. And yet the doctrine of the distribution of the predicate supposes that the second proposition contains more information than the first concerning bipeds. Because we know that *Some mammals are bipeds*, we can say something about certain individual bipeds. But from the mere knowledge that *Some mammals are not bipeds* can we say something about every individual biped? Can we say something about each biped which we could not say without knowing that *Some mammals are not bipeds*? If we can not say something about every individual biped, how can we have information about more bipeds in the second proposition than we have in the first? If *Some bipeds are not mammals* were set down as the converse of *Some mammals are not bipeds*, the converse would be invalid, not because it contained more information than the convertend concerning mammals, but because it contained more information concerning bipeds.

The truth of *Some S is not P* is consistent with the truth of either of the following propositions: *All P is S* and *Some P is not S*. This is evident from the following pairs of propositions: *Some animals are not horses—All horses are animals*; *Some Americans are not physicians—Some physicians are not Americans*. If we write *Some P is not S* as the converse of *Some S is not P*, we exclude *All P is S*. This we are not justified in doing; for it may be that *All P is S* is true. It is not because *S* is "distributed" in *Some P is not S* that this proposition is invalid, but because it purports to convey information concerning *P* which the original proposition does not warrant. *All S is P* conveys information about every *S*; but *Some S is not P* does not convey any information whatever, whether directly or by implication, about *P*. And yet the assumption underlying the doctrine of the distribution of the predicate is that the second proposition gives us as much information about *P* as the first one does about *S*. This assumption is unwarranted; and it is this assumption which is at the root of the difficulty that has arisen in connection with the partial inverse of *All S is P*.

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A SOURCE OF THE PLOTINIAN MYSTICISM

OUR purpose in this paper is to point out the systematic, or, as one might say figuratively, the deductive reasons which led to Plotinus's mysticism. Dean Inge in his Gifford Lectures has already indicated the empirical reasons. He seems to feel that the experiencing of a mystic vision is enough warrant for a mystical interpretation of the universe. Since Porphyry's life of Plotinus

gives us ample testimony of his master's weakness for trances and his gift of second sight and of the more serious things which happen to certain souls, Dean Inge has a point of view which is perhaps better directed than our own. For it sees in mysticism that which is precious to every thinker of to-day, empirical data. As mystics have never been at a loss to point the finger of scorn at the half-way empiricism of tough-minded thinkers, Dean Inge's account will be more than welcome both to disciples of Plotinus, as he admits himself to be¹ and urges all students to be, and to mystics of other schools.

Yet there are reasons to believe that the empirical method was not the method which called most winningly to the post-Aristotelians. The reflective imagination of even the late Greek was directed by certain assumptions which were by no means empirically discovered. Some of them seem to be a sort of formulation in language of prevailing Greek taste and manners. That which acts, for instance, is always superior (*τιμώτερον*) to that which is acted upon. That which is autonomous, or self-dependent, is perfect; that which depends on something else is imperfect. That which is "natural," or in accordance with "nature" is good. Nothing exists without its own "excellence," which is the satisfactory fulfilment of its function upon this earth.² One sees these and many other assumptions, now overtly acknowledged, now shown only through their implications, in the greater part of Greek reflective thought. The interesting feature of this is that Greek life actually seems to have gone on as if motivated by them as by maxims.

Among the lesser of these axioms is one which Theophrastus in his *de Sensu* (No. 1) says divided Greek psychologists into two camps. It is the thesis that only like can know like. There was the likeness-school, to which Theophrastus assigned Parmenides, Empedocles, and Plato, and the contrast-school, to which he assigned Anaxagoras, who in spite of experience asserted that there was no perception without pain (*de Sensu*, No. 29), and Heraclitus. But as Beare points out in his *Greek Theories of Elementary Cognition* (p. 237), though there was a difference of opinion about sensation, they all agreed that in cognition proper there was an identity of character between the knower and the known.

Plotinus, as one might infer from Plato's inclusion in the likeness-school, also believed that only similar things could know one another. He asks, for instance (*Enn.*, I., viii, 1), by what organ we can know evil, for none of our organs are evil in themselves.

¹ See his Gifford Lectures, Vol. II., p. 219.

² This assumption at least had important implications. *V. Nich. Ethics*, I., vi, where the function of Man as Man is discussed.

He ends his chapter on beauty with the remark that a man should attempt to make his eye similar to the object he is trying to see; the eye, he says, harking back to Plato (*Rep.*, 507), would never have been able to see the sun if it had not taken on sun-like qualities; similarly the soul would be unable to see the beautiful if it did not first become beautiful itself. "Become then," he says (*Enn.*, I., vi, 9), "godlike and beautiful if you wish to look upon God and the beautiful."

It is in this assumption that we find, for our present purposes, a source of his mysticism.

What now is knowledge like in the philosophy of Plotinus? It is not, as it was in Democritus and the Stoics, receptive; it is active. There is no "given" in Plotinus; there is only a "made." The subject of knowledge is active even in sensation. "In vision," he says (*Enn.*, III., vi, 2), "it is sight which acts and the eye which is acted upon." (Sight, it should be said, he thought could not be acted upon since it is incorporeal, and the incorporeal is impassive.) Sensations, he says as he opens this portion of the *Enneads*, are not passions but acts (*ἐνέργειαι*). Later, in a chapter which Porphyry testifies was written immediately after this (*Enn.*, IV., iii, 26) he says, "Just as a workman is the soul in sensation, and as his tool, the body." Hence when he came to write on *Sensation and Memory*, he was prepared to begin by the assertion that sensations are not blows or imprints (*τύποι*) received by the soul, nor yet the impressions of a seal (*Enn.*, IV., i, 1).

Rejecting a conclusion which later philosophers accepted with relish, Plotinus argued that if we perceived only the imprints of objects upon our souls, we should be seeing not the objects themselves but their shadows. He takes as a typical case the experience of seeing, for sight was to him as to Aristotle (*de Anim.*, 429a) the chief of our senses. There must be in vision both the seen and the seeing, the object and the cognitive—or here sensory—act; so that obviously sensations can not be imprints. Again, were objects inside our souls, as they would be if they were imprints, we should never have to figure out where visible things are and how large they are. "Thus I believe," he concludes (*Enn.*, IV., vi, 2), "that the visible and the audible are distinguished by the soul, not as if they were both impressions, not that at all, nor yet images, but acts directed towards their natural objects."

This is a sort of doctrine of specific energy turned inside out. Whereas Mueller believed that the stimulation of certain nerves was always provocative of the same type of sensation, no matter what the stimulus, Plotinus believed that certain faculties, like that of seeing, had certain appropriate objects which alone they could

deal with. A human being confronted by a conglomeration of sensory material, actively selects the visual by his power to see, the audible by his power to hear.

Both sensation (*αἴσθησις*) and knowledge (*κρίσις*) are active. Plotinus is so firmly convinced of this that he invokes one to explain the other, as when he explains the apparent diminution of far away objects by the eye's inability to reach out beyond a certain distance (*Enn.*, II., viii, 1).

Just what act is involved in perceptual knowledge, Plotinus does not tell us specifically. He does say, however, that it is the operation of purely psychic functions, as distinct from such functions as the emotions, which are dependent on the body, and are hence impurely psychic. To know in the best way then, which is equivalent to knowing truly, would have the effect of exercising the purely psychic functions of man.

The ideal of knowledge must lie in its approximation to excellence, in its ability to achieve its aim. Now the aim of all things, in the Plotinian world, is first to produce (*Enn.*, V., iv, 1), and then to return to the world of ideas. But the return to the world of ideas is in plain language an attempt to be oneself, for the idea of an object, in Plotinus if not in Plato, is both the model after which the object was made and the most perfect specimen of the object—and the second probably followed from the first. Even to-day the impulse to return to the pattern after which our institutions have been fashioned is not unknown; almost all nationalistic propaganda relies upon some such assumption as the identity between the perfect specimen and the original specimen. To Plotinus the beautiful object was the ideal object, or the object of this earth finally conjoined with the archetype in Heaven. To a Christian Plotinian who believed that man was made in the image of God, true knowledge would be that knowledge which most adequately fitted the divine word, which was not far from what the Christian philosophers did say. It would take us too far afield to discuss the point here, but a little exercise of one's imagination will lead one to see how widespread this conviction was and how in fact it lasted at least as late as Spinoza, whose intellectual affiliations with Plotinus are by no means widely enough acknowledged.³ In scholastic language the Plotinian return to the world of ideas might be expressed as the coincidence of an object with its essence. But that coincidence is beauty, and furthermore it is goodness.

It is those values which man strives to understand when he is

³ See the whole matter of *sub specie aeternitatis*, the Spinozistic conception of freedom, of time, and the refusal to relinquish the insolubility of the human being—*homo cogitat*.

in search of wisdom. That is why when one has analyzed the theory of knowledge of Plotinus, one sees clearly that knowledge is not the result of study, research, experimentation, observation, but of a pure life devoted to moral values. Knowledge must again be active and finally it must make the subject like the object—for only like can know like.

Is it difficult to understand why he was a mystic? Ordinary knowledge seemed to him to be a separation of subject and object. Discursive reason, the affair of terms and propositions, seemed to make a schism in the cognitive act. What was required was a sort of fusion, for only a fusion of some sort would produce sufficient similarity between subject and object to make the cognitive relation true. He had, as we have said, rejected the Stoic theory of imprints, so that an image of the One in a separated soul of man would not do the work. It must be a complete similarity, if any, and it must be active. Since all true knowledge about any object reveals the object as perfect, knowledge of God—as we have grown used to speak of the metaphysical object—must reveal God. But to do this thoroughly the subject must in some way turn into God.

Plotinus found the fusion he wanted in the ecstatic vision, and inverting the Socratic formula of finding virtue in knowledge, he found knowledge in virtue. Hence training for the ecstatic vision was bound to be moral and not scientific. There is no need to trace here the steps along the Mystic Way which everyone knows, beginning significantly enough with a catharsis and ending with a banquet at which the soul becomes both the vision and the seer, at which it thinks in a manner which does not carry it beyond itself (*Enn.*, VI., vii, 34–5–6). It apprehends its object intuitively (*νοεῖν ἑφάπασθαι*).

It has to be an intuitive apprehension, if Plotinus's likeness-hypothesis is to be retained. The One has no qualities by which it can be described; it simply *is* (*Enn.*, VI., vii, 37). Hence the discursive reason (and how beautifully this is reproduced in Bergson) can not adequately deal with it, for the discursive reason is analytical (*Enn.*, V., iii, 17). If the One has no distinguishable qualities, it may be said to have all qualities blended together; blended, however, not resting side by side unassimilated. Because they are thus blended, the One can not be said even to think (*Enn.*, VI., vii, 39), for thinking would involve their separation.

The soul to know the One must also lose its limiting attributes and its distinctiveness, for how—on Plotinus's hypothesis—could the limited know the limitless? We must then set out to make ourselves expansive, to radiate as it were until we touch the edges of infinity.

As a matter of fact this would be a very difficult feat for us to perform in the Plotinian universe. For Plotinus has assured us already that there is an individual ideal to which each of us may struggle; not one great enveloping ideal for mankind as a whole, but separate ones for Plato and Socrates and Alcibiades (*Enn.*, V., vii), for I suppose that that is the import of his chapter on the ideas of individuals.⁴ But the idea of an individual person must be the limit of his perfection; the copy can not exceed its pattern. Yet in the ecstatic vision we find oddly enough a mode of transcending that barrier and of working our way into the total being of the One.

The first step in the process is obviously getting rid of the body. A body is the last thing on earth which characterizes the Plotinian One, for the corporeal is merely the possibility of everything else, whereas in the One everything is realized. Yet the simple expedient of disembodiment by suicide will not do, for that is violence (*Enn.*, I., ix). The violence which is necessary for suicide would submit the soul to the degradation of passion, and that plainly would serve little for purifying it.⁵ The natural way to get rid of the body is by exercising the virtues. For the exercise of the virtues is action, not passion, a distinction which carried in Plotinus's mind a very heavy normative burden.

One should note that this catharsis is not the negation of the Oriental mystic. As Dean Inge has pointed out, the *via negativa* of Plotinus is somewhat different from what he calls "a progressive impoverishment of experience until nothing is left" (*op. cit.*, II., p. 146). It is not oblivion in the sense that Nirvana is oblivion, for the soul when it is like the One must continue its activity. To be sure it involves a denial, but a denial of some things for the sake of affirming others. It is no cry to the heartsick to throw off desire; it is a cry rather to assert oneself, to conquer that which degrades. Desire which elevates, such as love, is an integral part of the most excellent knowledge.

The soul, after purifying itself and uncovering its likeness to the One, does not know the One simply by existing. There is no cognitive relation magically effected whenever two similar things exist side by side. The soul must advance to a contemplation of its object.

But what act can the soul do to the One to bring about knowledge of it? Nothing. For anything done to the One from without

⁴ Later Neoplatonists seem to have rejected this doctrine. Bouillet in his translation of the *Enneads* gives a note on *Enn.*, V., vii, which cites Alcinoüs to this effect.

⁵ Cf. Porphyry: *Sententiæ*, IX., Firmin-Didot, Paris, 1896, 'Ο γούν θάνατος διπλοῦς· ὁ μὲν συνεγνωσμένος λυομένου τοῦ σώματος ἀπὸ ψυχῆς· ὁ δὲ τῶν φιλοσόφων, λυομένης τῆς ψυχῆς ἀπὸ τοῦ σώματος· καὶ, he adds shrewdly, οὐ πάντως ἕτερος ἑτέρῳ ἔπεται.

would be a shocking limitation of that which by definition is unlimited. In the first place the One is not susceptible to a passion; it is impassive, as the pure soul is. In the second place there is nothing outside it. The One is all-inclusive; it absorbs even time into eternity. So it includes individual souls. Yet, since souls advance towards things which are like themselves and seek union with them (*Enn.*, I., vi, 2)—a principle also of Greek physics, I believe—so now, having become similar to the One and in its presence, they throw themselves into it, forgetting whether they are men, or animals, or essences, or the whole (*Enn.*, VI., vii, 34).

This is the banquet at which the soul achieves adequate knowledge of the One. It should not be considered a rejection of ordinary knowledge, but a development of it. The object is different. Since the object can not change to suit the limitations of the subject, the subject must change to fit the needs of the object. In knowing the One, the problem is to make the soul infinite in scope, perfect, indefinable. And since there can not be two beings so characterized, the result was bound to be a coalition. But the reason for the coalition can be found, not merely in Plotinus's quaint desire to be mystical, but in the fundamental principles of his theory of cognition.

One word in conclusion. Knowledge of this sort is bound to be incommunicable, as all self-conscious mystics have recognized. It is only knowledge which is discursive which is communicable. Hence the only way to pass along the knowledge one apprehends in ecstasy is arousing the sentiments which characterize the ecstasy. That is why Plotinus could have urged that philosophers contemplate the beautiful and turn their thoughts from formal logic which, he says (*Enn.*, I., iii, 5), is to dialectics what writing is to thought.

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REVIEWS AND ABSTRACTS OF LITERATURE

Psychologie du Raisonnement. EUGENIO RIGNANO. Paris: Alcan. 1920. Pp. xi + 544.

M. Rignano, the editor of the journal *Scientia*, and probably best known in this country as a biologist, attempts in this study a task which for the most part psychologists have been very chary of undertaking; and the wealth of suggestion and illumination that his broad scientific background is able to bring to it makes the American somewhat envious of the ease with which the French and the Italians can disregard the boundaries of the individual *fach* in the interests of a more comprehensive truth. M. Rignano, more-

over, betrays a most uncommon familiarity with American psychological investigation, citing it almost as freely as the work of the older civilizations. One wishes that he were acquainted with the more recent developments of behaviorism, and especially, since his conclusions point to a somewhat similar viewpoint, that he had heard of Professor Dewey's *How We Think*. But as it is the apparent independence with which the Italian savant has reached his position serves to corroborate the findings of Professor Dewey, emphasizing as well as throwing much new light upon the purposive nature of the thinking process.

Starting from a positivistic and experimental point of view, and acknowledging a debt of gratitude to Mill's logic, M. Rignano regards reasoning as a function that has naturally developed in the history of the race as an instrument towards the better adaptation of the organism to its environment. Consciousness itself arises in the conflict between the competing "affective tendencies" with which the organism is furnished and which determine the ends of its activity while leaving the way open for an indefinite number of possible solutions. The core of the thinking process consists in the possibility of exploring in imagination the various suggested ways of attaining the desired goal—of performing imaginatively experiments whose successful conclusion will enable the man to solve the difficulty without recourse to the method of actual trial and error. Logical thought is distinguished from mere random thinking by being at all times subject to the control and guidance of a definite end or purpose, and is valid only in so far as the imaginative experimentation in which it consists is capable of actual verification.

With this conception of the nature and function of the thinking process as a basis, M. Rignano turns to a consideration of its evolution. Reason has become increasingly abstract through the grouping together of objects which for our purposes are "equivalent" in that they possess certain attributes in common. Classification and abstraction are a teleological process which brings to bear knowledge already learned and thus paves the way for the acquisition of further facts. Simultaneously reason has advanced from a simple process of intuition or the immediate jumping at conclusions to the detailed and elaborated processes of scientific deduction, which are but an intricate form of oscillation between the formation of new generalizations and the imaginative experimental elaboration to which they are subjected in the interests of the desired end.

The most interesting portion of the book to those already familiar with this mode of approach is the chapters devoted to the higher forms of reasoning, of which M. Rignano distinguishes two sorts, that represented by mathematical science, whose end is the

attainment of truth, and that represented by legal and syllogistic dialectic and by metaphysics, whose aim is purely apologetic and menial. It can hardly be said that he succeeds fully in extending his experimentalism to mathematics; but he marks a real advance upon the classic pages of Mill, and his criticism of modern mathematical logic should be read by all who regard logic as something more than a fascinating game. His positivist heritage leads him into a rather undue disparagement of all forms of reasoning which aim at anything more "interested" than pure scientific truth; and though he recognizes that the desire for knowledge is as much an "affective tendency" as any other, he somewhat weakens the force of his earlier biological argument by digging too deep a gulf between scientific and "interested" thinking. After all, there is as much conceit in thinking you can get the universe into your mind as in reading your mind into the universe.

M. Rignano has by no means written a definitive analysis of the reasoning process, but he has written one to which all who are interested in the workings of the human mind can turn with profit. He stands in the tradition of both Mill and James, and in his biological studies he has found a starting point for a very fruitful and refreshingly naturalistic treatment of a field whose possibilities are so limitless as to frighten off most intruders. That he tells the whole story of thought the realists may indeed question; but that he has given us one of the best honest and straightforward accounts of the actual workings of the mind we yet possess no one can doubt.

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JOURNALS AND NEW BOOKS

JOURNAL OF EDUCATIONAL PSYCHOLOGY. January, 1921. Vol. XII, No. 1. *Announcement of the Reorganization of the Journal of Educational Psychology* (pp. 1-2).—The journal will be devoted primarily to the scientific study of problems of learning and teaching. The purpose is to make it a clearing house for the discussion of scientific investigation and experimentation. Series of articles will be organized, discussion departments created, pertinent educational publications in the field will be promptly reviewed. *The Interpretation and Application of the Intelligence Quotient* (pp. 3-13): FRANK N. FREEMAN.—The purpose is to discuss the relationship between the I.Q. as a measure of mental capacity of the individual and the facts of mental development. *Mental age* is an absolute measure, but *mental age difference* is a relative term. It expresses the individual's superiority or inferior-

ity in terms of a year's mental growth as a unit. When applied to the Binet scale, this measure would result in apparent greater retardation or acceleration in the case of younger ones. The question arises, "What is the nature of intellectual ability which is implied by the use of the I.Q.?" The common assumption is that the rate of intellectual growth is not uniform, but regularly decreases with advancing age. The assumption made by some investigators that intellectual growth follows a curve which approaches the logarithmic curve is not borne out by the results of the point scale examinations. The author concludes that the application of the I.Q. to other than the Binet scale must be made with great caution and only after determining that it is a suitable method of representing the scores in other tests. *The Constitution of Arithmetical Abilities* (pp. 14-24): EDWARD L. THORNDIKE. — The importance of habit formation or connection-making has been grossly underestimated by the majority of teachers and writers of text-books. Illustrations are given as samples of the procedures recommended by a consideration of all the bonds that one might form and of the contribution that each would make toward the abilities that the study of arithmetic should develop and improve. *A Critical Study of the Concept of Silent Reading Ability* (pp. 25-31): L. W. PRESSEY and S. L. PRESSEY. — Is either the form or the content of the matter read an important conditioning factor in silent reading? The writers' conclusions are tentative. It is their guess that scales of the type of the Kansas Test and Munroe Test are really by far the best examples so far of tests of attention—which the devisors have stumbled upon without knowing it. They are good tests but they have the wrong label. For investigation of real ability in assimilative reading the writers would suggest: (a) a preliminary instrument for detecting oral reading habits; and (b) a test of vocabulary, and these two might be supplemented by (c) any one of the standard reading tests to investigate habits of attention. *A Combined Mental-Educational Survey* (pp. 32-43): RUDOLF PINTNER and HELEN MARSHALL. — The next step in psychological and educational measurement is the combination of mental and educational tests. Two group tests, an educational and a mental, have been prepared, to measure school work and native ability respectively. These have been standardized and a simple method for estimating the difference between them given. This difference is the most important value for school diagnosis. *Department for Discussion and Research Problems*: LAURA ZIRBES. *Notes on Articles in Educational Psychology*. *New Publications*.

Briffault, Robert. *Psyche's Lamp: A Revaluation of Psychological Principles as Foundation of all Thought*. London: George

- Allen & Unwin, Ltd. New York: The Macmillan Co. Pp. 240.
- Johnston, Joseph S. Christ Victorious Over All. Published by author, 640 East 43rd St., Chicago. 1921. Pp. 233. \$2.
- Landes, Margaret W. The Philosophical Writings of Richard Burthogge. Chicago: Open Court Publishing Co. 1921. Pp. xxvi + 245. \$2.
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NOTES AND NEWS

LOGIC AND ETYMOLOGY

Not so many years ago the people of a certain Pennsylvania village were accustomed to refer to some of their sidewalks as "stone boardwalks." While this etymologically absurd phrase has not become "good English," usage seems to permit this similarly incoherent expression, "a dilapidated wooden house." Etymology is not always a sufficient indication of meaning in present usage. We do not restrict the science of *morals* or *ethics* to the study of customs; neither do we employ the word *aesthetics* as the title of a chapter on sense-perception.

These commonplace reflections are suggested by Professor Laguna's discussion of the complex dilemma,¹ in which this type of argument is pronounced fallacious on the ground that the conclusion asserts a "disjunction," while all that we are justified in inferring from the premises is a *logical sum*. In this criticism, as also in the claim that the minor premise of the simple dilemma "says more than is necessary," Professor De Laguna apparently assumes that the disjunctive proposition expresses a *disjunction*; but, as Whately, Mansel, Mill, Keynes, *et al.*, have been careful to point out, the disjunctive proposition (etymology to the contrary notwithstanding) does not *disjoin* but simply *enumerates* alternatives. On this account Keynes indeed suggests that the so-called disjunctive proposition might better be denominated an *alternative proposition*, except in the special case in which the alternatives are mutually exclusive. And if the logical vocabulary could be thus reformed, there would be one less occasion for throwing stones at the despised logicians.

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¹ This JOURNAL, Vol. XVIII., No. 9.

THE JOURNAL OF PHILOSOPHY

MIND DISCERNED

“WE have said that those objects which can not be incorporated into the one space which the understanding envisages are relegated to another sphere called imagination. We reach here a most important corollary. As material objects, making a single system which fills space and evolves in time, are conceived by abstraction from the flux of sensuous experience, so, *pari passu*, the rest of experience, with all its other outgrowths and concretions, falls out with the physical world and forms the sphere of mind, the sphere of memory, fancy, and the passions. We have in this discrimination the *genesis of mind*, not of course in the transcendental sense in which the word mind is extended to mean the sum total and mere fact of existence—for mind, so taken, can have no origin and indeed no specific meaning—but the genesis of mind as a determinate form of being, a distinguishable part of the universe known to experience and discourse, the mind that unravels itself in meditation, inhabits animal bodies, and is studied in psychology.”¹

This passage from Santayana's *Reason in Common Sense* is quoted for homiletical rather than critical purposes. I confess, however, that I have found no little difficulty in attempting to construe it intelligibly and systematically. There is apt to remain with me a residuum which is ambiguous and obscure. For, if the genesis of mind is the consequence of a discrimination which, in its turn, is made by processes of conceiving and abstracting, there seems obviously to be presupposed as already generated or existing a mind which discriminates in that manner. And if such a mind is to be presupposed, it is not easy to make out whether it is mind in the transcendental sense without origin or specific meaning, or whether it is the mind known to experience and studied in psychology. Both seem to be logically excluded. For a mind which discriminates by conceiving and abstracting can hardly mean the sum total and mere fact of existence, and a mind which, as a consequence of such discrimination, becomes a determinate form of being, can hardly be the mind which, by discriminating, leads to that consequence. Yet mind as mere fact of existence and mind as a determinate form of

¹ *The Life of Reason*, by George Santayana, Vol. I, pp. 124-125.

being seem to exhaust the whole domain of mind as defined in the passage and its context.

These considerations I naturally believe are as obvious to Santayana as they are to me, and that belief makes me suspect that the passage was not written to provoke an excursion into dialectic. I suspect that his presentation of a flux of experience coming somehow to be discriminated into material objects—making a single system which fills space and evolves in time—and a sphere of memory, fancy and the passions, is an attempt, not to raise metaphysical problems, but to tell in a fairly accurate way after all, how, in an individual's life, his personality and the world he lives in come to be sharply set over against each other. Such, at any rate, was my understanding on first reading the passage. Later readings brought out and emphasized the difficulties to which I have given expression. They have led me to do something more, to consider afresh the question of mind in the transcendental sense and the mind which is studied in psychology. And it is because they have done this, that I now approach the question with this introduction.

It is to be emphasized that what now follows is neither criticism nor exposition of the quoted passage, although its words may frequently recur. I can not easily escape their haunting suggestiveness and have no desire to. The mind which inhabits animal bodies and mind in that sense in which the word is extended to mean the sum total and mere fact of existence, set forth a contrast which is not easily escapable when one remembers the writings of philosophers. Moreover, reflection quickly leads to the recognition that no matter how absolute the varied determinations of being may be taken to be, determinate forms of being are discovered in the course of one's personal history. The universe which we investigate is, in a very genuine sense, a universe of discourse—certainly, a universe discoursed about—a sort of total object of thought, the totality of which seems to be in no wise impaired by any of the distinctions discovered or set up within it. The mind which is studied in psychology as a determinate form of being exists in this universe of inquiry alongside other determinate forms of being from which it is distinguished. Both it and they are in some sense objects of thought and their being so does not in any way seem to exclude either them or the distinction between them from the total universe of inquiry. In other words, the world of material objects and the mind which inhabits animal bodies lie, as it were, discriminated in a single universe of discourse and may be subjects of thoughtful inquiry even if such inquiry may seem never to occur except with the presence of some animal body with a mind inhabiting it.

Shall we say then that the total universe of discourse to which all distinctions and discriminations are relevant is mind in the transcendental sense, the sum total and mere fact of existence? An affirmative answer could identify itself with several recognized systems of philosophy. But it is not any such identification which is here sought, but rather what understanding, if any, is to be given to such an affirmation.

Let us consider the total universe of discourse, that realm in which all determinate forms of being lie, so to speak, side by side in their manifold relations. We may give to this universe other names, such as the world of phenomena or the sum total of experience. Naming it is, however, apt to disclose some prejudice about it or some theoretical construction of it, of which it itself may be innocent. If it is named a world of phenomena, the term "phenomena" may imply no more than that it appears as just what it appears to be; but the term may also imply that its items are phenomena or appearances of something else and thus involve a relation not possibly given within the universe we are considering. For clearly the total realm of being does not contain within itself a relation to something not contained within it, and a relation to something wholly exterior to it would not be a relation open to investigation. Propositions involving such a relation would be meaningless. Again, if the universe we are considering is named the sum total of experience, the term "experience" may mean only that we are considering it, talking about it, regarding it in any way we can regard it, or making trial of its many factors; but the term may also mean that the universe of discourse is the result of some anterior process by which it is generated and comes to be the kind of universe it is. In this latter sense "experience" is not an item within its boundaries, and can not be explored. The expression "the total universe of discourse" may involve similar difficulties. It has, however, the advantage of suggesting primarily logical considerations. It brings at once to the front the fact that what we are concerned with are those realms of being which are objects of study and inquiry, the universe of the chemist and the physicist as well as the universe of the moralist and the psychologist. It emphasizes subject-matter as over against speculation and hypotheses. It calls before us the natural attitude of the man who finds a purse and looks to see what is in it. So men find rocks and trees, seas and stars, memories and fancies, and look to see what these things are and what can be said about them. All inquiry starts in this way and not with "phenomena" or "experience" or "sense-data." These may be arrived at later as in-

terpretations or explanations of what it was with which inquiry started, but they are not original with its inception. It is, therefore, in the hope of keeping close to the initial act of inquiry into definite, concrete subject-matter that I speak of the total universe of discourse, using the term "total" to mean no more than the attempt to leave out no instance whatever of such inquiry.

This universe in its totality—meaning by totality what I have just defined—might conceivably be the object of a single individual's consideration. We have a sense of that whenever we enter a library which contains measurably all that men have ever said or discovered about this universe. With time and patience enough one might read every book and learn what purses had been found and what treasures within them. But it is not the magnitude of the information possibly to be derived in this way that is in point here, but rather the fact that such a reader, were he asked to note it, would observe an underlying continuity in his readings. He would observe for instance that the physicist and the psychologist were both studying sounds even if the former said they were waves of air and the latter, sensations; that the moralist and the economist were both investigating goods even if the former called them objects of desire and the latter commodities of exchange. In sum, he would observe that in all his reading he was confronted with a world to be interpreted and with interpretations of that world. The latter might vary from Genesis to Einstein, but the former would seem to be invariable. Such a reader might leave the library with what I conceive to be a very simple, but also a very fundamental piece of metaphysical wisdom, namely that in spite of the varieties of interpretation, there is, logically speaking, but one subject-matter to be interpreted. The physicist and the psychologist have the same subject-matter although they interpret it differently, likewise the moralist and the economist, likewise everybody. That is, all inquiry is ultimately relevant to the same subject-matter, the same universe of discourse. It is the continuity of this subject-matter, underlying all interpretations of it, which makes it possible for the reader to detect what he is reading about.

To strip this universe of every shred of interpretation is not easy. For, in the first place, some interpretation has apparently laid hold of it before one is led to the attempt so to strip it. And, in the second place, any stripping is inevitably fraught with the danger of being itself an interpretation of some sort. On this double difficulty one might dwell at length, for the search for what is called "the immediate" has been long, laborious, and unconvincing. Yet, as I take it, the search is ill-advised. We are not

called upon in our investigations to divorce subject-matter and interpretation in any way which would force upon us two wholly disconnected universes. That puzzling obligation does not as a matter of fact confront us. We might with greater truth assert that any attempted divorce would be meaningless, since interpretation involves itself the identification of the subject-matter to be interpreted. This assertion seems to be valid when followed out in detail. For what are sounds? The physicist and the psychologist both answer the question and it is quite clear that they are both telling us what sounds are. There is no difference of subject-matter between them. There is something to which their replies, however different, are relevant and that something is identified by them and their hearers. If some lover of the pure immediate should interpose with the claim that to call that something "sound" is already to interpret it, we should have no difficulty in recognizing that he was talking about the same item in the universe of discourse about which the others were also talking. In short, subject-matter needs no divorce, either absolute or relative, from interpretation in order to be identified. If it did, it is quite clear that the visitor to the library could not understand a single book he read, or discover any differences of interpretation or opinion among the authors.

Consequently it would appear that we can tell what subject-matter is either by identifying it or interpreting it. Asked what sounds are, we either produce them or refer to physics and psychology. This fact recalls many familiar contrasts of philosophy, such as knowledge of acquaintance and knowledge about, fact and meaning, existence and explanation, object and idea. That such contrasts should so naturally and constantly recur is good evidence that they are metaphysically sound. They indicate that the universe of discourse, that is, again, the universe within which all inquiry occurs and proceeds, is characterized fundamentally by the contrast of subject-matter and interpretation, or, we may say, of object and idea.² Although we may be enticed by various considerations to attempt to divorce the terms of this contrast so that they may constitute initially two distinct realms of being which are subsequently united by some secret agency, we never really succeed. Man has contrived their union only through hypotheses which are ultimately either unintelligible or *petiones principii*. We might better side with those who say, "What God hath joined together, let no man put asunder." For no inquiry into the universe of discourse has ever succeeded in separating it into a universe of objects apart from

² This I take to be Spinoza's doctrine of the attributes of extension and thought, and the basis of his axiom, "A true idea agrees with its object."

ideas and a universe of these ideas absolutely apart from objects. In the words of Spinoza : *Ordo et connectio idearum idem est ac ordo et connectio rerum.*

Since the universe of discourse is a universe of this kind, we might give to it with some appropriateness the name of mind. Such a name would be used in the transcendental sense, for it would be used to indicate possibilities, the possibility of knowledge, of inquiry, of discursive thinking. It could not mean that a mind was taking thought of a world. In this latter sense the name could have no specific meaning. Neither could such a mind be said to have an origin. One might reluctantly admit that the universe of discourse itself might have an origin, that it was not self-sustained and self-sufficient, but mind in the transcendental sense could have no origin within it, since mind in that sense is but a name given to the universe's salient character. And that name would indicate the sum total and mere fact of existence as constituting the universe wherein inquiry is active and productive.

Clearly this mind is also not a determinate form of being, a distinguishable part of the universe known to experience and discourse. It does not inhabit animal bodies and it is not studied in psychology. Nor does it explain the universe it constitutes, for it is not a substance which supports that universe, nor a cause of which that universe is an effect. It is a name for the fact that object and idea are already married whenever their union is open to consideration. It is a protest against the divorce courts of epistemology. It may be more, indicating a type of structure which the metaphysician must recognize in any dealing with being in its ultimate character.³

What then is the mind studied in psychology? Clearly it is not mind in the sense we have been considering. No argument is needed, I imagine, to support this statement, for the mind studied in psychology is a mind which remembers, imagines, perceives, reasons, is disturbed by passions, moved by desires, and, above all else, inhabits animal bodies. It is a biographical and not a transcendental fact. It is a determinate form of being. It has a genesis and an origin. It is studied in psychology and to that study it must largely be left here. Since, however, the passage from Santayana which led us to it is a summary of its genesis, we may consider that topic in the light of our previous discussion. I am fairly content to let Santayana's account of its genesis stand, for, as already indicated, that account calls us to note how the sphere of memory, fancy and the passions falls out with the physical world, and forms

³ I have suggested this in an article on "Structure." See this JOURNAL, Vol. XIV, No. 25, pp. 680-88.

a sphere by itself although still in touch with what it has left. Every individual can, I imagine, discover some such genesis in his own life if he studiously looks for it. And assuredly the things which for an individual do not make up the physical world are the things which are studied in psychology. Santayana's account may, therefore, stand. What is said in the following is neither exposition nor criticism, but only considerations which are in line with the previous discussion and which are prompted by the statement that there is a genesis of mind in the psychological sense. But strictly it is not with its genesis specifically that I shall be concerned, but with something relevant to its genesis, namely the possibility of it, as a determinate form of being, interpreting the universe in which it finds itself.

The mind studied in psychology inhabits animal bodies. Whether it inhabits all such bodies is uncertain, but the question whether it does is one of the best proofs of its habitat and a clear indication that its definition is ultimately biological. It is distinguished in the body not in the way the head, brain, or any anatomical part of the body is distinguished, but in the way the life of the body is distinguished. It is not a part of the body in the sense that the fingernails are a part of it. If we call it a part at all, we tend to follow Aristotle and say that body and mind are parts of the living individual, and are more like an axe and cutting than they are like an axe-head and an axe-handle. Disembodied spirits seem unable to function without a medium, and souls, if they survive one body, seem forced to seek another. So that even if we say that the mind is not a part of the body in the anatomical sense, and even if we fancy that the mind can be without a body, it must have a habitat to be effective, to be communicated with, and to be studied.

Now the animal bodies which mind as a determinate form of being inhabits are items in the universe of discourse. They themselves belong to the total domain of things which can be investigated and are objects of inquiry like all other objects in the same domain. Asking what they are, we say, among other things that might be said, that they are the habitations of mind, and that being such they think and reason. They interpret the world in which they live. They say, among other things, that sounds are waves of air and also that they are sensations; that goods are objects of desire and commodities of exchange. I am not concerned here with their justification in saying these things, but with the fact that they do say them and with the possibility of saying them that lies back of that fact. Of our interpretations of subject-matter we say that some are sound, others unsound, some correct, others incorrect, some

true, others false. But it is quite clear that back of such affirmations and fundamental to them is the possibility of making any affirmations at all. On what does that possibility depend? In other words, how are we to construe the fact that animal bodies, in so far as they respond to the world about them by interpreting it, are said to be inhabited by a mind?

This question of possibility ought not to be so handled that in place of possibility we have impossibility. Yet this, I suspect, is what is too frequently done when the question is considered. For instance, the possibility of interpreting sounds as waves of air can not lie in the initial existence of waves of air as subject-matter to be interpreted. Yet our books are full of attempts to exhibit the possibility of interpretation generally in terms of some specific interpretation which itself rests on that possibility. Nor can we successfully flee from the universe of discourse altogether and say that the possibility is outside of it or arises from the union of factors in themselves alien to it. Yet this too has been repeatedly tried, with only ultimate confusion as a consequence. Indeed just now I can think of only two answers which promise anything like conclusiveness. The first is that the possibility resides in the fact that mind as a determinate form of being inhabits animal bodies; and the second is that it resides in the fact of the universe of discourse itself defined as mind in the transcendental sense as we have defined it above.

Yet I must regard the first answer with suspicion. Its sole title to accuracy, so far as I can discover, resides in the fact that the universe of discourse is considered and inquired into only, so far as we know, by animal bodies inhabited by a mind. Because it is bodies of this sort that do the interpreting and write the books in the library, and because without them interpretations are apparently not made, nor books written, it is natural to conclude that the possibility resides in them. But this turns out to be a rather queer conclusion when once it is attentively examined. For my own animal body is one of the many objects of my study, and while I may discover that it is different from other objects in many ways, I do not discover that *as an object of study* it differs at all from them. It lies side by side with them in the total universe of discourse. It is, to be sure, what Bergson calls a privileged object since its movements and activities enlarge the range of my inquiries, but this fact is one of the discovered differences between it and other objects and does not put it in a different universe from them. I know that its health and integrity are prime factors in successful study. As in imagination I rob it successively of what are called its faculties, I find that the universe of discourse is for me progressively im-

poverished, but I do not find that it ever wholly disappears. I know that to the blind this universe is not luminous as it is to me and that to the deaf it is not sonorous, but I know that I myself neither see nor hear without adequate stimuli thereto. In other words such differences as are thus indicated appear to be differences due to the constitution of the universe as a whole and imply no more than the interdependence of its parts. They are not differences which can be intelligibly construed as ultimately disrupting its continuity. The difference between an animal body which can see and one which can not, is like the difference between one which can fly and one which can not. Such facts as these, together with the other that I can not even in fancy abolish the universe and leave anything to consider, make the conclusion look queer to me that the possibility of interpretation resides in the fact that a mind inhabits animal bodies.

In other words, I can make nothing intelligible out of the attempt to start with animal bodies fully equipped in their animality and then by adding a mind to them construe their thoughtful consideration of their world in terms of this addition only. The attempt has been made many times, but it has always been wrecked ultimately by our inability to exhibit what animal bodies are without any implication at all of mind. The attempt moves wholly within the total universe of discourse. It is never free from the distinction between thing and idea. Its enticement, as has already been said, lies wholly in the fact that without animal bodies the attempt itself is not made, but this fact must be offset by the recognition that there are other things, such as digesting food, which are not done without animal bodies, and that we are not wont to construe the possibility of doing them by adding to the body a factor in which the possibility resides. Significant, therefore, as the fact may be that without animal bodies inhabited by a mind inquiry into the universe of discourse does not occur and no interpretation of it is made, the attempt to construe the possibility of such interpretation in terms of the inhabiting mind—the mind studied in psychology—is here rejected. We turn to the other locus of possibility, namely the fact of mind in the transcendental sense.⁴

Those who deal with the natural history of mind in the psychological sense point out how that history keeps pace with the natural history of animal bodies, but they have never been able to discover

⁴It may be unnecessary to point out again how radically different the transcendental mind is from the psychological. The former can not be defined in terms of conscious processes or behavior. It is neither substance nor cause. I conceive it to be, as indicated in the article "Structure," one of the structural facts of existence generally.

a point at which mind may be said definitely to enter, at which it precisely takes up its habitation. The reason is, perhaps, not that they have not been acute enough to discover it, but rather that there is no such point to discover. A mind inhabiting a body may involve a procedure wholly unlike that of a tenant inhabiting a house. The latter leases his dwelling from an owner who has a prior right to possession. It is difficult, however, to think that a mind leases a body from nature and then moves in on some appointed day. It seems to dwell in its habitation, if we are to keep up the figure, more as the house's outlook dwells in it, something congenial and not alien. It would seem as if animal bodies become seeing, thinking, remembering, imaginative, and passionate bodies in much the same way as they become digesting, breathing, walking, and reproductive bodies. Just how they become this latter sort of bodies we do not very well know, but we do know that in actually being bodies of this sort they do no more than react to a world which is itself congenial to their reactions. They react, that is, to a world which makes the specific character of their reactions possible, but this possibility they do not create. Chemistry may be said to inhabit them and unravel itself in digestion, but the possibility of such a determinate, individualized, and organized form of chemistry clearly resides in the fact that the world in which they are is in a very genuine sense a chemical world. Should all animal bodies cease to be, digestion might also cease, but since the process of digesting did not create the chemistry which made it possible, we could not affirm that what we might call the chemical structure of the world also ceased to be. We might rather venture to say that the possibility of chemistry as a determinate form of being, inhabiting animal bodies, and unraveling itself in digestion resided in the fact that there is chemistry in the transcendental sense.

Our attitude toward the question of the possibility of interpretation, of thinking, of knowledge might advantageously be similar. For thinking, like digestion, is a reaction to a world congenial to it. Just as we do not affirm that by digestion the possibility of chemistry is created, so we ought not to affirm that by thinking the possibility of mind is created. We ought rather to affirm that the possibility of mind as a determinate form of being inhabiting animal bodies resides in the fact that there is mind in the transcendental sense. Such a view makes of the genesis of the mind studied in psychology something wholly natural—I know of no better word—as natural as digestion or breathing. With the death of all animal bodies thinking itself might cease, but that which made thinking possible would not cease. This latter would remain something char-

acteristic of the world in which animal bodies had come to be. That is, mind in the transcendental sense can have no genesis. The term when so used does not indicate an individual existence whose days may be numbered. Like mechanism, chemistry, and what in general we call the laws of nature, it indicates a type of structure or a system of connections, a logical structure it might be called or a system of logical connections. To this structure living beings conform in much the same way as they conform to other structural facts. As by conforming to the mechanical structure of things they maintain their equilibrium, so by conforming to the logical structure of things they think in propositions, they make distinctions and so finally come to discover themselves as distinct from their world, recognize themselves as the habitations of mind, and undertake the study of psychology.

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THE UNITY OF CONSCIOUSNESS

FROM the rise of modern philosophy to the present day, great interest has centered around the problem of the unity of consciousness. That consciousness *has* a certain unity, or appearance of unity, no one questions; the problem lies in giving an explanation of that unity which will contradict neither the findings of descriptive psychology nor the requirements of sound logic nor the facts brought to light by experimental investigation.

Several of the chapters of James's *Psychology*¹ seem to many writers to have dealt in an exhaustive way with the descriptive and logical sides of the discussion. There we find a trenchant criticism of the mind-stuff theory, so compelling to many minds as to banish for them into outer darkness any theory of psychic atomism. "As a feeling feels, so it is," if recognized as an axiom, argue; mightily against unconscious mental states or the fusion of conscious elements in a present feeling. Two assumptions made by James, however, have somewhat undermined his clearly spun theory. One of these is the assumption that a present feeling is aware of itself; the other, that a present feeling is in some unexplained way "appropriative" of the content of the immediately preceding one. The credit for exposing these weaknesses is due to Professor Strong.² On the one hand, he has shown that consciousness is not interfused with the content of the psychic state, so that to have a feeling is to be conscious of it, but that consciousness is something

¹ Cf. Chaps. VI, IX, X, XIII.

² Charles A. Strong, *The Origin of Consciousness*, London, 1918.

adventitious supervening upon the psychic state. On the other hand, he has described *how* a present feeling appropriates a past feeling by the continued presence of the latter as the object of cognition, the process involving the simultaneous existence of two psychic states.

The refutation of the phenomenalist position regarding consciousness has far-reaching consequences. It has led to the repudiation of that mysterious unity of the momentary conscious state which was supposed to be an ultimate characteristic. Dr. Strong has shown that there is no such unity, and thus the possibility of some kind of a temporary fusion of psychic states is again presented. James's logical demand, that sensations in order to fuse must have a medium of combination, is not refuted. The question, rather, is raised as to what is the nature of the medium. Bergson's theory of feelings as due to memorial summation, adopted by Strong,³ leaves this question open. Sherrington⁴ has adduced experimental evidence to prove that at the time of binocular perception unioocular visual images are developed to a point where their concomitant sensations are capable of being introspected under suitable conditions of experimentation. This would indicate that the integration was not an integration of sensory areas of the cerebrum. Further consideration of the manner of fusion seems inevitable, as we may not be satisfied by crude statements of fusion like those contained in the writing of Münsterberg.⁵

One preliminary revision of James's theory of consciousness that may be suggested at the outset is the rejection of the notion, expressed in the *Psychology*, that the child's first consciousness is "one great blooming, buzzing confusion."⁶ Now I have a perception of confused objects, not when I am entirely unfamiliar with them, but when I discriminate one from another only partially. The confusion is due to my inability to synthesize on a sudden various impressions which immediately suggest to me partial meanings. Thus, when I enter a room and am confronted with a blaze of color and a babel of sound, my perception of confusion is my

³ *Ibid.*, pp. 199-200.

⁴ Charles H. Sherrington, *The Integrative Action of the Nervous System*, New Haven, 1906, pp. 382-383. His important conclusion may well be quoted. (Italics not mine.) "Our experiments show, therefore, that during binocular regard of an objective image each unioocular mechanism develops independently a sensual image of considerable completeness. The singleness of the binocular perception results from union of these elaborated unioocular sensations. The singleness is therefore the product of a synthesis that works with already elaborated sensations contemporaneously proceeding."

⁵ Hugo Münsterberg, *Psychology, General and Applied*, New York and London, 1916, pp. 133-134.

⁶ *Op. cit.*, I, p. 488.

imperfect discrimination of colors and sounds which themselves are familiar to me. One recalls the instance of two Esquimaux who were brought from Arctic regions and led along Broadway, New York City. It is said that they were quite undisturbed by the bustle of traffic and the sight of unaccustomed buildings, and became attentive only when they caught sight of a furrier's window hung with skins. The "blooming, buzzing confusion," moreover, does not harmonize well with James's theory of the unity of the momentary conscious state. If the unity apparent in the conscious state is one of its most fundamental characteristics, we should hardly expect to find it born in confusion.

The motor aspect of the attention-process also would seem to bar the presence of conscious confusion where the objects cognized have not previously been reacted to. Of late, in the writings of authors so diverse in their general outlook as Strong, Bergson, Münsterberg, and the behaviorists, there is a strong tendency to emphasize the part played by the motor half of the reflex arc in giving an account of cognition. Presently I shall discuss the relative importance of stimulation and reaction for cognition. Here I may say that if the motor factor is an integral feature of cognition, the new-born baby could not feel a confusion of sensations because it would be able to feel only those to which it had previously reacted. The only alternative to this conclusion is the almost unthinkable supposition that at the birth of consciousness a multitude of sensory stimulations, normally giving rise to reflex actions, are inhibited at the center of the arc and shot up through the spinal cord to the cortex.

Lack of familiarity with objects capable of stimulating the sense end-organs and the absence of many potential reactions would seem to make the new-born consciousness a much simpler affair than James supposed. Coming closer to the problem of unity, we may ask as to the nature of the complex perception. Here the relation between consciousness and the object on the motor side is exceedingly important. As Dr. Strong says,⁷ to an instantaneous sensation we could not react. The unity of a sensation, therefore, must be accounted for on the basis of memorial summation, primary memory furnishing an object to which attention may be directed. Dr. Strong observes the close similarity between introspection and sense-perception. He says,⁸ "The motor attitude in introspection is therefore of the same general kind as that in sense-perception, and differs from it only in being to an object inside the body and not to one outside it." Dr. Strong argues power-

⁷ *Op. cit.*, p. 201.

⁸ *Ibid.*, pp. 201-202.

fully for the chief place of attention in giving unity to the field of consciousness.⁹ He concludes that the momentary psychic state has no *existential* unity; its apparent unity is due to a convenience of treatment, attention being the main factor.

With the results of Dr. Strong's study I am completely in accord. I would wish, however, to carry a little further the analysis of what constitutes the *apparent* unity of consciousness. I would wish also to show in some detail how James's arguments against the mind stuff theory are not valid if applied against introspective realism, and how, under the latter theory, a certain kind of fusion, or, better, an appearance of sensations *as if* fused, is not invalidated by James's arguments.

I

The latter points may be discussed first. James leaves us two alternatives. Either there must be a fusion of sensations, in which case a soul must be postulated as the medium of fusion, or there must be a fusion of brain-states to which a single psychic state corresponds *in toto*. Now, obviously, if Dr. Strong has shown that the unity of consciousness is only a specious unity, we shall not need to controvert James's logical objection to the mind-stuff theory. The existences known as sensations and images have no *vinculum*. But although James was skeptical in regard to a possible fusion of psychic states, he was believing when it came to the unity of the single perception. He found just reason logically to object to the statement that sensation *a* plus sensation *b* would yield a sensation ($a + b$). He made no difficulty, however, in recognizing that sensation ($a + b$) had unity. It is the merit of Dr. Strong's work to have shown us that sensation ($a + b$) has no existential unity, but is the result of a certain convenience of treatment of psychic states controlled by the limitations of the attention-process. The way is open, therefore, not to reestablishing the doctrine of a fusion of separate sensations in the old sense, but to a new conception of fusion based on certain features of the mechanism of attention. Under this new conception of fusion, the fusion will not be conceived as of sensations in their own right, but it will appear as a fusion in our attitude toward psychic states that are in themselves quite unalterably distinct. In shovelling coal into a furnace the separate coals in the shovel are not fused into one larger coal, but it is convenient for me to treat the coals *en masse* as one shovelful while I am performing the operation of shovelling. So in some way the separate tones of a chord do not come to

⁹ *Ibid.*, pp. 280-282.

consciousness as separate sensations there to fuse into one impression; rather does the mechanism of my psyche make it convenient for me to treat the stimulations of numerous fibers of the basilar membrane as one sound—the cerebral disturbances likely covering a goodly extent of brain-area.

The first protest against this new way of conceiving fusion will be doubtless a denial of its newness. On the one hand it will be claimed that here there is no fusion of sensations, that the single perception resulting from the excitation of the neural mechanism is as single as James would have desired. On the other hand it will be claimed that the fusion, if such it is to be called, takes place in the brain, that the mechanism of attention is substituted merely for the exploded concept of an arch-cell. Both of these objections are true as facts, but they are not objections to the theory. They do not invalidate the usefulness of my statement. The utility of my point of view appears when it is observed on the negative side (1) that many psychic states may be present in an "unfused" form, and (2) that the integration of brain-states is a process not entirely correlated with psychic activity, but occurs only as a momentary expedient.

1. Many psychic states may be present in an "unfused" form. If we use the term "sensation" always to mean one of the elements of a conscious state, we shall never speak of sensations as present but unperceived. Careless terminology has resulted in the use of an expression "unconscious sensation"—a self-contradiction taken advantage of by James in his criticism of the mind-stuff theory.¹⁰ We are on safer ground when we refuse to define "sensation" as a *conscious* element of experience, or when, better, we substitute the term "psychic state" and reserve "sensation" for the meaning "given psychic state." In the latter case we recognize that consciousness is adventitious to the psychic state, and that the existence of a psychic state is not due to its conscious quality when attended to. Attention will be the main factor in bringing an unconscious psychic state to consciousness.

It is the contention of this paper that attention thus modifies psychic states.¹¹ First the process may be observed in the case of single sensations. We may not attend to an instantaneous sensation. Attention to the single sensation is contingent on the presence of a series of instantaneous states, each after the first cognizing its predecessors. A conscious moment, therefore, demands the presence of at least *two* psychic states, of neither of which are we separately conscious. Modification of psychic states by atten-

¹⁰ *Op. cit.*, I, pp. 172-175.

¹¹ *Cf. Strong, op. cit.*, p. 137.

tion again appears in the case of perception, where numerous sense-stimuli are involved. If *a* and *b* stand for parts of a chair, and if I perceive the whole chair, not discriminating the parts, my perception of (*a* + *b*) is very different from my perceptions of *a* and *b* separately. Instead, however, of supposing that a soul unifies sensations of *a* and *b*, or that the unity is accomplished by an integration of brain-states on the sensory side, we shall more rightly ascribe the "togetherness" of the psychic states to the motor factors of attention, and deny that the psychic states or their neural concomitants, *as such*, are fused at all. We shall, of course, also deny that there is any real unity given to perception by the addition to psychic states of the conscious quality. We shall rather aver that as a feeling feels, so it is *not*, agreeing with Dr. Strong that the *esse* of a feeling is *sentire*, not *sentiri*.

At the risk of repetition, I may restate the previous argument in other words. In cognition, although an instantaneous sensation might be aware of an essence, there could be no meaning attached to the essence if primary memory did not preserve the essences given in preceding instants. We have no perception of an object that is flashed before our eyes too quickly for a trace of its successive stages to be recorded in primary memory. It is also a commonplace that in perception memory-images are an essential feature. The fact that some kind of memory is concerned in all sensation and perception to which meaning is attached—in other words, in all attentive consciousness—leads us to inquire what binds together the elements of sensation and perception. We answer that it is attention. Attention gives the sensation or perception a certain necessary duration. We are then confronted with the question: are we to conceive of the sensation or perception as a single psychic state (no matter how complex it may seem) conscious of itself, or are we to consider the perception to be composed of simpler elements, psychic states, of which we are sometimes aware, and which are sometimes aware of other psychic states, but which are never aware of themselves?¹² As a mere supposition, the latter solution seems more probable. The only difficulty to be overcome is that of finding the explanation for the fact that *many* psychic states must then be conceived as appearing as *one*. Once we have solved this difficulty, however, we may conclude that the conscious quality is something adventitious to their existence, and that therefore we have no warrant in saying that only those psychic states exist of which we are conscious. In the conscious moment, certain psychic states have a specious unity, while actually remaining as unfused and distinct as you please.

¹² Cf. Strong, *op. cit.*, p. 207.

But let us not be extravagant by hypothetically multiplying the number of unconscious psychic states. No warrant for an atomistic conception of psychic existence may be adduced from this inquiry. The problem of the degree and nature of neural activity necessary to the production of a psychic state (*i.e.*, the extent to which neural integration is necessary) must be left for experimental psychology to determine. Sherrington has made a beginning, by showing that the unioocular visual images are psychically distinct.

2. The integration of brain-states is a process not entirely correlated with psychic activity, but occurs only as a momentary expedient. Although it is certain from experimental evidence that many areas of the brain are involved in a single perception, it by no means follows that all of the neural activities of the brain at any one moment are correlated with the conscious state. We may naturally suppose correlation to subsist between the clearest psychological elements (those at the focus of attention) and the most predominant neural activities. If this is true, the neural concomitants of marginal consciousness will be less predominant. Now if complete integration occurs, we must suppose that the neural concomitants of all psychic elements other than those at the focus of attention are correlated with marginal consciousness. It is much more plausible that marginal consciousness is a mean between conscious and unconscious psychic states—a theory rendered probable if awareness is adventitious to psychic states. As Dr. Strong says,¹³ the existence of unconscious mental states is a question of fact, not of principle. Attention, therefore, would seem to play like a searchlight over a wide range of mental states, now lighting a spot barely seen at the previous moment, now bringing into conscious view spots just previously shrouded in darkness.

II

If the foregoing analysis is grounded in fact, we are driven to seek an answer to a question that irresistibly presents itself. Is there some principle by which the specious fusion of psychic states under the conditions of the mechanism of attention takes place? The term "specious fusion" has been used to indicate a process the nature of which yet has to be described. On the one hand, we have the phenomenal unity of the present moment, so much emphasized by James. On the other hand, we have the coexistence of an undetermined number of psychic states. In some manner attention is responsible for the apparent unity of the perception. But how is the process to be conceived?

¹³ *Ibid.*, p. 207.

If awareness is a function of psychic states due to an integration of motor concomitants, it is evident that the presence and character of consciousness will be determined by the presence and limitations of the attention-process. Every perception involves a "set" of the organism to some reaction. The selection and single treatment of psychic states arising from a variety of stimuli are due to the fact that we can not do or intend two actions at the same time. The details of the process may be subsumed under the principles of contiguity and identity.¹⁴

1. In a transverse view a perception may be analyzed into a variety of sensations and images. Our view of the coexistence of psychic states, however, need not lead us to affirm the Lockian principles of the compounding of sensations, so attacked by James. The "ideas" are not to be conceived as fusing among themselves in some incomprehensible way, but as being capable of treatment as a whole so far as attention is concerned. Later, by turning the attention to the several elements of a perception, thus obtaining a series of *new* perceptions, the parts may be envisaged, but this is a matter of discrimination rather than dismemberment. When I grasp a tumbler with both hands, the tactual perception does not result from the fusion of psychic states due to the tactual sensations derived from each hand, but from a unified reaction due to the whole action of grasping an object.

2. The unification of many elements in the perception leads to consideration of the specious fusion of the psychic elements involved in the perception of a single element. Out of this consideration the general principle of specious fusion will emerge. How are we to explain the single treatment, in consciousness, of the succession of psychic states that occurs in the memorial summation in a feeling? In this way: *attention treats as one psychic elements that are identical or nearly identical*. Here we have an explanation of the phenomenal unity of the single sensation. We could not *react* to a psychic state that is momentary. There is a certain slowness of movement of our bodies in relation to their environment. We are not able to respond to stimulations by single molecules, whether they be arranged in space simultaneously or in time serially. Indeed, we are also unable to be stimulated by such minute structures. The sensory side of the reflex arc thus also has bearing on the problem of attention. But the significant fact, the fact that results in the apparent unity of consciousness in contradistinction to the plurality of psychic states, is that *our reactions are slower than the working of our sensory mechanism*. The slowness of reaction *compels* a certain unification of psychic states.

¹⁴ Cf. George Santayana, *The Life of Reason*, I, pp. 165-170.

The non-discrimination of identical or nearly identical psychic states accounts for our perception of objects as static bodies. It makes it possible for us to live in a stable world rather than in a Heraclitan flux. It also accounts for the facts adduced by Sherrington in reference to binocular perception. Where the uniocular visual images are *nearly* identical, they are perceived as one (for we may react to them as to one object), although under suitable conditions of experimentation they may be revealed as composed of simpler psychic states.

III

We may now give a concise statement of our theory: The conscious quality is attached to certain psychic states concerned in the process of attention. Reflex without conscious activity may become complicated up to a limited extent until the conditions of reaction do not keep pace with the mechanism of sensory stimulation. The unequal balancing of the forces of stimulation and reaction calls for a selection from among psychic states of some few which may be correlated with a unified reaction. The activity of these cells (selected in accordance with the familiar laws of the determination of attention) is heightened, the difference being manifest by the addition of the conscious quality. Consciousness is thus seen, from the standpoint of its origin, to be in the first instance a psychic concomitant of selected neural activities, and the whole process of selection appears as a device to supplement reflex action where a complete integration is impossible owing to the complexity of the sensory mechanism. In accord with the theory is the fact that actions at first performed only consciously may become later reflex actions. Here consciousness (or rather the whole process of attention with which consciousness is associated as one element) has served the purpose of integration, and the action may be repeated under suitable conditions of stimulation without conscious intervention.

Perhaps it may be superfluous to remark that the conscious quality of psychic states is amenable to the same law of specious fusion that was described in reference to other qualities. Its application is somewhat different, however. Whereas one psychic state in memorial summation is able to cognize the content of preceding psychic states, the conscious quality of a psychic state, being an adventitious characteristic and no part of the psychic state as such, but rather a difference of function, is unable to cognize the conscious quality of another psychic state. Thus, although we make the distinction between conscious and unconscious psychic states, we may never directly compare the two or directly cog-

nize consciousness. When, however, attention holds in its focus several psychic states, the identity of activity in each serves the negative purpose of keeping away any sense of discreteness. That is, because the conscious quality is the same to whatever psychic state it may be attached, it does not interfere with the specious fusion of contents.

Many important considerations in the light of the theory which we have presented, such as its bearing on the problem of truth and error, and on the compatibility of an instrumental view of the origin of cognition with a realistic outlook, would have to be the subjects of special study. I may point out, however, that the theory well fits into the framework of the theory of psycho-physical monism (introspective realism). If psychic states are the "things-in-themselves" or the "inner substance" of their neural concomitants, the disparity in the correlation of motor factors of attention and the conscious quality of psychic states ceases to be a problem.

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Note.—For the sake of clearness, I have left to an appended note the discussion of a point which, although important, is not vital to the argument. In Bergson's conception of memorial summation, matter and consciousness are conceived each to possess its own peculiar rhythm. The rhythm of consciousness, slower than the rhythm of matter, allows the former to sum up vast periods of matter's rhythm. This thesis leads to the assumption that perception and matter differ chiefly in their respective tensions. I do not subscribe to this doctrine, nor is it essential in any way to my argument. Dr. Strong, in accepting it, seems to interpret it differently from its proponent's interpretation. For he assumes the reality of homogeneous time, which Bergson denies. Dr. Strong says, "We must remember, secondly, that the time during which a brief feeling exists is spun out infinitely fine—that it does not come all at once, at a single clap of the hand, as it were, but comes in an infinite succession of instants. To each of these instants of feeling the proposition applies that without memory—primary memory, that is, memory of a fact immediately after its occurrence—it would, on its cessation, completely de cease. The apparent block which a feeling offers to introspection is thus due to the summation of an infinity of instantaneous parts by primary memory." The "infinite succession of instants" to which Dr. Strong refers, and during which he says a feeling exists, is obviously thought by him to be one with the succession of instants during which concomitant happenings in the physical world take place—i.e., homogeneous time. "The apparent block which a feeling offers to introspection" is thus conceived as due to a summation of the infinite parts of each appreciable moment of a feeling by primary memory. I find this statement hardly within the bounds of possibility. Logically, no doubt, we can so divide a momentary feeling, but psychologically it is most doubtful whether such a process is implicit. As James says, there is no necessary numerical correlation between cause and effect. In fact, experimental psychology seems to have

demonstrated conclusively that integration of neural vibrations is often necessary to the production of any feeling at all. Howbeit, there is a certain necessary duration in the case of every appreciable sensation. We need not try to go back of that. Given this momentary feeling, primary memory will be requisite if the next appreciable instant is to recognize its predecessor. The summation, under the theory, will therefore occur in the sensation's own rhythm. (Cf. Strong, *op. cit.*, p. 200; Bergson, *Matter and Memory*, pp. 267-282.)

REVIEWS AND ABSTRACTS OF LITERATURE

A Critical History of Greek Philosophy. W. T. STACE. Glasgow: University Press. London: Macmillan and Co. 1920. Pp. xiv + 386.

Clarity is often a virtue of intolerance. A man with convictions knows precisely what he believes and is able to measure the worth of ideas as any want of conformity unto or transgression of *his* standards of belief. Mr. Stace is a man with convictions. He knows exactly what he means by philosophy and writes a "critical" history of Greek thought in the light (or darkness) of this meaning. The style and manner of presentation are extraordinarily simple and clear. There are more monosyllables to the paragraph than in any philosophical treatise with which I am familiar. Lucidity is the chief merit of the book. As a contribution to historical scholarship it is altogether unimportant. The author takes the stock facts and traditional material found in any ordinary text-book and presents them in a manner remarkable for its simplicity, clarity and easy intelligibility.

But should a man with "convictions" write a history of philosophy at all? *A priori* this is doubtful. *A posteriori* one with Mr. Stace's convictions should decidedly *not* write the history of anything. Philosophy, he says, is an attempt "to rise from sensuous to non-sensuous thought." It is "the gradual and steady rise to the supreme heights of idealism."¹ The history of philosophy "presents a definite line of evolution." It is the "onward march of thought to a determined goal." "The truth gradually unfolds itself in time." These conceptions are not generalizations derived from an examination of the subject-matter of Greek thought, they are initial definitions in terms of which the history of Greek thought is to be described and interpreted. That the *true* philosophy is idealism and that philosophy is an evolution from sensuous to non-sensuous thinking are the beliefs in terms of which the criticism proceeds.

¹ *A Critical History of Greek Philosophy*, XII.

The beginnings of Greek philosophy involve no problems for the author. "The first Greek attempts at philosophizing were so much the beginnings of a beginner, were so very crude and unformed, that it is mere perversity to suppose that they could not make these simple efforts for themselves."² Ionic philosophy is pure materialism. By water Thales meant the "material" cause or stuff of things. The "Boundless" of Anaximander was "formless and characterless matter." Thus, as we should expect from our definition, philosophy begins with the purely sensuous. An advance stage of evolution is found in the semi-sensuous thought of the Pythagoreans. Their doctrine of numbers involves the abstract and non-sensuous, but in making numbers the substance of material things, there is a lapse into materialism. Nevertheless Pythagoreanism is a "stepping-stone between the Ionic and the Eleatic philosophy." Parmenides makes a great advance. "The essential meaning of Parmenides is his idealism." For him truth lies only in reason. "This is exceedingly important, because this, *that truth lies in reason and not in the world of sense*, is the fundamental position of all idealism."³ Eleaticism was important, we are told, because it was the first monism. "Plato's theory is that the Absolute consists of concepts. . . . Now this proposition, that the Absolute is reason, is the fundamental thesis of all idealism. Plato, therefore, is the founder and initiator of all idealism. . . . It is this that gives him his great place in the history of philosophy. . . . This is his crowning merit."⁴ But philosophy must not only seek the ultimate, it must make the ultimate intelligible. Now Plato's ideas, so the criticism proceeds, can explain neither themselves nor the world. Evidently we must await further evolution. This we get in Aristotle. "Aristotle registers, therefore, an enormous advance upon Plato. His system is the perfected and completed Greek idealism."⁵ After Aristotle "the rest of the story is soon told for it is the story of decay." In the mystical intuition of the Neo-Platonists ancient philosophy meets its death. "It was natural that philosophy should end here. For philosophy is founded upon reason. . . . Therefore it can not admit anything higher than reason. . . . In Neo-Platonism, therefore, ancient philosophy commits suicide. This is the end."⁶

In the opinion of the present reviewer this method of writing the history of philosophy is altogether wrong. It is not a *history* of

² *Ibid.*, p. 17.

³ *Ibid.*, p. 45.

⁴ *Ibid.*, p. 235.

⁵ *Ibid.*, p. 332.

⁶ *Ibid.*, p. 377.

philosophy at all; it is a study in dialectic. The author is not dealing with the subject-matter of Greek philosophy; he is selecting material to illustrate a thesis which exists in his own mind. I have a strong feeling that most of what goes by the name of "evolution of thought" is pure dialectic. The order and connection of ideas in the mind of an evolutionary historian is decidedly *not* the same as the order and connection of the facts which constitute the subject-matter of the history of philosophy. For example, to say that Pythagoreanism is the stepping-stone between the Ionic and the Eleatic philosophy is to give to the development of philosophy a logical continuity which it does not in fact possess. Furthermore, to discover the "importance" of an idea to consist in its likeness to some other idea of preferred worth rather than in its inherent content involves a fallacy of abstraction. For instance, we are told by Mr. Stace that Eleaticism is "important" because it was the first monism. It was "the crowning merit" of Plato to have been the founder of idealism. Rather insecure foundations on which to rest one's reputation!

As opposed to Mr. Stace I do not think that Greek philosophy is an evolution. To be sure there is a certain amount of continuity of thought, but *how much* continuity is a question of fact and not of theory. Nor does more continuity establish evolution. Neither do I believe that Greek philosophy is a development from sensuous to non-sensuous thinking. Surely the entire development of Greek scientific thinking from Thales through Democritus is from animism to positivism.

The book is wholly unbalanced. This follows inevitably from the *a priori* method. The author devoted 318 pages to philosophy from Thales through Aristotle. Only 38 pages are given to the entire Post-Aristotelian period including Neo-Platonism. Why? Because it is the "story of decay." And why *decay*? Because the Stoics and Epicureans and Skeptics and Neo-Platonists have little to contribute to a preconceived definition of philosophy. More space is given to showing that Parmenides is an idealist than to the whole atomistic philosophy of Leucippus and Democritus.

It should be remembered that my main objections to this book are to the author's initial conception of the meaning of philosophy and to his *a priori* and evolutionary method of interpretation. The main facts are told in a manner surpassing in lucidity, simplicity and literary charm any history of philosophy with which I am familiar. It seems a pity that the book is *critical* rather than descriptive, as, I dare say, a history of philosophy should be.

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A Study in Realism. JOHN LAIRD. Cambridge: The University Press. 1920. Pp. xii + 228.

For Professor Laird the major realisms are "Arnauld's attack on Malebranche . . . Reid's and . . . the contemporary movement." There is, in his opinion, little affinity between the modern and the medieval forms of the theory. Realism proper, as Professor Laird understands it, is the doctrine "that the object of true knowledge is in a certain sense independent of our knowing of it" (p. 14). It "does not imply that the mind can not construct or that its constructions can not be known" (p. 186). For it, knowledge "is not communion with the thing nor contact with it. It is just knowledge; and we may inspect the past as well as the present" (p. 54). "Knowledge . . . is always the discovery of something with which the mind is confronted. The mind is therefore distinct from its object, and an object is not known the better because of its resemblance to mind" (p. 214).

Upon all types of cognizable things Professor Laird tests, then, this theory of realism. He passes in review objects of perception, of remembrance, of expectation, of dream and fancy, of judgment, of valuation, endeavoring to show that an anti-realistic interpretation is inadequate alike for the sensible world, for the realm of laws and values, and for things merely imagined. In the course of the survey he takes issue not only with the traditional enemies of realism but also with members of his own persuasion. Meinong's theory of "objectives" is attacked (p. 87 f.) as is also the doctrine that mind is reducible to its objects—the "inverted Berkeleyanism" which is indiscriminately attributed to all the American new realists (p. 162 f.).

One may gain from a perusal of the book, slim as it is, a remarkably clear notion of what realism stands for, and incidentally what a good many other kinds of philosophy stand for. The author possesses a gift for hitting off the essence of a doctrine in a few words and with fine spirit. For, philosophic as he is, he is also something of the creative artist, with the result that occasionally his characterizations are exaggerated in their extreme simplification. "The pragmatists," he says, for example, (p. 114) "can not go all the way with the absolutists, but they have gone to school with them, and most of them, by substituting the life-process, or the *Zeitgeist*, or the intelligence of a great people, for the Absolute contrive to retain some of the momentum of the Platonic Ideas and yet to dress the world in workmen's overalls, or to credit it with the overwhelming vitality of a gendering bull."

There is no space even to list Professor Laird's main conten-

tions. Suffice it to say that the realism here presented is of a thorough-going, vigorous variety. "He who trusts himself to logic must trust himself altogether. He can not seriously, like the instrumentalists or Mr. Bradley, step into the stream with one foot and keep the other on the bank; for the bank is not firm enough and the stream too masterful. . . . All thinking must assume what logic assumes, and realism, at bottom, is just the assertion of this principle."

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Psychology and Folk-Lore. R. R. MARETT. New York: The Macmillan Company. 1920. Pp. ix + 275.

The author of this book is the successor of Tylor in anthropological work at Oxford. He has previously published a brilliant little volume, *Anthropology*, in the "Home University Library" and a collection of essays called *The Threshold of Religion*; has had considerable archæological experience with palæolithic man on the island of Jersey; and as a teacher has done much to build up a school of anthropology in his university.

The book consists of eleven papers, some of them originally presidential addresses before the Folk-Lore Society and Section H of the British Association for the Advancement of Science. As its title, borrowed from that of the first paper, does not adequately describe its contents, a brief notice of all the papers may be desirable. Five are chiefly of methodological interest: "Psychology and Folk-Lore," "The Psychology of Culture-Contact," "The Transvaluation of Culture," "Primitive Values," and "Origin and Validity in Religion." Two deal quite concretely with "War and Savagery" and "The Primitive Medicine-Man." Two more—"The Interpretation of Survivals" and "Magic or Religion"—present sympathetic reviews of Sir James Frazer's *Folk-Lore in the Old Testament* and *The Golden Bough*, respectively. One on "Progress in Prehistoric Times" is a masterly summary of our present knowledge concerning Stone Age man, and one on "Anthropology and University Education" is a plea for greater recognition of this subject in British seats of learning.

Dr. Marett, as his preface indicates, feels somewhat doubtful whether these addresses, essays, and reviews are worth republishing; but his readers will not have any such feeling. They will be delighted to pick up a book which, without affectation of learning, brings the combined results of philosophy, psychology, anthropology, and sociology to the elucidation of the problems of man. Dr. Marett does not give to us here, or elsewhere, an anthropological

“system”; but rather keen criticism of prevalent views and refreshingly original observations. Very little which will not stand close analysis filters through his pen to the page. All in all, one is inclined to recommend highly these bright, witty, and thoughtful papers.

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JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. July-September, 1920. *L'orientation du rationalisme. Représentation, concept, jugement* (pp. 261-343): L. BRUNSCHVIEG. — The “future of rationalism is not bound up with the success of a constructive synthesis after the Hegelian method,” such as is found in the system of Hamelin. Rationalism, in a broader and more legitimate sense, as represented by Plato and Spinoza, is simply the effort of the human spirit to make the world intelligible, and as such it must include certain of the methods associated with contemporary positivism and even with intuitionism. The argument for this is found in a historical study of rationalism, positivism, and mysticism in some of their nineteenth century developments. *La tradition philosophique* (pp. 345-353): A. DARLU. — Philosophy may be defended against the charge of being non-progressive, for there is a philosophic tradition in which truth accumulates. Although certain problems persist, the later thinkers attack them from new levels, profiting by the attempts of their predecessors. *Considérations sur la logique et les ensembles* (pp. 355-369): J. RICHARD. — In showing that the first principles of arithmetic do not contradict each other, the consistency of the first principles of logic must also be demonstrated, for these two sciences are inseparable. This appears in examining the theory of classes, the notion of the transfinite, and the logical paradoxes raised by these. *Discussions. Qu'est-ce qu'un député? (Autre réponse)* (pp. 371-377): F. BUISSON. — No new theory of parliamentary government, such as M. Pécaut has suggested, is needed to make the status of the deputy unambiguous. He is an agent for the electorate in the business of government, and as such is expected to deliberate as they attend to governing themselves, not simply to register opinions they have actually expressed on particular occasions. What is needed to improve the functioning of the deputy is a practical reform of electoral procedure, such as the proportional representation law, which will make him the spokesman for a group holding a certain opinion, rather than the spokesman of a majority within a small geographical locality, such as he must try to be under the system of *scrutin d'arrondissement*.

Questions Pratiques. Entre citoyens et producteurs (pp. 379-393): C. BOUGLÉ.—The syndicalist proposal of basing representation on production is unsound in its present form for two reasons. In the first place the "work of modern production is so complex that it is especially difficult to define 'the producer' in simple terms. If 'the citizen' is an abstraction, 'the producer' is a proteus." Secondly, "the producer" is likely to forget some of the interests of the "citizen," since the representatives of the different vocations are to govern not in the interest of their particular vocations but in the "general interest," which has a reference to other aspects of life besides that of production. *Supplément. Livres Nouveaux.* P. Fauconnet, *La Responsabilité.* J. Payet, *Le travail intellectuel et la volonté.* Eugène d'Eichthal, *Du rôle de la Mémoire dans nos Conceptions, métaphysiques, esthétiques, passionnelles, actives.* Henri Berr, *Le germanisme contre l'esprit français.* J. Segond, *Intuition et Amitié.* E. Abramowski, *Le Subconscient normal, Nouvelles recherches expérimentales.* L. Blaringhem, *Les problèmes de L'Hérédité expérimentale.* Léon Lecornu *La mécanique, les idées et les faits.* Hélène Metzger, *La genèse de la science des cristaux.* J. Souilhé, *La notion platonicienne d'intermédiaire dans la philosophie des dialogues;* also, *Étude sur le terme "dunamis" dans les dialogues de Platon.* S. de Backer, *Disputationes metaphysicae de ente communi.* John Mills, *The Realities of Modern Science. An introduction for the general reader.* Francesco Orestano, *Leonardo da Vinci.* Otto Lipmann, *Psychologie für Lehrer.* Jules Sageret, *Philosophie de la guerre et de la paix.*

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NOTES AND NEWS

The Research Information Service of the National Research Council has recently compiled information about funds for scientific research. From this compilation it appears that there are hundreds of special funds, trusts, or foundations for the encouragement or support of research in the mathematical, physical and biological sciences, and their applications in engineering, medicine, agriculture and other useful arts. The income from these funds, which amounts annually to at least fifty million dollars, is used principally for prizes, medals, research scholarships and fellowships, grants and sustaining appropriations or endowments. So numerous have been the requests to the Research Council for information about sources of research funds, availability of support for specific projects and mode of administration of particular trusts or foundations, that the Research Information Service has created a special file which it is proposed to keep up to date in order to answer the questions of those interested in such funds. Furthermore, in order to give wider publicity to the immediately available information about research funds, the Council has issued a bulletin under the title *Funds available in 1920 in the United States of America for the encouragement of scientific research*.

Many scientists lack the library facilities which their work demands. They are compelled either to journey to distant libraries or to try to borrow books by mail. Often it is difficult for them to locate something that is badly needed, and again it may be impossible to borrow it. The Research Information Service of the National Research Council is prepared to assist investigators by locating scientific publications which are not generally or readily accessible. It will also, as is desired, have manuscripts, printed matter or illustrations copied by photostat or typewriter. The cost of copying varies from ten to twenty-five cents per page. No charge is made for this service unless an advance estimate of cost has been submitted and approved by correspondent. Inquiries should be addressed to the National Research Council, Information Service, 1701 Massachusetts Avenue, Washington, D. C.

M. Xavier Léon announces the resumption of the *Bulletin de la Société française de philosophie*, which was obliged to suspend publication owing to circumstances connected with the war. Five numbers will appear during the year 1921. Four of these will contain reports of four meetings of the French philosophical association; the fifth will be devoted to the philosophical vocabulary edited by M. Lalande.

THE JOURNAL OF PHILOSOPHY

THE COGNITIVE INTEREST AND ITS REFINEMENTS

IN an earlier paper we have considered belief and purpose as variants of a basic act of "supposition."¹ In the present paper supposition assumes the rôle of hypothesis, or of an act dictated by a specifically cognitive interest.

Although we shall be primarily interested in autonomous thinking, in which thinking has itself become a purpose requiring its own specialized tools, it is important to recognize that thinking is not necessarily autonomous. It can be an adjunct of any purpose, when it assumes the form of the consideration of alternatives. It is a form of trial and error in which acts are accepted and rejected in accordance with their meaning rather than their effects.² There are, in other words, two types of tentative activity. In one type the auxiliary activities are tried out until one occurs which completes the response; in the second or reflective type the auxiliary activities are only *considered*, until one is adopted. In this second type suppositions occur; that is, the activity is sufficiently aroused to bring its sequel into play, and it is adopted or rejected according to the congruence of this sequel with the checked phase of the determining tendency. In other words only acts which promise relief are overtly performed. Mistakes may be made, and in this case other auxiliary acts must be tried out, so that the organism is learning for the future at the same time that it is guided by the lessons of the past. But the distinguishing feature of this second type of tentative activity lies in the fact that while many acts may be called, few are chosen; or, while many are tried, few are tried out.

Let us now examine the forms assumed by thought when it sets up in business on its own account. Possibly it is always carrying on at least a small independent business. It is not important for our present purposes to determine whether there is or is not an instinct of thought.³ In any case there is a very early and a very gen-

¹ "The Independent Variability of Purpose and Belief," this JOURNAL, XVIII, 169-80.

² Cf. E. C. Tolman, "Instinct and Purpose," *Psychol. Rev.*, 1920, XXVII, 230.

³ Cf. G. Wallas, *The Great Society*, 1914, Ch. 3.

eral mode of human behavior which we call curiosity. This appears to consist in a determining tendency which moves the organism to acquire anticipatory reactions. It is aroused whenever one encounters boundaries or blank-walls beyond which one can not look. The unopened envelope creates a situation in which one's adaptation does not advance beyond what is immediately presented. In so far as one is curious one would like to anticipate the reactions appropriate to the contents of the letter, that is to be in readiness for developments of stimuli in that direction. This impulse is different from the interest in observing, in which one derives satisfaction from having one's anticipatory expectations successively aroused by an unfolding series of stimuli. Curiosity is satisfied when in the absence of the stimulus one has a response ready; so far as curiosity is concerned one is then quite indifferent to the presentation of the stimulus. Curiosity, in other words, is a tendency to acquire beliefs, or to possess reserves of readiness in all directions; it is to keep in preparation, at least one step ahead of action.

This impulse, be it noted, is satisfied by the possession of beliefs whether true or not. In respect of remote and unrealized contingencies false beliefs may permanently satisfy curiosity. In so far, however, as beliefs mature, in so far as their index is presented, their stability is a function of their truth. Here belief is in part at least founded on experience, so that whenever a belief results in a misplaced response there is begotten at the same time a new and antagonistic belief for the future. Surprise, in other words, tends to prevent its own recurrence. Within certain limits, therefore, if one is to have beliefs at all they must fit the events to which they refer. From this there develops the practise of methodical verification, which is trying out a supposition to the point of determining whether the complementary object is present as indicated, but without carrying the response so far as to alter either the objective situation or one's modes of dealing with it. There is in this the same immunity from consequences which has been remarked in the case of the consideration of alternatives in reflective action. There is a partial or playful exercise of supposition,⁴ resulting in this ease in the acquirement of tested and stable beliefs.

All forms of purposive activity depend on beliefs for their issue, and in this case it is not merely belief that is required, but true belief. Verified belief is in demand not only because it is stable, but

⁴ The whole topic of partial and "unreal" response as characteristic of play, esthetic "detachment," and thought, is one of great importance and wide bearings. Meinong has done much to develop it. For a behavioristic interpretation, cf. L. L. Thurstone: "The Anticipatory Aspect of Consciousness," this JOURNAL, 1919, XVI, 567.

because it is useful. If one's desire is to destroy one's enemy, and believing that he will pass a dark corner at a certain hour of the night, one schedules one's attack accordingly, the belief is useless unless it is true; unless, that is, the complementary stimulus, one's enemy, presents itself when the response, one's blow, is ripe for delivery. Since curiosity is only one of many determining tendencies, and since all determining tendencies require verified beliefs, it is evident that the demand for verified beliefs on the score of their utility far exceeds the demand on the score of their stability. In other words truth is *needed* more than it is *loved*. In either case it is needed or loved for what it is; and truth would be truth if it were neither needed nor loved.

We must now consider certain further refinements which grow out of the demand for verified beliefs. It was asserted above that where the indices of beliefs fall within the range of presented objects a belief's stability is a function of its fitness to events. We have now to observe that this is not invariably the case. There are beliefs which are frequently applied, but without being selectively tested, because the presence or absence of specific conditions does not control the response. Compare, for example, the two following cases. Believing that there is food in the pantry, I go as instructed and either find or do not find something that I can *eat*. The possibility or impossibility of the response is decisive as regards the stability of this belief. But suppose I believe that there is an enemy in the next room. In this case *whatever I find* may serve to excite my suspicion or hate. My belief regarding the attitude of another may thus remain stable independently of my experience. It can find a stimulus in any situation for which my belief may prepare it. "Enemy" meaning whatever I can suspect and hate, there are enemies everywhere. Or conversely, if God means what I can love, then God is everywhere. Similarly to an excessively timid person all things are fearful. Such beliefs are, strictly speaking, true. Their defect lies not in their incorrectness as they stand, but in their promiscuousness. They can satisfy neither curiosity nor the non-intellectual purposes, both of which demand close and specific adaptations to a great variety of particular situations.

It may be objected that if I fear *X* I judge that *X* is disposed to do me injury. But this is not correct. I may fear miscellaneous things, or any new stimulus, without my fear's having any peculiar selective relation to the particular conditions confronting me. The point is that my fear *would* be more useful if it *were* based on such a principle, since it would then be more discriminating. If it were so conditioned, then in the long run it would be reduced to situations of actually imminent injury. Sentimental truths of the indis-

criminate sort, instead of being conditioned by specific beliefs, tend to breed specific beliefs. In case those beliefs refer to remote contingencies, their truth or error remaining indefinitely doubtful, they may be innocuous. But when beliefs so inspired are directed to the immediate environment they are peculiarly likely to be in error because they have originated independently of experience. One expects, for example, what may be expected of a hated person, rather than what has been experienced of this person.

In the technique of knowledge, therefore, it is important that beliefs should so far as possible assume the form of responses uniquely correlated with determinate environmental conditions, as appears to be the case with such responses as sensations, physical adjustments or unambiguous words. Just what sensation is no man can in the present state of human knowledge confidently say. But it does appear to be clear that specific sensations are peculiarly dependent on correlated stimuli. In the emotional sense I can "see red" under any conditions, but in the visual sense the conditions are narrowly prescribed. In physical science it is customary to test hypotheses by the presence of "properties," or by recording mechanisms which respond unambiguously. Words serve the same purpose only in so far as precisely and truthfully used. But the development of language and of the canons of precision and truthfulness testifies to the same demand for uniquely controlled responses.

Words play so important a rôle in the specialization of the cognitive interest, or in the functioning of human reason that Professor Watson may not be far from the truth in maintaining that "the fundamental difference between man and animal . . . lies in the fact that the human being can form habits in the throat."⁵ The primary function of language seems to be the establishment within a group, and eventually within the race as a whole, of uniquely determined responses to objects. For man language is both a prerogative and a need. The overt behavior of simpler organisms is less equivocal than that of man and constitutes in itself a sort of language. But the overt responses of men to any given stimulus are, owing to their wide range of ulterior references, almost limitlessly variable. There is scarcely any reaction of which the human organism is capable that a light-stimulus, for example, may not arouse. This variety of response does not, as we have seen, stand in the way of cognition and of truth. For the truth of a supposition does not depend on the nature of the particular response which it applies, but only on the opportuneness of the application. You may love

⁵ J. B. Watson, *Behavior*, 1914, 299.

this light while I fear it, but truth depends only on our being ready, you with your love and I with my fear, when the light is there to serve as its object.

But the human variety of response would prevent developed social relations if it were not for the conventions of language. All human association depends on the concerted response of several organisms to the same object. In order that this concerted response may be organized and led by the influence of one individual organism on others, it is necessary that there should be common objects recognized as such. This is possible only when the response of one organism is the sign to a second organism of the presence of a certain object. Language provides such signs. Without language behavior must be either stereotyped or incommunicable. The neural and implicit phases of sensory response, which may be supposed to be uniquely correlated with stimuli, are too obscure to serve as signs. The overt phase of sensory response, the external accommodatory adjustment such as looking, listening or touching, is also uniquely correlated with stimuli and is doubtless employed in the development of language. But this response in its grossly observable aspect is too coarse to distinguish two qualities of the same class, such as two different colors or two different sounds. Language as a social convention establishes identical responses to specific stimuli, and through the limitless variety of its forms provides for a limitless variety of stimuli. Verbal responses have the additional merit of being capable of neutrality as regards favor or disfavor. They may acknowledge their object without prejudice. For this reason they are peculiarly useful in the formulation of belief; and in providing for communication without the use of "influence," or between persons who may entertain opposite sentiments towards the same object. For purposes of knowledge language must be neither eulogistic nor dyslogistic; it must, in other words, have no coloring save such as it derives from the object or stimulus to which it applies.

Through language it is possible to carry out systematically a verification of one individual's judgment by the experience of another. A spoken word, such as "red," becomes a uniform response to the stimulus of red light concomitant with and additional to whatever primary motor-affective response is peculiar to the individual.⁶ Once the verbal response has been formed it may occur in the absence of the primary response, and may, like other responses, be implicit or overt. The overt or spoken word also pre-

⁶ I do not undertake here to describe the development of language reactions, but only their functions when formed. For a discussion of their origin *cf.* J. B. Watson, *Behavior*, 1914, Ch. 10.

sents auditory and kinesthetic stimuli to the speaker himself, and auditory, visual and tactual stimuli to other individuals. These stimuli being presented with the original stimulus become "conditioned" stimuli to the primary response. In other words the way it feels when one says "red," the sound of the word "red," the visual or tactual impressions of the moving lips of the man who is saying "red," the visual or tactual impressions of the conventionalized linear forms *r e d*, and possibly the kinesthetic sensations of the writer—all these acquire the power of inducing in any given individual the same mode of behavior as is in him induced by the stimulus of red light.⁷ When, then, I hear my neighbor say "red," I bring the appropriate response into play and find myself ready or unready according as the stimulus of red light does or does not appear. In the former case I have confirmed my neighbor's judgment, in the latter case I have at least cast doubt on it. In the comparatively simple example here used the general situation may serve as the index, that is serve to set me looking for red light here and now. In judgments with a remoter reference the process of verification depends entirely upon the unambiguity of the words which constitute the subject, that is their having a unique effect when used to give instructions. Thus in the judgment "fire is red," no verification is possible except in so far as the spoken word "fire" has the effect of influencing the auditor to find just fire and nothing else and to bring his red-response to bear then and there.

It is impossible here to discuss the other uses of language, its flexibility, and its indispensable functions in generalization, discrimination, and constructive speculation. These interesting and important considerations must be set aside lest we lose sight of our main problem, which is to understand the formation of a special cognitive interest. We have so far described the formation of the interest in verification and some of the special agencies which this requires. We have now to consider the interest in consistency, or what would usually be termed the logical interest.

It is evident that in acquiring stable and reliable beliefs it will be necessary to look not only to their truth as heretofore defined, but also to their compatibility with one another. A belief at variance with the same individual's other beliefs can have at best but a precarious existence. In what does this incompatibility consist?

⁷ Language in other words may employ any or all of the senses. That which distinguishes it is not its medium but its conventionalized function. I am strongly inclined to believe that internal auditory speech, or "hearing oneself think" must also be recognized and be given an important place in the mental processes. I have not included it because it raises the complicated question of images.

By whatever name we call it we must apparently concede that compatibility and incompatibility are fundamental features of our world.⁸ As regards the general conception it must suffice here to point out that compatibility inside the mind and outside the mind mean the same thing. An incompatibility between two responses does not differ in principle from the incompatibility that prevents two bodies from occupying the same space at the same time. The important fact with regard to the incompatibility of responses is this, that it does not appear decisively until the moment when they are brought to bear. They may be compatible in all their implicit phases and incompatible in their explicit phases. In other words the mind can readily entertain contradictory beliefs so long as it does not carry them out; just as it is perfectly possible to schedule two trains as passing at the same time in opposite directions over the same stretch of track so long as the trains are not actually run according to the schedule. It is possible even to run the trains *up to the point of collision*.

In the case of implicit response this compatibility is due in part, perhaps, to the fact that they do not become antagonistic until they innervate skeletal muscles, but more certainly to the fact that they may alternate. It is generally agreed that one may possess in dispositional form two tendencies like anger and appetite for food, which can not be excited simultaneously because they contain opposite activities in the same muscles and glands.⁹ They can, however, be excited alternately, and the existence of one as a disposition does not require us to deny the existence of the other. Now consider the case of two beliefs. I believe that my friend will be in New York at three o'clock on Monday afternoon, and also that he

⁸ It is, as Professor Holt has long since pointed out (E. B. Holt: *Concept of Consciousness*, 1914), one of the notable characteristics of physical nature. It does not mean the same thing as the absence of co-existence. It means the *impossibility* of co-existence. As such it is not, I believe, the same as the fact of conflict but is rather the source of conflict. Because *A* and *B* can not eat the same bread they contend for the bread; because *C* and *D* can not both occupy the same space they collide. The difficulty of stating contradiction altogether in terms of physical facts lies in its apparently being indescribable without reference to possibility. That the capacity of the hall is incompatible with seating more than five hundred people in it does not mean merely that the number of seats is five hundred, or that (in the case when the seats are filled) all above five hundred are standing, or that a thousand people are vainly struggling to seat themselves; but it means that, given the fact of the hall being as it is, one of the hypotheticals that does not fit it is the seating of five hundred and one or more persons in it. Two train schedules are incompatible when their *projected* and not yet actualized movements bring them to the same point at the same time. Two *tendencies* conflict in the same way.

⁹ The whole doctrine of repression can only mean that a tendency can exist in a dormant state although incompatible with the dominant tendency.

will be in Chicago at the same hour of the same day. I may perhaps hold these beliefs simultaneously, provided I do not carry them too far; I can certainly *suppose* them both at the same time by formulating some such verbal statement as, "X will be in New York and in Chicago at three o'clock on Monday afternoon." In any case I can believe now one thing and now the other and may possess both beliefs in dispositional form. What then does it mean to say that these beliefs are contradictory? It must mean that they can not both be *completed*. It is impossible that I should be greeting and dealing with X as indicated in both beliefs.

We are brought back, of course, to the incompatibility of the physical presence of X in two places at the same time, this incompatibility extending to relations between his organism and mine. Or the incompatibility of two beliefs reduces to the fact that they can not both be verified in the sense already defined. They can not both prepare me for contingent experience. It follows that the way incontrovertibly to *demonstrate* the contradictoriness of two beliefs is to carry them out; and that contradictions will be harbored in any given mind in proportion as that mind either habitually fails to carry out its beliefs, or possesses beliefs that can not be carried out because they refer to contingencies which do not normally occur. Thus we get on very comfortably with contradictory beliefs in the field of religion, politics, philosophy, and scientific theory, but find it necessary to eliminate them in our familiar dealings with the immediate physical and social environment.

It is important to observe that while two contradictory suppositions may be entertained as phases of one continuously and rapidly shifting process of thought, this has the effect of preventing either of them from becoming a belief. For belief consists essentially in committal.¹⁰ Two contradictory *beliefs* can occupy the same mind only when there is something like repression and dissociation; when one of them is functionally so unrelated to the other that when the one is called into play the other is not available. A mind which has two contradictory suppositions available in the same situation is in doubt and is equipped to meet two different contingencies. A mind which has two contradictory beliefs, having only one of them available at any given time, is both unresourceful and liable to error. It follows that suppositions with the same index should be kept functionally related so that they may be either corrected and replaced by a true belief, or held jointly in readiness as available alternatives.

Two beliefs are contradictory, then, when they *virtually* con-

¹⁰ Cf. my article "The Independent Variability of Purpose and Belief," this JOURNAL, XVIII, 169-80.

flict, when if carried out they would actually collide with one another. But this contradictoriness is not ordinarily established by allowing the collision to take place. As in the case of railway trains the collision is *avoided* by revising the schedule. In this anticipation of contradiction language is again indispensable. To *X* living and to *X* dead I have two opposed sets of reactions, opposed in the sense that I can not treat *X* both as living and as dead. *X* can not as a matter of fact be both dead and alive; and in so far as my reactions are intimately related to *X* they will share this incompatibility. There are also certain reactions to *X* dead-or-alive. Just as the name "*X*" is substituted for the latter, so the words "living" and "dead" are substituted for the former. It is furthermore a part of the convention of language that what is called "living" shall not also be called "dead," that the terms shall be used as mutually exclusive alternatives. This does not mean that I can not as a matter of physiological fact call *X* both "living" and "dead," but that it is a misuse of terms to do so, in the same sense that it is a misuse of the terms to call him "*Y*." In so far as I know how to use language and am disposed to be veracious I shall call a spade "a spade," and shall abstain from calling it "white" audibly when to myself I call it "black." Furthermore in so far as I have adopted the term "living" for *X* I shall be *unlikely* also to apply the term "dead" to him. These word-habits will undoubtedly acquire physiological incompatibilities, just as the primary reactions will. What we call reasoning from the principle of contradiction does not, however, depend on actually introducing these physiological incompatibilities, but only in presenting the situation in terms of a breach of verbal usage. Suppose, for example, that I entertain the two beliefs, "*Y* is an orphan" and "*Y*'s father is President of the United States," and you point out that I am contradicting myself. You do not mean that I *can not* hold both beliefs, for that is the very condition of mind in which you find me. If I ask you to explain yourself you would say that if *Y* is an orphan his father *X* must be dead; and that if *Y*'s father *X* is President of the United States he must be alive, since if a President dies another individual automatically succeeds to the office; and so you eventually show me that I am calling *X* both "dead" and "alive." You do this by encouraging me to "see the implications" of my two beliefs, that is to elaborate them—carry them out. You substitute for the summary verbal expression of my total reaction, the verbal expressions of some of its constituents, and then you show that two of these are such as "dead" and "alive," applied to the same index. And there you stop. You can not by such reasoning prevent my continuing to believe as before, but you can show what

I am doing. You can show it to me and to others. You can convict me of a violation of the canons of speech, and that will usually suffice to move me to withdraw one or the other of the two statements. If not, you will have done much to discredit any further statements that I may make. Meanwhile the fundamental fact is that if I were to carry out the two beliefs above formulated I should sooner or later find myself in error, or in conflict, or both. You may save me from this. I may devise some relatively innocuous way of trying out the two beliefs; and then, having adopted the one that is verified, reject the other.

As language makes possible the correction of contradictory belief, so it makes possible the *a priori* construction of "consistent" belief. It is to such a construction that the term "hypothesis" is more commonly applied. By combining words and ascribing them when so combined to a specific index I virtually create a determinate expectation. I may, for example, form the hypothesis that "there is a man-eating tiger in the adjoining wood." For most of these words there are equivalent primary and non-verbal responses. Some of the words, like their arrangement, have a purely grammatical function. The several words together with their grammatical structure prescribe a total organized supposition having a specific reference or index. When brought to bear on the indicated occasion it may or may not be verified. But in advance of such verification it may be tested by further elaboration and verbalization in order to discover whether it contains a pair of responses related as "dead" to "alive" or as *a* to *not-a*. If no such pair appears the hypothesis is said to be consistent, though its truth still remains questionable. It is clear that there is a great saving of labor in eliminating contradictory hypotheses in advance of the attempt to verify them.

It should be added that the present account of knowing is in no sense an attempt to reduce the content of logic to mental processes. That much of what is called logic is only bad psychology is doubtless true. But in so far as logic is the study of the fundamental types of relation, it is evident that its subject-matter must be as much presupposed in a psychology of the thought-process as in any other branch of science. The term "logic" being so understood, the structure of all things is "logical," physical nature no less than thought, and bad thinking no less than good. It follows that such problems as contradiction, implication, negation, universality and possibility are not solved, though they may be obscured, by sweeping them into the mind. This procedure appears to provide a solution only so long as the structure of mind itself remains unanalyzed. In proportion as psychology improves in ex-

actness it will become evident that contradictory beliefs, implied conclusions, negative responses, universal ideas and imaginary possibilities are merely special cases of these logical properties, and that their generic nature remains to be determined by a more fundamental analysis.

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REJOINDER TO MR. BOAS'S ATTACK ON
GUTHRIE'S PLOTINUS

IN Vol. XVII, No. 13 (June 17, 1920), of this JOURNAL there appeared a notice of my Plotinus-work by George Boas, of the University of California. It was quite a surprise to me, for various reasons. First because the writer was an entire stranger to me, and who therefore could not possibly have had any personal knowledge of me justifying his positive assertions of what I had or had not done, and doubting my word that I had failed to receive any encouragement in my arduous undertaking. Second, because the JOURNAL allowed an attack on my honesty (p. 350, l. 1) and truthfulness (pp. 350, 361), a procedure, to say the least, unusual in a philosophical *entourage*. Third, that the JOURNAL even allowed a notice of anything pertaining to Plotinus when twice in my life (about 1894, when in the Columbia library I wrote my "Philosophy of Plotinus," and about 1914, when I was ready to print my later work) I was rebuffed by authorities still influential in the JOURNAL on the grounds that "nobody was interested in Plotinus."

Besides my surprise, I was in answering the attack hampered by several circumstances. In the first place it is difficult to answer an attack so violent and abusive in a dispassionate and philosophic tone. Second, for over a year and a half, I have been and for the next year I shall still be engaged on my New Testament version which engrosses every spare hour in the night, on weekends, and during vacation, so that I have had to wait six months for even this preliminary self-justification. I therefore have to crave the reader's pardon for both the delay and postponement of a more detailed study of Plotinian hermeneutics. I can not, however, leave Mr. Boas's attack without some preliminary defense.

In the first place I must repeat my assertion that during this life-long effort I received absolutely no encouragement from any university, professor, student, publisher, or dealer, and that I was compelled against all opposition, to spend ten years' high-school teacher's stipend in producing this work in self-defense, and circulating it myself.

In the second place, Mr. Boas's attack fails to bring out the chief object and merit of my work, the Plotinian Studies, and my 74 page concordance, which alone cost me several hundred dollars. On the contrary his attack leaves the reader under the impression that I consider my chief merit the linguistic achievement of a final translation of a Greek author. In so far as any unintentional expression of mine may have justified such a conception, I gladly hasten to retract it, and to emphasize both the real object of my work, and my realization of my shortcomings. Frankly, Mr. Boas should have hesitated to accuse me of dishonesty, untruthfulness and plagiarism, for he might have known that I had earlier done entirely original work in the *editio princeps* of all accessible Numenian fragments, with translation and interpretation. Here Bouillet was useless, and the more he studied my book, the more he would have seen how original it was, and how it led up to my Plotinian studies and work.

In the third place, of my modesty about my work Mr. Boas says nothing. "It is only with mixed feelings that such a work can be published. [In contrast with the need for it is] the pitiful accomplishment. Nor could it be otherwise, for there are passages that can never be interpreted perfectly; moreover the writer would gladly have devoted to it every other leisure moment of his life,—but that was impossible." I would have done this work "at the beginning of my life, instead of at its end, had it not been for a mistaken sense of modesty, but as no one offered to do it, I had to do it myself" (in view of my Numenian studies).

In an introduction, part of which was unfortunately omitted for reasons of economy, I said in substance this: "As to the value of my translation, I do not claim to have found the thought that was in Plotinus's mind; that would be impossible, in view of his confused style and the hopeless *lacuna*. But what I can assure the reader is that I have nowhere merely translated obscurities. I have put into clear English whatever interpretation presented itself to my mind as most in harmony with the context, with the contemporary conditions, and with reason. "I could not claim to have given a final version, because commentaries will have to be written on every page; I have only made a rough pioneer bridge which others are invited later to replace with a more permanent marble structure."

In the fourth place, when Mr. Boas (p. 350) states that my "translation is due to the efforts of one man alone, Bouillet, whose translation of Plotinus has been the source of Dr. Guthrie's without any acknowledgment whatever," and that "honesty would have compelled him to admit the source of what he was translating," he is making an unjustifiable and unprovable assertion which is

against the facts, for on every step of the way I consulted all the translations to me available, and had them all around me as I worked. Every passage was collated with Müller, with whom in many cases I agreed, rather than with Bouillet. For Müller shares with Ficinus and Bouillet the honor of complete translations; and I gladly admit neglect of the partial translations of McKenna, Fuller, *etc.*, on the grounds that only a man who has gone over the entire ground can have achieved the relative sense of values necessary for interpretation for any part. Müller's work is indeed non-comparative (he gives no references to the ancients and supplies no implied reminiscences) but is sane, and concise, although mostly Teutonically inchoate. I should have liked to add here a list of passages in which I had followed his interpretation rather than Bouillet's but unfortunately the book in which I had left the marks of such passages (my instincts told me a person so sordid as my attacker must some day arise) has been stolen from the library where I did my work, and to find them I shall have to reread my whole work which can not be done till my New Testament task is finished. One chief place, however, is the introductory biography, in which the Rev. Professor Hunt has kindly pointed out the misunderstandings due to Müller's influence.

If in my book I have inadvertently or partially forgotten or omitted to render due tribute to the achievement of Bouillet, I am grateful for the opportunity of both supplying that lack here, and to explain to Mr. Boas how the accusations he levels against me are in reality proofs of the value of my work. Since my salad days I have ever understood that most originality consists in voluntary or involuntary ignorance of what has been achieved in the past; hence I have always been more anxious faithfully to represent, utilize and improve on the past than to claim originality. Of all the translators Bouillet is the one who has adduced contemporary comparative notes and restored the historic references. He is therefore unescapable; and the moderns who merely *read into* Plotinus their *fin de siècle* ideas (I could mention names if I chose) are the most unreliable of all. Indeed, I consider it my glory to have rendered in English in the least possible space all that is really valuable in Bouillet. Not that I consider Bouillet's interpretation final. He is still "in the Old Testament." He is still content to consider Plotinus a crazy-quilt patchwork; for him the Numenian traces of origin are practically non-existent, and his efforts to make a harmonious unity of all Plotinus's periods only lands him into impossible, forced interpretations. But there is no doubt that his are the clearest, most historical and consistent interpretations, and I am glad to have the

opportunity of testifying that in the majority of cases my reason has led me to follow his views.

To prove, however, how little I have allowed him to sway my judgment, I will give here two classes of passages; first those where Bouillet is incomprehensible, and I have given what I think is the real sense; and second such as were obscure, and needed entire re-statement. It will be noticed that these passages are not among the easiest, but among the most difficult; and this is as it should be in an honest version. In the easy passages it is only natural that the more faithful two versions are, the more similar they will be; and to condemn one version of the New Testament because too similar to the most faithful would be to insist on unfaithfulness.

I shall first give some passages in which neither Bouillet nor Müller have written sentences capable of grammatical or logical decipherment, and where I have at least attempted a reasonable interpretation, for I have never been willing to write anything I myself do not understand.

VI, vii, 33. *Bouillet*: Or la raison enseigne que ee qui a une forme, que la forme ou l'idée est quelque chose de mesuré, que par conséquent elle n'est pas une chose véritablement universelle, absolue, belle par elle-même, et que sa beauté est mélangée.

Müller: Die Vernunft lehrt also dass alles was eine Gestalt hat, die Gestalt und die Form dureh eine Grenze bemessen sind, und dies alles ist weder sich selbst genug noch dureh sich selbst schön, sondern auch dieses ist gemischt.

Text: Λέγει δὴ ὁ λόγος, ὅτι τὸ μορφήν ἔχον καὶ ἡ μορφή καὶ τὸ εἶδος μετρημένον πᾶν, τοῦτο δὲ οὐ πᾶν οὐδὲ αὐταρκες, οὐδὲ παρ' αὐτοῦ καλόν. ἀλλὰ καὶ τοῦτο μέμικται.

Guthrie: Now reason tells us in respect to anything that has a shape, that as a shape or form is something measured (or limited), (anything shaped) can not be genuinely universal, absolute and beautiful in itself, and that its beauty is a mixture.

IV, v, 10. *Bouillet*: "L'âme universelle . . . n'a pas pu posséder toutes choses présentes à la fois. De même qu'une raison, en se développant hors de la semence où elle reposait, semble marcher à la pluralité, mais affaiblit cette pluralité par la division, et que prodigant, au lieu de l'unité qui demeure en elle même l'unité qui est hors d'elle-même, elle perd de la force en s'étendant."

Guthrie: "As the Universal Soul . . . was not willing to retain all things that were present at the same time. (. . . Let us illustrate by the more familiar process within) reason which distributes unity, not indeed that which remains within itself, but that which is exterior to itself. Though this process seem to be a

strengthening one, reason developing out of the seed in which it brooded unto manifoldness, it is really a weakening (or destructive one), inasmuch as it weakened manifoldness by division, and weakened reason by causing it to extend."

Let me here subjoin several passages in which my interpretation shows difference from Bouillet's.

15. 1. *Bouillet*: "L'âme même que réside en nous a pour hypostase la Nature; cependant la Nature ne domine pas alors parce qu'elle n'est qu'une partie de notre être."

Guthrie: "In us also does the soul function, but she does not dominate us, constituting only a part of our nature." (Notice how much shorter and clearer.)

27. 30. *Bouillet*: "L'âme qui est toujours en mouvement pour arriver à la pensée [par la raison discursive] nous la fait ainsi saisir quand elle en reçoit le reflet."

Müller: "Deshalb erfassen wir ihn [erst dann] wenn die Seele, die doch immer zum vernünftigen denken hinstrebt, im Gedanken angekommen ist."

Guthrie: "That is why we grasp (the thought) only when the soul, which always desires rational thought, has achieved a thought."

38. 3. *Bouillet*: "Si donc avoir des sens, et des sens de telle sorte, est impliqués dans la forme de l'homme par la nécessité éternelle et par la perfection de l'Intelligence divine qui, en vertu de sa perfection, renferme en soi les causes [aussi bien que les essences]; si c'est seulement *a posteriori* que nous remarquons que les choses sont bien réglées (car dans le monde intelligible, la cause qui complète l'essence est intuitivement unie à l'essence: là haut, l'homme n'est pas seulement intelligence, et la sensibilité ne lui a pas été ajoutée quand il est descendu dans la génération)."

Guthrie: "We must premiss that in the intelligible world the cause that is complementary to a being is ultimately united to it. We must also premiss that, by virtue of its perfection, divine Intelligence contains the causes (as well as the being), so that it is only *a posteriori* that we observe that things are well regulated. If then the possession of senses, and indeed of particular ones, be implied in the form of man by the eternal necessity and perfection of divine Intelligence, then the intelligible man was by no means mere intelligence, receiving the senses when descending into generation."

12. 10. *Bouillet*: "Mais la qualité consiste dans les puissances qui viennent après les essences; la puissance de combattre au pugilat, par exemple, n'appartient pas à l'homme en tant qu'homme, comme la faculté rationnelle, en sorte qu'on doit nommer qualité, non la faculté rationnelle, mais plutôt la faculté qu'on

peut acquérir [telle que de combattre au pugilat], tandis que la faculté rationnelle est appelée qualité par homonymie."

Guthrie: "But quality consists in (inessential) powers (such as habituations and dispositions) classified below beings. For instance, boxing ability does not belong among necessary qualifications, such as rational functions. The latter would not be called a quality (as we would speak of boxing ability); and reasoning would be considered a quality only figuratively."

38. 24. *Bouillet*: "Quand il les qualifie de biens, n'est-il pas trompé par le plaisir que lui cause leur contemplation? N'est ce pas aussi parceque la vie lui est agréable qu'il lui donne le nom de bien? S'il ne trouvait aucun plaisir dans la contemplation des intelligibles, pourquoi les appellerait-il des biens? En outre ferait-il consister le bien à exister simplement? Mais quelle jouissance pourrait-il recueillir de la simple existence?"

Guthrie: "Perhaps indeed a man when he enjoys these (ideas and contemplations) might be deceived into calling them a good merely because he happened to be in pleasant circumstances; but should these circumstances become unpleasant on what grounds would he call them a good? Merely because they possess existence? But what pleasure or benefit could this afford him?"

38. 39. *Bouillet*: "En effet, elle ne peut ni se distinguer de l'intelligible en le considérant différent d'elle, ni contempler toutes choses, s'il n'y a pas en elle une différence en vertu de laquelle elle est toutes les essences."

Guthrie: "On the one hand, without the relation between the Intelligible and itself, the (mind) will not distinguish itself from (the intelligible); and on the other, without the arising of an "otherness" which would enable it to be everything it would not contemplate all (earthly) entities."

38. 6. *Bouillet*: "C'est ainsi que [par cette puissance sensitive] l'âme sent l'harmonie sensible, parceque l'homme sensitif [percevant par la sensibilité contenue dans l'âme raisonnable] ramène à l'harmonie intelligible tout ce qui lui est inférieur."

Guthrie: "Thus (by this intelligible sense-power) the soul perceives the supersensual harmony and also the sensual, but in a manner such as the sense-man perceives it, relating it so far as possible to the superior harmony."

In one way Mr. Boas's attack may have good results. It may stimulate interest in Plotinus in sport-loving students who love a fight. Moreover, what parts of his attack are constructive, and not merely personal abuse, were inevitable. I prophesied that the translation of Plotinus, once brought before the public, would become the source of endless commentaries, whose extent could be

compared only to the Biblical, or to Swedenborg's works. I will venture to add a prophecy, however, that from my time on it will have become impossible to work on Plotinus in any way other than comparatively, in the light of his Numenian origin and Nicean fruitage.

As soon as I have completed my New Testament work, I shall gladly return to the discussion of interesting translation problems in Plotinus and thus demonstrate the honesty of my attempts.

KENNETH SYLVAN GUTHRIE.

NEW YORK.

REVIEWS AND ABSTRACTS OF LITERATURE

The Letters of William James. Edited by his son, HENRY JAMES.
Boston: The Atlantic Monthly Press. 1920. 2 vols. Pp. x + 348, xii + 382.

During the later years of James's life a young student who was a stranger to me came into my office with the question: "I have just heard that Professor James is ill. Do you know whether this is so?" "Yes," I said, "I'm afraid it is." And then, my curiosity roused by the solicitude in her manner, I asked, "Why? Is he a relative, or do you know him?" "I've been studying his *Psychology*," was her answer. It was the first time in my experience that a student had ever shown interest in the health of the author of a text-book. William James was a real personality to thousands of readers of the *Briefer Course*, or the *Varieties*, or the *Pragmatism*. If you were disposed to agree with what you read it was partly because you somehow felt that so ardent and sincere a spirit must be expressing some truth, just because he was expressing himself—and he was so immensely worth while. And if, distrustful of the adequacy of any formal tests where we confront ultimate issues, we are tempted to believe that a philosopher's vision may be at least as important as his logic, and that this vision may in turn be quickened and extended by a certain sensitiveness and largeness of soul, it is hard to resist the conviction that such a vital, many-sided, open-minded, and eager inquirer must be an interpreter that deserves a hearing.

These *Letters* bring back the man, William James, to those who were fortunate enough to have known him by voice and presence; they will help to make more real the personality behind the published writings, even for those who like my young undergraduate knew him only through these, and thereby will contribute to a truer perspective and estimate of his philosophy.

What was this man who wrote himself so prodigally—to his own family and to colleagues naturally—but also to young adventurers in philosophy and to intimates, both men and women, of various professions and temperaments?

A group of friends were trying to answer this question. "To me," said one, "he seems to have been not a metaphysician, nor perhaps even a scientist. He was first, last, and always an artist. His early fondness for drawing and painting which nearly determined his career was but an indication of his true interest. It was the artistic *flair* which led him into this and that unexplored avenue, and projected a pluralistic system. His comment in the concluding letter of the volumes, upon criticism which had pointed out inward incoherence in his total scheme, was that the criticism was not "live"; it failed to grasp "his center of vision, by an act of imagination." Again it was only the dramatic or heroic that kindled any social interest, so far as these letters disclose such interest. The Dreyfus case and the war in the Philippines are practically the only causes that appear. His physical condition did not permit him to enter the Civil War, but the letters record no feeling of a stake in its issues, except for the allusion to Lincoln, "the representative of pure, simple human nature against all conventional additions"—surely an artist's empathy. The great industrial and social changes through which America was passing in his prime have likewise little or no reflection in these outpourings of himself. He was an artist."

"At any rate," said another, "he was scientist in this, which impressed me as the essence of his spirit: he was always keen for reality, for actual experience. This passion burns in his early letter to his mother on his choice of a career. 'On the one side is science, upon the other business . . . with medicine . . . between them. . . I fear there might be some anguish in looking back from the pinnacle of prosperity (*necessarily* reached, if not by eating dirt, at least by renouncing some divine ambrosia) over the life you might have led in the pure pursuit of truth. It seems as if one could not afford to give that up for any bribe, however great.' This eagerness for close contact with reality led him—intrigued as he was, even then, by general philosophic problems—into biology and psychology. It drew him into byways, barred by official guardians of scientific conventions, if possibly he might hit upon some trail to a new fact. It leads even to his scornful comment upon 'scientists' as authorities upon the total nature of reality (II. 270). It underlies his problem in his Gifford lectures, as he states it (II. 127) 'to defend (against all the prejudices of my "class") "experience" against "philosophy" as being the real backbone of the world's

religious life.' It is found in the advice to a young writer which closes the volume: 'May I urge . . . that you should now . . . devote your great talents to the study of reality in its concreteness.' "

"In this connection," remarked a third, "I have been surprised to find so little of what is often supposed to be James's pragmatism, that is anti-intellectualism, and the will to believe. He appears to be as singleminded in his passion for truth as any intellectualist. For example, in his letter to Schiller: 'Why not simply express ourselves positively, and trust that the true view quietly will replace the other.' His criticism on Royce was 'looseness of thought'; 'he is the Rubens of philosophy.' His comments on others and replies to criticism upon himself are addressed to reason, even when they argue that it is rational to admit that we all have some bias. Particularly in point as showing the openness of his mind, even to the absolutist point of view, is his perplexity about the Parthenon: 'There is a mystery of *rightness* about that Parthenon that I can not understand. It sets a standard for other human things, showing that absolute rightness is not out of reach.' His cry of relief when released from his professorship was, 'To be alone with truth and God!'"

"I suppose," said a fourth, "that having been struck early in the *Letters* by the practical or ethical significance to James of his philosophical problems, notably those of freedom, and the existence of evil, it was explicable that I should have found in this the main spring of his thinking. The day when he adopted Renouvier's conception of Free Will 'was a crisis in my life.' It came at a time of general mental depression in which suicide had 'seemed the most manly form to put my daring into.' His giving up the notion that all mental disorder requires to have a physical basis, ' . . . that the mind does act irrespectively of material coercion and could be dealt with therefore at first hand . . . was health to his bones.' He pioneered his own way into the thick of things: 'I'm swamped in an empirical philosophy. I feel that we are nature through and through, that we are wholly conditioned, . . . and yet notwithstanding, we are *en rapport* with reason. . . . How to conceive it? Who knows? . . . We shall see, damn it, we shall see.' Later this issue broadened to the moral problem of the *Dilemma of Determinism* and flashes boldly out in the letter to Hodgson: 'Indeterminism is the only way to *break* the world into good parts and into bad, and to stand by the former 'as against the latter.' As for the distinction which Hodgson has sought to make: 'What living man cares for such niceties, when the real problem stares him in the face, of how practically to meet a world foredone, with no possibilities left in it' (I, 244). Religion meant to him as most im-

portant, 'the social appeal for corroboration, consolation, etc., when things are going wrong with my causes (my truth denied), etc.' (II, 213). The deepest reason for pluralism, tychism—anything but absolutistic monism—was the moral one. 'Life is evil.' And if all is implied in the molecules of the nebula, 'With what can I side in such a world as this, this monstrous indifference which brings everything *codem jure*? Our nature demands something *objective* to take sides with. If the world is a Unit of this sort, there are no sides—there's the moral rub' (I, 446). His objection to an 'ideal' God is that 'Ideals ought to aim at the *transformation* of reality—no less!' 'I do not believe it to be healthy minded to nurse the notion that ideals are self-sufficient, and require no actualization to make us content.' "

"I don't profess to have an explanation for James's philosophy, or even a key-note," remarked another, "but I was caught by the irrepressible, spontaneous whimsicalities and humor that bubbled over in certain letters, and the utter frankness and profound seriousness which made other letters human documents. From the early raillery of the family letters, through such delicious nonsense as appears in the communication to Henry Higginson anent finances, or in that to Henry Holt where the Mark Twain twist gets an extra turn from the spelling—'You should hear my wife swear when she hears your name'—on to the final signature, 'Yours with mingled admiration and abhorrence,' the humor is always ready when the time and the person offer the fit occasion. There are frank comments upon contemporaries, sometimes not complimentary, but utterly without malice. There are tears too in their place, and exquisite self-revelations, as in the description of the night in the Adirondacks. There is a world of wisdom packed into the letter to his thirteen-year-old daughter. And where can one come nearer to first and last things than in the last letters written to his sister and father?"

"Is it not possible that it is in these various impressions rather than in any one exclusively that we have the most adequate reflection of the man?" resumed one of the group who had already expressed himself. "He was certainly artist; he was certainly the open-minded and passionate lover of truth; he craved contacts with concrete immediate facts; he was no looker-on in this theater of man's life but was as eager to champion his views as to explore; but he was none of these to the exclusion of the rest. He was artist, explorer, truth-lover, religionist, champion of the weaker side, warm friend, frank critic—in short, he came near to combining traits which in most men are not found in the same personality."

William James, the man, who shows himself so unreservedly in

his friendships, his interests, his appraisals, his aversions, his work, and his recreations, ought to be a convincing witness against some misconceptions of his philosophy, in so far as these have been genuine and not merely captious. Those critics whose interpretations have been due to the exigencies of controversy will doubtless not be convinced though one rise from the dead.

The most serious misconception has been that when James said "practical" he meant it in the narrowest possible sense, as excluding imagination, science, friendship, and religion, instead of as he defined it, the "concrete, the individual, particular, and effective." James spoke of "cash values" and it has been assumed that by "cash values" he must have meant money or things that money can buy. The difficulty seems to have been that James gave his hearers and readers credit for more imagination than they possessed. The letter to his mother on his choice of a profession, and the consistent idealism of his whole career, are the best commentaries upon what he considered to be "cash values." More excusable, perhaps, is the difficulty felt by many in his hard saying that the "right" is only the expedient in the way of behaving. The word "expedient" undoubtedly conveys the meaning of adapting ourselves to things, instead of changing things to make them conform to our standards and ideals. If any one takes a certain type of religious view, or naturalist view, or metaphysical view, then for him the universe is all as it should be, and to adapt ourselves to it is not only prudent but moral. Providence or Nature or Reality is the standard; to adjust our conduct to this standard is our duty; the expedient is the right. But this was not James. The whole point of his philosophy and the whole spirit of his life was that we should change reality—not merely accept it or float with the current. "Our philosophies swell the current of being, add their character to it. Our thoughts determine our acts, and our acts re-determine the previous nature of the world."

Another form of this misunderstanding has been to identify James's philosophy with utilitarianism, because he dwelt so much on the use of truth or of religion. But in the sense in which utilitarianism measures rightness by consequences solely and reckons these consequences only in pleasure or pain, James had definitely rejected this in his essay, "The Moral Philosopher and the Moral Life." "The nobler things *taste* better, and that is all that we can say," and if we were offered a world of millions "kept permanently happy on the one simple condition that a certain lost soul on the far-off edge of things should lead a life of lonely torture," we should immediately feel "how hideous a thing would be its enjoyment when deliberately accepted as the fruit of such a bargain."

The life that is disclosed in the letters was likewise a far remove from the typical utilitarian method. It was one of immediate reactions and intuitive appraisals, rather than of calculation. There was a romantic adventurous element in it that took risks. But finally if literal souls want chapter and verse for his conception of "success" and "cash," and for his own belief in "abstract" justice, let them read the letter to Wells (II,269): "Exactly that callousness to abstract justice is *the* sinister feature, and, to me as well as to you, the incomprehensible feature, of our U. S. civilization." To tone down flagrant abuses and breed excuses for offenders from a general fund of optimism and respect for expediency is "understandable in onlooking citizens only as a symptom of the moral flabbiness born of the exclusive worship of the bitch-goddess SUCCESS. That—with the squalid cash interpretation put on the word success—is our national disease. Hit it hard!"

Less important than misconceptions of James's moral attitudes was the charge of subjectivism. The letter to Dickinson Miller which has the illustration of the east of beans on a table, makes his position unmistakable on this point.

To explain the infrequency of reference to public affairs or social problems, aside from the artist or the knight errant in James which was stirred chiefly by the dramatic or enlisted him to champion the under-dog, we find numerous indications of an individualism both of temper and of principle. He did not like to be organized or standardized, and he expressed the principle in the letter to W. M. Salter (II, 101): "Every great institution is perforce a means of corruption—whatever good it may also do. Only in the free personal relation is full ideality to be found."

A truer perspective of James's philosophy as a whole should result from what the letters show to have been his early as well as his later chief interest. For one, I had likened James to Tennyson's Ulysses. The Trojan war was the great enterprise of Ulysses' prime, but, this accomplished, he was not content to rust in peaceful Ithaca, but must fare forth again to seek new worlds. I had conceived the *Psychology* with its nine years' labor not only as the great enterprise, but as the strongest interest, of James's earlier and middle life. I had thought of the philosophy as a later interest, although, to be sure, many of the characteristic notes of that philosophy appear in the volume, *The Will to Believe*, and indeed in the *Psychology* itself. The *Letters* show that the facts were otherwise. When twenty-three, he wrote to his brother Henry from Brazil: "When I get home, I'm going to study philosophy all my days," and to his father, "I am convinced now, for good, that I am cut out for a speculative, rather than an active life."

His letters to Ward, Holmes, and others during his stay in Germany and afterwards show that though he might be studying physiology or psychology, his deepest interest lay in freedom and necessity, mind and body. His study of the specific sciences, so far as it was not dictated by occupational motives, seems to have been largely a matter of philosophic method. "I feel somehow, now," he wrote when twenty-four, "as if I had no right to one opinion on any subject, no right to open my mouth before others until I know some *one* thing as thoroughly as it can be known, no matter how insignificant it may be. After that I shall perhaps be able to think on general subjects." When offered the instructorship in anatomy, he wrote in his diary: "Philosophical activity *as a business* is not normal for most men, and not for me. . . . To make the *form* of all possible thought the prevailing *matter* of one's thought breeds hypochondria. Of course my deepest interest will, as ever, lie with the most general problems." "Religion is the great interest in my life," he wrote in 1897, and his letter to Miller in 1910 even goes to the length of saying, "I'm sorry you stick so much to my psychological phase, which I care little for now, and never cared much. This epistemological and metaphysical phase seems to me more original and more important."

It would be rash to say for which phase later generations will be more thankful, but I hazard the guess that the more scientific aspects will necessarily be affected more by advance in the subject. And this or that particular of his speculations in philosophy will likewise have to stand the test of logical criticism. But in its function as guide of life philosophy makes appeal to other tests as well. It must lure or challenge or quicken. It must, in James's favorite phrase, be a *live* hypothesis. Only the future can say how the future will value James by this criterion, but it seems not fanciful to think that the vivid personality of the man, which radiates in the *Letters*, will add to the vitality of the philosophy. It will kindle in many the passion to have a philosopher's vision—whether that vision is precisely the vision which James himself saw is not the most important thing. He would himself care little for the letter if he could have the spirit—honest, open-minded, sensitive, earnest, and brave.

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Experimental Studies in Recall and Recognition. EDITH MULHALL
ACHILLES. New York: Archives of Psychology. 1920. Pp.
v + 80.

Dr. Achilles has made an intensive experimental study of recall and recognition, using a variety of materials, such as words, syllable-

bles, proverbs, geometrical forms, and the like, with approximately 100 adults and 600 school children as subjects. As in earlier investigations, it is found that in general the number of items recognized after an exposure of the material surpasses the number recalled. No definite formulation of the relation between Recall and Recognition was possible, since the relation of the two functions varied noticeably with the materials and subjects. The study presents results which bear interestingly upon recent theories of the constitution of mental functions. It was found that the coefficients of correlations between Recognition and Recall were positive but generally low. Furthermore, the correlations between Recall for different types of material were low, averaging around 0.10, with rather large probable errors. The correlations for Recognition of different materials are similarly low and positive. These results conform to recent theories that mental behavior depends upon a large number of relatively specific capacities rather than upon a few very general capacities.

Women and girls were, in general, found to be slightly superior to men and boys, both in Recall and Recognition. Both functions seem to increase rather uniformly with age and with school grades. The younger pupils in the grade usually surpass the older. The tests were found to be of no important diagnostic significance in the case of a variety of insane patients. An analysis of the Recognition process is made in a final chapter showing in general that a subject is more often correct when judging that a thing *has not been seen*, than in judging that a thing *has been seen* before.

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The Origin of Man and of his Superstitions. CARVETH READ. Cambridge University Press. 1920. Pp. vi + 350.

In the words of the author this work "explains in its first part an hypothesis that the human race has descended from some ape-like stock by a series of changes which began and, until recently, were maintained by the practise of hunting in pack for animal food, instead of being content with the fruits and other nutritious products of the tropical forest" (Preface, p. v). No valid evidence in support of this speculation is adduced. Familiar references to "Lycopithecus" fail to establish the existence of a wolf-type of man.

The assumption that human society originated in a hunting-pack does not lead to new discoveries in regard to the cause of belief, the nature of magic, animism, totemism, etc. These familiar

subjects are discussed in considerable detail in the Frazerian manner. Most of the primary and secondary sources cited are at least a decade old and recent contributions to the knowledge of primitive belief are frequently ignored. The chapter on Totemism is especially archaic.

The book is readable and, with the exception of the *Lycopithecus* hypothesis, may be recommended for the consumption of the layman.

E. A. HOOTON.

HARVARD UNIVERSITY.

JOURNALS AND NEW BOOKS

JOURNAL OF EDUCATIONAL PSYCHOLOGY, February, 1921, Vol. XII, No. 2. *Educational Psychology at the Chicago Meetings of Scientific Societies* (pp. 63-71): A. I. GATES. — At the meetings of the American Psychological Association and the American Association for the Advancement of Science held at the University of Chicago Dec. 28-30 eighty papers were read. Half were either studies of educational problems or studies which could be directly applied to education. Twenty-seven titles dealt in particular with tests; general psychology claimed eight titles, experimental nineteen, comparative four, social four, clinical nine, industrial six. Brief reviews of the educational papers are given. Professor Margaret Floy Washburn was elected President of the American Psychological Association. *A Survey of the First Three Grades of the Horace Mann School by Means of Psychological Tests and Teachers' Estimates and a Statistical Evaluation of the Measures Employed* (pp. 72-81): CLARA F. CHASELL and LAURA M. CHASELL. — Scores in Stanford revision of Binet Test, Pressy Primer scale, Helen Meyer Tests, Teachers' Rating in Ability in Reading were gathered. As result the necessity for gathering similar data for the children throughout the elementary school was realized. The survey was carried out but no report has yet been made. *Results of the Combined Mental-Educational Survey Tests* (pp. 82-91): R. PINTER and H. MARSHALL. — The tests used were described in the *Journal of Educational Psychology*, Vol. XII, No. 1. The results are given in this article. Mental or educational tests alone are not adequate for a thoroughgoing survey of a school system. A real diagnosis of the difficulties existing in any particular instance requires a combined mental-educational survey. Many schools whose educational level seems passable or good are really inefficient and wasteful of the splendid pupil-material they possess: *Massed vs. Distributed Effort in Learn-*

ing (pp. 92-97): L. A. PECHSTEIN.—Experimenters agree that distributed practice is more efficient than massed. Some raise the question whether the efficiency of distributed effort is confined to certain stages in the learning process or whether this mode of acquisition is uniformly effective for all stages in the development of a habit. This paper shows that the question is tied up with "Is the learning mastered as a whole or in parts?" Experimentation was restricted to the motor field (maze). The longer and more difficult the problem, the more advisable to break it into units and learn both the units and the connection of these under massed conditions, it being uneconomical to learn the hard problem, irrespective of whether effort is massed or distributed. *An Experimental Study of the Value of Word Study* (pp. 98-102): V. A. C. HENMON.—It was hoped that word-study would function in four specific ways: (1) increase in vocabulary, (2) increase in ability to give meanings accurately, (3) increase in ability to choose words discriminately, (4) increase in ability to read difficult prose understandingly. The tests employed to measure them were (1) Terman's Vocabulary, (2) Thorndike's Visual Vocabulary, (3) A special list of 25 words, (4) Trabue's Composition Scale I, Thorndike's Intelligence Examination Tests 1a and 1b of Part III. The tests did measure very definite outcomes but they did not measure what the word study group may have lost in literary appreciation. *Group Tests of Intelligence: An Annotated List* (pp. 103-108): J. CARLTON BELL.—A list of 30 tests is given. The need for comparison, analysis and evaluation is great. *Department of Discussion of Research Problems. New Publications.*

Boutroux, P. L'idéal scientifique des mathématiciens. Paris: Felix Alean. 1920. Pp. 274. 8 fr.

Campbell, Norman Robert. Physics: The Elements. Cambridge University Press. 1920. Pp. 565.

Ciccotti, F. Com'è governata la Russia. Le istituzioni e le leggi della Republica federale russa dei Soviets. Bologna: Nicola Zanchelli. 1920. L. 12.50.

Dingler, Hugo. Physik und Hypothese: Versuch einer induktiven Wissenschaftslehre nebst einer kritischen Analyse der Fundamente der Relativitätstheorie. Berlin: Walter de Gruyter & Co. 1921. Pp. 200. \$1.50.

Drever, James. The Psychology of Industry. London: Methuen & Co. 1921. Pp. 148. 5s/2d.

Goldberg, Jacob A. Social Aspects of the Treatment of the Insane, Based on a Study of New York Experience. Columbia University Studies in Political Science. New York: Longmans, Green & Co. 1921. Pp. 247. \$2.50.

- Hayes, Edward Cary. *Sociology and Ethics: The Facts of Social Life as the Source of Solutions for the Theoretical and Practical Problems of Ethics*. New York: D. Appleton & Co. 1921. Pp. 354. \$3.
- Hurst, Arthur F. *The Psychology of the Special Senses and Their Functional Disorders*. Croonian Lectures delivered before the Royal College of Physicians in June, 1920. Oxford: University Press. 1920. Pp. 123.
- James, William. *Collected Essays and Reviews*. New York: Longmans, Green & Co. 1920. Pp. x + 516. \$3.75.
- Lugaro, E. *Idéalismo filosofico e réalismo politico*. Bologna: Nicola Zanichelli. 1920. Pp. xvi + 412. L. 15.
- Perry, Ralph Barton. *Annotated Bibliography of the Writings of William James*. New York: Longmans, Green & Co. 1920. Pp. 69. \$2.25.
- Saccheri, G. *Euclides Vindicatus*. Edited and translated by G. B. Halsted. Chicago: Open Court Publishing Co. 1920. Pp. xxx + 246. \$2.
- Whitehead, A. N. *The Concept of Nature*. Cambridge: University Press. 1920. Pp. x + 202. 14s.

 NOTES AND NEWS

The Aristotelian Society met in London on June 6, Professor Dawes Hicks, Vice-President, in the chair. Dr. Dorothy Wrinch read a paper "On the Structure of Scientific Inquiry." In the earlier stages of empirical generalizations results of a general character are built up and applied by means of the forms of reasoning employed in probability inference, *viz.*, induction and analogy. In the more advanced stage the aim of science is to arrange the general propositions which cover, as particular cases, the phenomena of which we are aware, in such a way that the phenomena of the world are deducible from the smallest possible number of assumptions. Logical necessity alone can knit together theories and the experimental results which go with them. It is found that logic consists of relations between sets of properties. The general study of the formal and abstract properties is at the foundation of the great advance in modern science. In particular the process of *true analogy* whereby the problems of electrostatics, current electricity, thermo-

dynamics and hydrodynamics are simultaneously solved is of the utmost importance.

In the last week of December, 1921, the French Philosophical Association will receive the philosophical associations of Great Britain in Paris, returning thus the courtesy extended by the British societies last September at Oxford. The American Philosophical Association has been invited to send at least four delegates to the conference, to represent Metaphysics and Psychology, Ethics and Social Philosophy, Logic and Scientific Method, and the History of Philosophy.

Professor B. H. Bode, formerly of the University of Illinois, has been appointed professor at Ohio State University in the Department of Education.

Professor Theodore de Laguna and Professor Grace de Laguna of Bryn Mawr College, on leave of absence, expect to pass the fall and winter at Montpellier, France.

It is announced that Professor George Fullerton will give courses in Philosophy at Vassar College during the next academic year.

Dr. H. T. Costello, Associate Professor at Trinity College, Hartford, Conn., has been promoted to Professor of Philosophy at the same institution.

Dr. Christian A. Ruckmick, of the University of Illinois has accepted an appointment as associate professor of psychology in Wellesley College.

THE JOURNAL OF PHILOSOPHY

EMPIRICISM VERSUS FORMALISM IN WORK WITH MENTAL TESTS

THE past four or five years have seen a simply extraordinary activity in the field of "mental tests." "Testing" has, however, developed in a curious fashion largely without definite scientific affiliations. As one result, critical discussion of fundamental principles has lagged far behind application. And work in this field is tied up with large hypotheses which have never received adequate critical consideration. As one of a number of recent efforts toward a critical review of methods, the writer has lately published a paper entitled—somewhat ambitiously—"Suggestions Looking Toward a Fundamental Revision of Current Statistical Procedure, as Applied to Tests."¹ He has just received from Dr. Ruml a proof of a paper commenting on this article.² With the proof was a letter in which Dr. Ruml expresses the hope that a reply to these comments may be early forthcoming; he feels that discussion upon the mental principles in test work is at present most desirable. With this last statement, at least, the writer is in full agreement; and he hastens to make such reply. The issues can, he believes, be put very briefly. They are three in number.

1. The fundamental contention of the writer is for a more empirical method, in work with tests, and less easy assumption of large hypotheses. For instance, it should be obvious that if the validity of the theory of general intelligence is assumed, and results on different tests summed to make a total score, if teachers or employers are asked to estimate "general ability," if marks in school or college are averaged to give general ability in school work, little evidence contrary to the theory of general ability can be found. The whole situation has been generalized in the first place. The concept of general intelligence is, as a matter of fact, being very seriously questioned at present.³ The contribution, to this fundamental

¹ *Psychological Review*, Vol. 27, pp. 466, 472, November, 1920.

² Beardsley Ruml, "Reconstruction in Mental Tests," this *JOURNAL*, Vol. 18, pp. 181-185, March 31, 1921.

³ For an admirable non-technical account of some recent conclusions in the matter, see E. L. Thorndike, "Measuring Human Intelligence," *Harper's Magazine*, Vol. 140, 1920, pp. 227-235. The same writer summarizes some interesting correlations in a brief paper "Reliability and Significance of Tests of Intelligence," *Jour. of Educational Psychology*, Vol. 11, 1920, pp. 284-87. An interesting discussion from the point of view of the employment psychol-

problem, of the tremendous amount of work with mental tests is really astoundingly small, simply because the work has been so tied up with the hypothesis.

The same situation holds with regard to the use of the theory of the "normal" curve, in test work. It is common practise, in building educational tests, to assume that the ability in question is distributed according to the "normal" curve. The items are, then, selected in the first place to give equal units on a "probable error" scale. And, naturally, the results given with the test show a "normal" distribution. The investigator then goes further (very likely) and works out supposedly equal units of ability, calculates a "zero point" in the ability in question, as measured by the scale, and talks easily about "silent reading ability" or general intelligence, in the same fashion that he might discuss measures of height or weight. As a matter of fact, the concrete facts of the situation are so overlaid by the theory which has been involved in the treatment that the validity of the theory for the particular ability in question can not be determined, nor the application of the theory to the practical problem concerned.⁴

Other large assumptions, perhaps less vital, but no less unfortunate in principle, are common in present statistical practise. The involvement of the test work in such hypotheses is surely unfortunate. It is also decidedly unfortunate that such methods have led to the development of a formal statistical method; and we find effort that should be devoted to the study of fundamental problems being wasted, instead, in the fulfilment of formal statistical requirements. An astounding amount of time is being devoted to the development of "units," "zero points," and "weightings"—to the mystification of the uninitiated, and to the neglect of elementary problems of analysis and verification.

When a situation is thus clouded by hypotheses, a return to a rigidly empirical method is naturally suggested. A mode of attack must be worked out which will be free from such doubtful hypothetical elements. So the writer has argued (to Dr. Ruml's horror, apparently) for, "no hypotheses, as thoroughly empirical treatment as may be!" Surely such a return to rigidly empirical

ogist will be found in Henry C. Link's *Employment Psychology*, Macmillan, 1919, Chapter 12, "General Intelligence, a Dialogue," pp. 130-139. Consideration of theoretical aspects of the matter will be found in articles by G. H. Thompson, "The General Factor Fallacy in Psychology," *British Journal of Psychology*, Vol. 10, 1920, pp. 319-26.

⁴ See, for instance, E. G. Boring, "The Logic of the Normal Law of Error in Mental Measurements," *American Journal of Psychology*, Volume 31, 1920, pp. 1-33. The paper is, the writer believes, of the very greatest theoretical importance.

methods would seem the natural and healthy way out of such a situation. It would seem the only way in which present hypotheses might be verified, and new and more sound hypotheses developed.⁶

2. The writer's second point has to do simply with a matter of fact. *As a matter of actual fact*, "testing" is at present largely a technical science. The writer has argued, as strongly as any one, for purer research in the field of mental tests and for the need for such research.⁷ He is now devoting more time than he should, perhaps, to such work. However, *as a matter of actual fact*, work with tests is now largely of an immediately practical nature—or at least, is with reference to practical problems. Under such circumstances, certain very definite and very practical obligations are incurred. Suppose one is using tests of intelligence in order to determine whether a boy in the fourth grade may not be capable of doing fifth grade work; the hope is, that by a little special coaching and "double-promotion" the child may ultimately be saved a year in his school work. It is no abstract child who is under discussion—it might be your child. The one consideration which is paramount to all others, under such circumstances, is the very practical consideration—which tests, and which methods, will aid most effectively in deciding this practical question. Dr. Ruml comments, in horrified tones, on the fact that the writer "would even use his statistics to produce bimodal distributions," in order to deal most efficiently with such a practical problem. Certainly the writer would be quite willing to sacrifice formal statistical methods in order to deal more effectively with the boy.

The contrary practise is, unfortunately, the common practise at present. The one great question would seem to be: just what will these tests tell with regard to most satisfactory grade placement? How well (the question is) will the test inform us as to whether this boy can do the work of the fifth grade, and what is the significance of a score of 20, in this matter, as compared with a score of 15? Instead, investigators are putting their best efforts into finding out whether a score of 20 is as far above 15 as 15 is above 10, and how far these various scores are above "zero" ability.

⁶ Ruml issues a solemn warning against any such "direct action." The empirical method as "direct action"! Such strictures have, the writer believes, been put upon efforts at a return to first facts, before.

⁷ See especially S. L. and L. W. Pressey, "Cross-out Tests, with Suggestions as to a Group Scale of the Emotions," *Journal of Applied Psychology*, Vol. III, 1919, pp. 138-150. Also, S. L. Pressey and O. R. Chambers, "First Revision of a Group Scale Designed for Investigating the Emotions with Tentative Norms," *Journal of Applied Psychology*, Vol. IV, 1920, pp. 97-104; and L. W. and S. L. Pressey, "A Critical Study of the Concept of Silent Reading Ability," *Journal of Educational Psychology*, Vol. XII, January, 1921, pp. 25-31.

It is such substitution of formal statistical requirements for practical requirements, in use of tests for dealing with practical problems, to which the writer particularly objects. Practical efficiency is certainly the criterion by which our statistical technique should be judged, if we are dealing with practical problems. Our obligation is not to the requirements of a formal method, but to the needs of the people with whom we are working. If a "statistical trick" will inform us more accurately as to whether the boy above mentioned belongs in the fifth grade, then by all means use the "trick." Instead, it more often happens that the best welfare of the boy is sacrificed to the requirements of statistical pedantry.

To sum up then: the writer wishes (1) a return to strictly empirical methods in view of current injudicious and uncritical use of hypotheses, and (2) a recognition of the practical obligations involved in use of tests for practical purposes, and the development of statistical methods designed specifically with reference to these practical problems. Now, a word with regard to the type of method which, to the writer's view, should give the empirical approach desired, and as to the relation of such a method to testing as a technical science. It must be emphasized that any faults of this method do not necessarily comprise the truth of the first two contentions; the writer insists that more empirical method and a more consciously technical treatment for technical problems, are desirable; any faults of his particular type of empiricism, or of his notions with regard to the relations of empiricism to a psycho-technique, must not be allowed to compromise the main issues. However, the first two contentions may be made clearer if some positive suggestions as to method are added.

3. It is first necessary, as the writer sees it, that methods be freed from involvement in hypotheses as yet not thoroughly verified (a requirement that certainly leaves very few hypotheses which may safely be thus employed!) To return to the previous example, it should not be assumed that the same tests may be used in prognosticating success or failure in learning to read, and in learning arithmetic. Each problem must be dealt with separately. If it appears that the same tests may be used to indicate capacity along these two lines, well and good. But this must not be assumed. There must be specific study of specific problems, and always an opportunity for analysis.

There must also (in such empirical procedure) be a willingness to work with materials as they are, without transformation into terms more readily treated according to current statistical practices. To return again to a previous example, it may be that "arithmetical ability" is distributed according to the "normal"

curve. It may well be that problem-solving is at present taught in the school in such a haphazard way that the operation of chance factors does bring about a "chance" distribution. But one must not proceed to do all his thinking with regard to the teaching of arithmetic in these terms, from now on. The aim, in the teaching of problem-solving, is to equip the child to solve common practical problems in later life; and there is no evidence that such practical requirements are so distributed. In fact, the writer suspects, it is a fairly reasonable inference that the most efficient school would bring about a distribution which would not be "normal." Moreover, schools are organized at present primarily with reference to minimal requirements. And the fundamental unit is the grade. An empirical treatment will seek to construe the data with reference to these various facts, rather than in terms of a biological or statistical theory.

And here we come (if the writer understands Ruml correctly) to the third point of difference between Dr. Ruml and himself. Such empirical methods have the great advantage of also getting closer to practical problems. In other words, the writer believes that the study of practical problems will not lead one to "ignore the necessity for analysis," but will bring about analysis; will not "warp the observed data," but will describe the data as they are. Such methods will "warp" the results into a shape not congruous with some current theories, to be sure. But that is not proof positive that these methods are wrong. One can not but wonder whether Dr. Ruml's difficulty may not be that he is thinking entirely in terms of "Pearsonian statistics" while we need a "relativistic" theory. . . . Anyhow, the writer refuses to be frightened away from the greatest possible efficiency in his technical work, because of the charge that these most efficient methods are unscientific. Rather, he believes that the efficiency of a method is not such bad evidence of its fundamental soundness. And he will be inclined to take his cue from this, and aim first at the greatest usefulness, in test methods—with the confidence that such a criterion could not lead one very far astray.

Well—so much for the general concept, as the writer sees it. However, it is obvious that his theory, essentially, can not rest with a general statement but calls for a pragmatic proof. The question is as to what, actually, such an approach will yield. He will have in print, shortly, test materials developed and handled precisely after the method suggested in the previous paper.⁸ It is

⁸ In fact, he has already presented something of this sort in previous papers. See, for instance, S. L. and L. W. Pressey, "Irregularity in a Psychological

about such concrete matter rather than about general statements of theory that discussion would seem most profitably centered. That there should be such discussion seems to the writer most highly desirable; he is in thorough agreement with Dr. Ruml on this point. In fact, he hopes, with Dr. Ruml, that others may take part in the discussion. He also hopes, with him, that any such discussion may proceed without any of the personal irritation which sometimes so unhappily develops, in the course of differences regarding matters of scientific method. There is surely a need for the clarification of both aims and methods in the field of tests. Such clarification is most decidedly needed, if test work is to continue its healthy growth. If "testing" can thus be brought into its own, the writer believes, as stated in a previous article⁹ that the test method will be of great value as a method in pure research. Meanwhile, testing is primarily, at present, of a practical nature; and the writer feels that the most healthy and consecutive development, from both the scientific and practical point of view, can most economically be obtained by a vigorous, persistent, and open-minded carrying through of the practical problems to which we are now obligated.

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A NOTE ON THE RÔLE OF MATHEMATICS IN PHYSICS

I

BECAUSE *static* phenomena furnished the model upon which Cartesian geometry was constructed, Leibniz and Newton, especially the latter, were compelled to develop or use a mathematical theory built upon the model of *dynamic* facts as supplied primarily by Da Vinci, Copernicus, Galileo and Kepler. If it is fertile, calculus, as well as any other system of mathematical theory, should bring to light new facts about the physical phenomena as a result of which it was originally constructed. Furthermore the new facts give rise to a new model of physical phenomena. In fact, every new physical fact gives birth to a new model of physical phenomena, upon which mathematicians develop new mathematical theories, which in turn give rise to new generalizations, and if taken up by physicists are the means of discovering new existential facts.

Examination as a Measure of Mental Deterioration," *Journal of Abnormal Psychology*, Vol. XIII, No. 5, December, 1918, pp. 285-294; and S. L. and L. W. Pressey, "The Practical 'Efficiency' of a Group Scale of Intelligence," *Journal of Applied Psychology*, Vol. III, March, 1919, pp. 68-80.

⁹ See note 7.

That is, if we become acquainted with a variety of simple experimental facts, we at once begin to connect these facts, if at all possible, into a coherent system; that system becomes an "ideal" model in which each and every fact is in some way related to each and every other fact within the model. A new model will lead to a development of a new system of mathematical theory, which, if perfect, may be reduced to a small number of constants and simple equations, and if the latter are developed further, they will lead to new theorems which again may produce new discoveries of physical facts. Therefore it must be said that in their development mathematics and physics depend upon each other to a very large degree. It is physics which may supply to mathematics new models and therefore be indirectly responsible for the development of new mathematical theorems or systems. Mathematics again, because of its generalizations, does not only extend to its own field but also supplies to physics ideas which may directly lead to new discoveries. For example, Newton always began with an analysis of phenomena and then used mathematical synthesis in order to discover new physical facts.

Mathematics plays always an instrumental function in physics, but its rôle is more than merely that of an instrument; it also makes known the *class* to which certain facts belong, but never their *essence*. To believe with Descartes that with matter and motion one could mathematically construct a model of our universe is only an *a priori* idea and not an empirical fact. Even though Cartesians claimed that Descartes's geometry rested upon metaphysical axioms and that the development of these axioms would answer each and every question that physics may raise, some questions could not be answered satisfactorily, consequently a new mathematical system was developed. That does not mean that this new system has taken the place of the old system of theorems, but rather that this new system has taken a place beside the old one, and as a result of this mathematical science was enriched. Descartes defended the mathematical theory of *continuum*, which he based upon a physical model of continuous matter. It was necessary to develop a new mathematical theory when matter was discovered to be discontinuous. The doctrine of molecular discontinuity gave rise to a new model which was instrumental in the development of new mathematical theorems. Once these theorems are deduced, they become entirely independent of the physical theory of molecular discontinuity.

It was Newton and not Descartes who pointed out the function that mathematics must play in discovery. Mathematics must not rest upon axioms which are derived *a priori*; they must be a result of experience, they must be generalizations from models of nature

furnished to us by our experience of facts, whether it be in the street or laboratory. It was Newton who showed by example that we must first analyze facts of experience in order to construct our model, which can be synthesized when mathematically developed. The axioms or definitions are results of analysis (mathematical analysis) which when connected systematically (mathematical synthesis) give rise to new generalizations (due to mathematical deduction) in turn giving rise to new discoveries of physical facts. The truth of these generalizations is directly dependent upon our constant guidance by experience in our procedure.

It would be fallacious to think however that mathematics adapts itself to physics, any more than algebra adapts itself to geometry and gives rise to analytical geometry. The fact is that mathematical physics is the true physics, a fact long recognized by Newton. Mathematical physics is not in any sense opposed to experimental physics; the former is the "*ideal*," towards which all development of experimental physics should tend. All experiments are means which lead to mathematical explanation; that is actually the true function of mathematics in physics. It is the experiment which gives value or truth to experimental physics, but in its perfect and most useful form it is expressed in mathematical language and consequently the fact of experimental physics becomes the fact of mathematical physics.

Therefore the rôle of mathematics in physics is not that of a discipline independent of facts, and mathematics does *not* give us truth *a priori*. All mathematical physics must begin with facts of experience. To explain fully what may be meant by truth in this connection would necessitate a discussion of the relation of physics to metaphysics, which will be the task of another paper.¹ The exact rôle of mathematics is not to establish mathematical science or mathematical theorems; no more is it to establish *a priori* connections between different facts. These could be known empirically. The rôle of mathematics is to make the connections more easily obtainable and to serve to discover and to express laws, not to prove them, and above all to prove that they have an eternal value.

II

It was Newton's conception of particles or atoms as mathematical points that became so fundamental to all future mechanics, even

¹ We may point out briefly in this connection that it is due to Newton's doctrine of symmetry and not to the Leibnizian principle of sufficient reason that prediction in science is possible, and that truth in physics is intelligible. It is because of the symmetry in the objects of experience themselves that we can rightfully expect a symmetry of effect from a given cause, and not because of the existence of a rational order of principles, which guarantees deduction.

though he thought of them only as mathematical (and not as metaphysical) entities. That is, Newton, like Galileo before him, thought that the fundamental properties of matter are those only which lend themselves to quantitative treatment. As has been pointed out above, mathematical theory is the result of models constructed from physical facts of experience, and if this mathematical theory is developed, it gives rise to generalizations which give rise to new ideas, when mastered by physicists. These ideas lead to new discoveries and finally change or develop the original model. Consequently, it is natural for the physicist to develop a mathematical theory based upon the quantitative properties of matter, which alone lend themselves to mathematical treatment. These defined properties are derived from experience. A further development of this mathematical theory should lead to new general concepts which in turn give rise to additional or new properties of matter, *e.g.*, system of forces, centripetal force, etc.

Therefore when forces are conceived as applied to each particle of solid, they may also be conceived as applied to a point of the solid called its center of gravity. The summation of these forces in a single point is called by Newton a centripetal force, to which he gave a mathematical expression actually a natural development of Kepler's laws. Newton defines force in terms of algebra, as an expression of an element in movement measured in an element of time. Force and space are in functional relationship, which is scientifically expressed in mathematical terms. Movement is associated with force, and force is a mathematical concept. It was Galileo who gave to Newton the idea of force, and the idea that gravity is a field of such forces, upon which model Newton constructed his mathematical equation. It is very natural for a mathematical physicist to conceive of a body as made up of physical particles between which certain internal actions or forces are constantly working; so that a body is reduced to a system of points and forces. By doing this, the problem of motion and equilibrium resolves itself into an application of the principles of mechanics of the particle. Or the forces of a body, in fact, resolve themselves into a summation of forces, as the force of an immovable center of gravity of a body. Within any such mass, particles or atoms have a geometrical characteristic which is constant, no matter what forces we may apply to them. Consequently it is very natural and fruitful to assume certain rigid relations between particles of any mass, which are regarded as a system of mathematical or physical static relations, and are adaptable to a mathematical treatment, which actually is an "*ideal*" simplification of physical phenomena. But since natural science, *e.g.*, physics or astronomy, deals with large

aggregates of particles, the heterogeneity of relations which *may* actually exist between these particles is negligible, and a single simple mathematical expression of these relations is not only possible but also very desirable because of its utility. As for example when we assert that an ellipsoid with a great number of dimensions can be defined sufficiently by five or six constants, we mean only that our study of mathematical theory, modeled after ellipsoids, can be expressed by means of these five or six constants. Mathematical theory therefore can be reduced to a small number of equations which involve a small number of constants, but it would be folly to say that the actual physical models are so simple in structure. We may notice another example of "*ideal simplification.*" When we express the rate of emission of the α particle, which as a matter of fact it has been actually impossible to see with accuracy, what we really express is the "*mean number,*" and that is really the only thing that we have scientifically arrived at. Here physical facts are only "*mean numbers*" and these are only the facts accessible to our observation.

We say that A is a function of B if A changes with B , and we can calculate the derivative which will represent this rate of change. We say that this derivative represents the law or rate of change of the body, or in other words, that this derivative stands for the relationship which exists between A and B . But if we carefully observe the change of A and B , whether it be in a physical, chemical, biological or psychological laboratory, and plot the curve representing this functional change, we find that the relationship between A and B is not at all as absolute as the principal concept of calculus has it; in fact the change plotted does not at all represent a curve. What we really have between our X and Y axes, as a fact of actual experience, is a number of points widely distributed, but yet within certain limits representing a continuously progressing curve.²

Because the bodies and their motions studied by physicists are apparently so nearly homogeneous, it is therefore possible for them to employ mathematical generalizations of relations in order to express their behavior and nature. It was necessary for Newton to assume that particles are homogeneous, and the models of nature based upon the models of experience dealt with lent themselves to that end. This was necessary, because if the particle (or atoms) were supposed to be heterogeneous no mathematical or any other simple treatment of them would be possible. And furthermore, it was not only necessary to admit the above generalizations, but also that the resultant action of a body would be the direct sum of

² I have more fully discussed the above in the *Monist*, for October, 1919.

the actions of all its parts, and that all bodies being made up of similar homogeneous atoms would behave alike. For a generalization contrary to the one stated above would permit any single and simple equation summarizing the behavior of matter, modeled after a large number of diverse facts. That is the reason why the statistical method as employed in science is so fruitful, it always supplies to mathematics the indispensable models, which are constructed on the basis of observable facts which really are the "mean numbers."

Again it is mathematical theory which can bring together under a single generalization the crude facts of isolated experience so different in type as, *e.g.*, the motion of solid bodies, of light, of sound, or of matter.

If the main business of physics (or natural science in general) is to discover and describe the order characteristic of its subject matter, to describe the past and to predict the future with a certain amount of accuracy, then it is legitimate for physics (or science in general) to assume that bodies are functions of their minute units, and that the behavior of a body is the resultant of or a function of the behavior of its units, or that a number of isolated facts can be expressed by a single equation even though this mathematical equation be based upon a model arrived at by a "mean number" statistically derived from observed facts of nature.

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REVIEWS AND ABSTRACTS OF LITERATURE

Implication and Linear Inference. BERNARD BOSANQUET. London: Macmillan and Co. 1920. Pp. ix + 180.

It is fabled of the hoop-snake that once upon a time he grew discontented with that linear mode of progression so long affected by his ancestors. Thereupon he took the tip of his tail in his mouth, thus producing in his form that endlessness which is the essence of the good infinite and proceeded to roll like a hoop. So alarming was the nimbleness to which he now attained, that he threatened to become the terror of man and beast. Happily for the rest of creation, he chose to attempt the ultimate mountain heights, where the roads are narrow and tortuous. And there it came about, that the very impetuosity of his velocity caused him to skid on an awkward curve, and he tumbled afar into the abyss.

We have before us a volume of hoop-snake logic. Our author is critical of the linear "bead-theory" of deduction, which has been the dominant one in the development of deductive logic, and which

hangs a random bunch of axioms or postulates in mid-air, without any further visible means of support, and depends therefrom a loose-waving string of deduced theorems. Our author would have every train of deduction be like the lines in a well-composed painting, never losing itself over the borders of the frame, but rather leading the eye always sweeping back to the centers of interest. He would leave no loose ends. He would, on the one hand, assume no axiom as evident in itself alone. Yet neither, on the other hand, would he leave anything finally hypothetical. The deductions would support the principles, as the principles the deductions. Each partial system would, as a whole, fall into its place in a larger system, and this into a larger system still, until all were bound together in that widest, yet unified, circle and synthesis which is the categorical system and totality of all truth—wherein the hoop-snake, having finally swallowed himself, would be transformed into a beatific vision.

To remind ourselves that this point of view is not altogether novel, let us recall a well-known passage from Carlyle: "Our Professor's method is not, in any case, that of the common-school Logic, where the truths all stand in a row, each holding by the skirts of the other; but at best that of practical Reason, proceeding by large Intuition over whole systematic groups and kingdoms; whereby, we might say, a noble complexity, almost like that of Nature, reigns in his Philosophy, or spiritual Picture of Nature: a mighty maze, yet, as faith whispers, not without a plan."

Obviously such a book as that of Mr. Bosanquet's, though readably enough written, will appeal less to the beginner in logic than to the special student, whether in logic or metaphysics, whose previous thought, and previous acquaintance with the wide range of authors criticized, will give him some check on, and some estimate concerning, the force of the argument here presented. In many of these matters a hair-line is all that separates the true and the false. The exact nuance is everything. Yet a reviewer is expected to speak as one having authority, saying, "Here and here all competent students will admit that our author is wrong." I choose rather to write in the first person, as one diffident and tentative, saying only, "Thus at the moment it appears to me."

Realism and idealism, in the philosophical as opposed to the literary sense, differ, I suppose, with primary regard to the place or centrality they respectively give to mind in the world. Only a few years since we were hearing much from realists called new, who would bring the mind more abroad among things than the older, but by no means obsolete, dualistic realism. Perhaps we might venture to say that new realists and idealists are alike in this, that

they are both mentally out of their heads, though what in the new realist is but an eccentricity of the ego, becomes with the idealist a megalomania. But when you come down to arguing the pros and cons of this sort of question, it has a way of transforming itself into prior questions. These latter turn out to be questions rather of principles of logic, wherein nothing is apparently even hinted at concerning the nature of mind. The idealists are pretty uniformly characterized by this, that they place the whole always prior to the part. A consistent idealism seems necessarily to turn into absolutism. The realist is led to say, on the contrary, that the whole presupposes its parts, and there is self-contradiction in defining the parts in terms of that whole which contains them, for the latter can not exist till the parts of it are one and all present. I admit there are those who dismiss the question with a remark that the whole-part relation is not objective. But they are either endorsing the idealist position, or affirming a belief in nominalism—which latter belongs pretty largely to another order of considerations altogether. So our dichotomy remains exhaustive.

Among English writers, the supreme work of idealistic logic is still Mr. F. H. Bradley's *Principles of Logic*. Bradley is too modest in his ascription of superiority to Bosanquet's subsequent logical writings, as Bosanquet would probably be among the first to admit. Bradley's own later book, *Appearance and Reality*, has been more widely read, and the ironical skepticism by which Bradley has there accomplished what some have called "the disappearance of reality" has perhaps done more to discredit metaphysical idealism in the present generation than was effected by any hostile critic of idealism whomsoever. I can not help thinking that the Bradley of *Appearance and Reality* has seen more clearly whither those fascinating and plausible doctrines of the *Principles of Logic* were leading than has the less skeptical Bosanquet. Be this as it may, few who have carefully studied Bradley in his logical masterwork seem to have ever been able again to shake off the grip of his influence. Overeager is Bradley at times to bolster up some foregone thesis, but he is genuinely empirical too, and willing to show on occasion a scrupulous respect for fact, such as I have not always observed in those system-scouting gentlemen, who, dismissing Bradley as of course a tissue of *a priori* constructions, thereupon regularly preface each new outpouring of their own *a priori* ideas by the reassurance that they are experimentalists and pragmatists, unwashed empiricists, racy of the soil of reality.

Bradley's theory of judgment, as is well known, makes every judgment the affirming that a certain predicate applies to a subject, emphatically insisting, however, that the subject in question has

ceased to be the usual grammatical subject, and has become the common subject of all judgments, namely, Reality itself. If you say, "Smith hates Jones," you really assert, "Reality is 'Smith hating Jones.'" But, of course, this is not quite true, for Reality is this and a great deal more besides; and you must hasten to complete this judgment by telling more fully what Reality is, lest you be caught speaking half-truths. And then this judgment begins to fuse with other judgments, which have also started along the same road towards completing themselves, and you find no place for pause short of a synthesis of all judgments into one grand predicate, the explication of the absolute totality. Since there is only one Reality, there can be truly only one judgment and one act of knowledge.

It would be a long task to criticize this theory in all its bearings. I restrict myself to a mere suggestion. Personally I should like always to use "real" as a predicate, and never as a subject. The nearest to the Bradley inversion that I would care to make, would be to turn "Smith hates Jones," not into "Reality is such that Smith hates Jones," but into "There is a complex which is real, such that 'Smith hates Jones' describes in part this complex." Whether or no metaphysical monism be true, the question before us concerns what we really do mean when we judge. It seems to me unmistakable that at the core of our actual judgments there is always a specific and limited objective reference. We are intending to characterize, not all Reality, but some specific bit that is real. But is not "all Reality" there, in the background, like the chorus in an opera? So Mr. Bosanquet thinks. We may be so sure, for instance, of an implication or other bit of knowledge, that we venture to say, "If that is not true knowledge, nothing else is," just as we might also say, "If that is not so, I'll eat my hat." Mr. Bosanquet ignores the metaphysical implications of the latter statement, and concentrates on the former, which he neatly transforms into, "That is to say, an implication rightly judged is guaranteed by the whole system of reality." We may all admit that where there is a system, there is the possibility of guarantees by deduction. But whether "all Reality" is a system tight enough to guarantee anything specific, seems to me most dubious. And in any case, the specific reference is one thing, the guarantee another.

But this is, then, to fall back into the exploded correspondence theory of truth? I shall admit it, yes. I admit it because I am one who believes there are numerous different acts of knowledge, and not one supreme act of knowledge that somehow exists in various mutilated editions. I hold that two minds may exist which know the same thing to the same extent and yet are not in so far forth identical. To believe this is to be a realist; to deny it is to be an

idealist like Mr. Bosanquet. I think it can be proved that other sorts of idealists are inconsistent. As a realist, I am crude, and superficial, and naïve enough to believe, that if I now judge, let us say, that "Confucius was a wise man," what makes my judgment true is not its coherence with other judgments of mine, but is some sort of correspondence with the actual career of a certain benevolent gentleman who lived on the other side of the earth these many years ago. It seems to me just plain nonsense to call this knowledge of mine timeless, or to call it not mine—and I had rather be naïve than nonsensical. I am well aware that mighty arguments have been marshalled against such a crass dualism, arguments that have ranged from lofty assertion down to withering contempt. I admit that all proof I can ever hope to get for the truth of my judgment about Confucius must consist in its coherence with other now present, or some day to be present, contents of my knowledge, and this coherence is my working criterion and guarantee of such truth. Why, then, not drop this irrational yearning after correspondence with something unreachable, and retain only the internal coherence? To this I reply that Confucius is not unreachable. It is through my knowledge that I reach him. He is what my knowledge is about. But just because I reach him only through this knowledge, and in so far as it reaches him and is adequate to him, and I have otherwise no hold upon him, therefore I can not set him on one side, and knowledge on the other, and compare. In this sense the test of knowledge must lie within knowledge itself. But what is there wonderful in this?

My knowledge must not, however, even at its best, be identified with the existence of the object known. Not only does this follow from the proposition laid down above, that there can be two distinct knowledges of the same thing, but there are other reasons perhaps more obvious. Knowledge can not be so much creative of the thing itself but that error is possible and ignorance is possible. The erroneousness of error simply can not be merely partialness. I am willing to grant to Mr. Bosanquet that every false judgment contains some inkling of the truth. But the error part of it is a specific wrong combination. The "right combination in the wrong place" is just a plain wrong combination. But more difficult still is it for a strict coherence theory to explain how ignorance is possible. On a strict coherence theory we ought to be ignorant of nothing, for that of which we are ignorant is surely dualistically apart from us, and by this theory such can not be. The idealist in Berkeley's dialogue replies to the suggestion of a tree in the desert of which no one is thinking, by remarking that his interlocutor had to think of it even in adducing the example. Doubtless, if I were an idealist,

I should be convinced by this clever fallacy. And because I should try to be a consistent idealist, I should go on to prove, in the same manner, to any doubting Hylas, that he was not so ignorant as he had modestly supposed. I should say to him, with a malicious gleam in my eye, "Tell me what you are ignorant of." I should then triumphantly point out, that since he had told me just what it was, he was obviously not ignorant of it. But if he rashly told me he did not know what he was ignorant of, then, as a good idealist, I should indeed have him at a disadvantage. Was he not himself admitting he did not know what he was talking about? — Alas! the facts break in upon our dialectic. We are ignorant of many things. When we learn of them our knowledge must therefore be something superadded. It may make a difference. But then the difference made is a superadded difference. Ignorance and error are facts. I regret they are. But I can not accept a theory that leaves them out of account, and that is what the coherence theory does.

Though I hold that the idealist coherence theory of truth does not correspond to our most ordinary ideas of truth, I should also wish to insist that it does correspond to certain common and useful notions about the truth. If we are aiming at truth, and truth only, in single propositions, then we may run a better chance of hitting it if we make our statements as vague and indefinite as possible. Every finite statement, say Bosanquet and Bradley, can be true only under conditions not explicitly mentioned. To this we might reply that the further statement, "There are conditions under which this first statement is true," must be true absolutely. Pretty clearly, however, if we are sincerely in search of knowledge, it would be better, as a mere consideration of good method, to say: "Rather than rest on truistic generalities, let us take the risk of error. What we seek is not merely truth, but the whole truth; the more complete and precise, the better. By being indefinite, I can avoid error, but at the same time I avoid knowledge." In thus welcoming the idealist call for the "whole truth," I can not see that one is in the least committed to the further metaphysical thesis that the whole world is one unified and necessary system, and any isolated part must be a "false abstraction." In any kind of a world where truth was good, it would be desirable to seek more of it.

I like, indeed, to consider systems quite as well as does Mr. Bosanquet. But here again is a fundamental difference of idealist and realist points of view. Mr. Bosanquet's idea of system is drawn from the Hegelian notion of the "concrete universal." Thus he is led to emphasize the concepts of identity and difference, rather than the concept of relatedness. For instance, the system of colors has an underlying identity. It will be noted that, though they seem

to start as strictly coordinate, the idealist's "identity" always turns out to "underlie" the "difference." The identity in the color system is "color," which is differentiated into reds and blues. But it is not as if one could pick out "color" and leave the red behind, or pick out the red and leave mere "color." Well and good for this illustration. But I do not think that such examples, with their peculiar emphasis on identity and difference, are at all typical of systematic relationships. They lead Mr. Bosanquet, for instance, to think of geometry as differentiations within an identity—namely, space. The result is a bewildering discrepancy between his ideas of geometrical form and those of almost all contemporary geometers. An identity-difference analysis is, I suppose, abstractly possible in almost any sphere. But except where we are dealing with hierarchies of concepts, I see no reason to believe that it is ever the most fundamental or most illuminating analysis. And to fail to differentiate it from a genuinely relational analysis, confounding the two under the common rubric, "system," is to me nothing but blur and confusion. That confusion is the very cornerstone of idealistic logic.

Such insistence upon an "identity in difference" analysis of systems, plus the claim that any part of a whole taken in isolation is a "false abstraction," results, as one consequence, in a denial, not merely of the adequacy of ordinary deductive systems, but of the very possibility of considering "logical form" in any isolation whatsoever. And this in turn has another further consequence, less obvious but of immense metaphysical importance. It makes the world as it now is, necessary, by destroying the legitimacy of even discussing the possibility of its being otherwise. Thus we find Mr. Bosanquet, in his chapter on "Judgment and Supposition," led by the logic of his own position to declare that what we think of as the possible is always nothing but just another revelation of the characteristics of the actual. Mr. Bosanquet tells us, in substance, that while you may make a supposition contrary to fact, the instant you venture to judge, it is about the actual that you judge. Be it ostensibly concerning the supposition only, nevertheless really you infer or judge always fact, not supposition. And of facts there are none, save the aspects of one Fact—Reality as a concrete whole. He, then, who would escape from "the long second-best" of this our actual world into fairer realms of the possible and the ideal, will find there only a shadow cast on nothingness, the mirage of the prison whence he fled. Behold, the actual is the necessary, for there is no other save the actual itself again! Nay, why flee? For all your wants are satisfied by this actual Reality—that is to say, all your *reasonable* wants! Such is the irony of Idealism, that thus transforms

itself, before our eyes, into an almost brutal actualism, and bows down in reverence before whatever has the good fortune to exist.

Again full reply is beyond our present compass. Again I can only make the confession of faith of a realist who still believes in ideals: one who believes that much in this world is contingent, and might well be otherwise; and that it is possible to make true statements about the ideal, when the ideal does not exist, statements that are not queer backhanded ways of characterizing what does exist. I am inclined to believe that there are certain formal principles of structure to which the world conforms, general types of systematic relationship. For example, the so-called "law of contradiction" is, at last analysis, one such principle. But the "law of contradiction" that gets stated in a logic-book is not the principle itself, but its representative, a sort of demiurge who descends into the realm of language, and tells us how to use symbols. Such ultimate principles are perhaps unstatable in words. But if so, it is not because they are mysteriously ineffable, but because they lie deeper than language, deeper than the truth and falsity that words express. Every ordinary statement has its possible contradictory. But the principles to which I here refer have no possible contradictions. What meaning could we give, for instance, to an attempt to contradict the law of contradiction itself. And so also with the other similar principles. Such principles lie deep inwoven into the structure of this world. They are the formal characteristics of systems. They are not premises of deductions or ordinary axioms. They are the ultimate rules according to which the game must be played. If you try to evade the rules altogether, you do not play at all. You could, however, play another game and keep within these same rules. I would not assert that these principles are each "true within its own four corners," independently of all else. I believe that they are actually embodied in all the warp and woof of this world; and, in addition, I furthermore believe that if any other world were real, they would be embodied in it, the very groundwork of its texture. What they would be "in themselves alone," that I know not. They are not apart from this world, but they are not exhausted in it. They are the basis of fact to which we must appeal when we unfold the implications of a supposition. Thus we see that the belief in "logical form," and the belief that the possible may be possessed of a systematic structure of its own, are mutually interdependent.

The idealist declares mind is the greatest thing in the world: for where anything is, there it is. It seems to me unlikely that everything is known, but I can not disprove it, nor does this matter. The serious point of difference is that I would go further than this,

and declare the mind is potentially greater than all that is. I say the glory of mind is in this: that where things are not, it yet can be, and from outside all that is, it can look back upon what is, and if need be, condemn it. I hope I am not here interpreted as declaring that the mind itself becomes unreal. I am still talking in dualist terms. The mind has real thoughts, but these may be about the unreal, about that which only might be. I would go so far as to say that where possibilities are not considered, mind is not. And hence, the necessary and self-enclosed system of an Absolute Idealism of the Bosanquet type, wherein there are no possibles save the actual,—I speak not here of the rather different type illustrated by Josiah Royce,—such an Idealism seems to me very near to being merely a glorified mechanism, a new naturalism, that uses indeed the language of psychology in preference to the language of mechanics, but knows not the meaning of mind. I am far from agreeing with Mr. Bosanquet that mind is the one self-subsistent, self-enclosed thing in the world. I find it rather that thing which is the most relative and dependent. But I give it an independence he does not give it, for I believe that, at every step it takes, mind transcends the world whence it sprang. The Hegelians well say that a thing can only be understood by a mind that contrasts it with what it is not. But then they say, also, that the Absolute, the living synthesis of all that is, need not be thus compared with another which it is not, for within itself it contains what it is not. This last phrase is nonsense pure and simple, and the system ends in self-contradiction.

For the sake of a particular emphasis, in the above criticism I have rather oversimplified. I have perhaps suggested that all systematic relationship is a matter of a few highly formal principles or relationship constants. I should prefer to believe, however, that such "logical systems" are merely the most general and simple sort of systems. Other systems will always illustrate logical systems, but will be something more. And from any system you may get a basis for discussing the possible—not because the system is "real," but because it is a system. I take it that, supposing you placed yourself at Mr. Bosanquet's standpoint, you would consider that you approached nearer and nearer to system as you approached concrete completeness. Anything less than the concrete whole would be, at best, an imperfect system. I should prefer to say rather that all systems are abstract, or better, that they each move on a particular plane. A tree or a man will belong, in general, to more than one system. But a thing will belong to any given system by virtue of one of its aspects or qualities, not by virtue of its concrete totality. While the single individual thing thus runs perpendicular

to systems and ties them together, it does not make them one system. Inference is always within a system. From the fact that a man is a good citizen, you can not infer how fast he will fall if he jumps out the window. In general, no inference can pass merely by way of the individual thing, from one system to another. I am not denying that certain systems may be otherwise related, but I am denying that there is a concrete system of all things.

While I hope I have already made clear the radical divergence between the "identity in difference" analysis that leads to the "concrete universal," and the above sketch of a pluralist theory of systems, a further comment may help to show why I think the latter more fertile in solving the actual problems we meet. The set of scientific laws in a well-differentiated science is a characterization of a natural system. There is no *a priori* reason why there should not exist bodies completely characterized by one or two such sets, for instance, physical bodies. And furthermore, there is no reason why there should not also exist other bodies, such as organisms, behaving as accurately in accordance with the *laws* of physics as do sticks and stones, and yet because they belong also to another superposed system, are not predictable in their total behavior so long as you consider only physical laws. No one believes that mathematical laws are broken because objects also obey physical laws, or the first law of thermodynamics broken because the same things that illustrate it also illustrate the second law. Why then should still "higher" systems be supposed to break or nullify the lower? The only reason for such a supposition is the confusion between the system and its laws and the thing and its total behavior. And this confusion is made equally by the mechanist philosopher and the devotee of the "concrete universal." Each thinks there is only one system; they disagree concerning which it is.

Implication, Mr. Bosanquet tells us in the present volume, is a relation between, or among, the several parts of a system, which so ties them together that a change in one part would call forth a corresponding, though different, change in the others. It is on the basis of such answering of part to part that inference is possible. This definition of implication in terms of "potential differences in a system" (the terminology is not Mr. Bosanquet's) is interesting for the way in which it introduces the notion of an unreal, but only possible, change into the very definition of implication. It is interesting also for the way in which it makes implication a relation in the realm of objects, and not in the more mental realm of truth-values of propositions. I suspect, however, that Mr. Bosanquet would feel rather shocked at my perverse selection of points of interest. Mr. Bosanquet might much prefer to stress the sym-

metrical character of implication: when A changes, B does; and when B changes, A does. Now, in spite of the many examples Mr. Bosanquet has scattered through all his logical writings, I see no good reason for believing that implication is thus symmetrical. I am unable to see why A and B might not be so related that when A changed, B did, but A did not always change when B did, and B was not analyzable into factors, one of which changed only when A did. In such a case we should say B implied A , but not *vice versa*. And I am unable to see that a system of such implications is any worse system for that fact. A classification of systems into perfect and imperfect on this basis is one I should certainly reject. But here again we face fundamental disagreements, and the full discussion would be a long story.

One aspect of the general problem we should not, however, omit. The unsymmetrical implications which are relations between truth-values of propositions in an ordinary deductive arrangement are certainly subject to peculiar paradoxes. Mr. Bosanquet thinks these puzzles prove that genuine implication is always symmetrical and mutual, and that such notions as those of logical independence and logical priority are mistaken. To me they seem rather to establish that the usual deductive system form is, to no small degree, awkward and artificial. For instance, granting unsymmetrical implication, we should probably say that the implier is dependent, and that which is implied is independent. Again, we might say that that which is implied is logically prior. But then, in one of the usual deductive systems of propositions, the theorems would be independent and logically prior to the initial axioms! Or if the mechanist says the future is rigidly predictable, that would not be because the future is dependent on the present. No, the implier is dependent—he must mean that the present is dependent on the future! You can evade these disconcerting paradoxes by throwing aside such terms as “logically prior,” or “independent.” But this is a lazy-man’s solution. It is much better to grapple with the difficulty. A system of propositions must be considered as a derived and secondary product. Its linear or tree-like arrangement may ill represent the actual simultaneous balancing and interplay of eight, a dozen, a half-a-hundred interrelated elements and factors in an objective system. In emphasizing this inadequacy, Mr. Bosanquet is certainly right. But he would not be willing to follow me in some further details, which I shall try to hint at by an example.

In a system of propositions, deductively arranged, about plane geometry, we start with concepts of point, line, plane, etc. Also we lay down some conveniently assumed axioms and postulates about these. We then proceed to a new synthesis, not really con-

tained in our starting-point, such as, for instance, the concept of a triangle. The direction of logical dependence is clear enough—triangle presupposes straight line, but not *vice versa*. But once given a triangle, there arise a second order of entities, the truths about a triangle. These truths may be independent of the accepted set of axioms, for they might possibly be deducible equally well from some other set of axioms. But once the triangle is introduced—though not before—the truth of the set of axioms, as a set, becomes now dependent on the truths about the triangle. We can then reason: “If not these truths, then not this set; but this set we have accepted, therefore we must accept these truths.” The real truth-implication is most adequately stated thus in negative or reversed form, and runs in the opposite direction from the subsequent inference: “If not q , then not p , but p , therefore q .” So in truth-values the axiom set is indeed logically dependent on the theorems “deduced.” There is no real difficulty here; no necessary confusion of sorts of logical dependence. Nothing could be sharper, nothing more precise—though if one must be an idealist, and identify a triangle with the sum of the truths about it, one does get into a mess! The deductive system form is perfectly consistent in itself, once you realize that it is, in comparison with the subject-matter expounded, somewhat artificial.

The deductive system form is artificial. Many a reader of Spinoza has commented on the artificial form of exposition employed in the *Ethics*. But when it comes to mathematical texts, too few readers ever come to appreciate the degree to which mathematical exposition is artificial. Axioms, postulates, deduced theorems, come even to be taken for the subject itself: that is mathematics, we say. Then the formalism, and the frequent arbitrariness of order, make a renewed impression on us; and instead of noting that the form of exposition is where the arbitrariness resides, we make metaphysical generalizations about mathematics itself—perchance we decide that mathematics was made by man, an invention, a tool for handling concrete facts, “like a McCormick reaper.” And in logic, likewise, the same story is repeated. Even so acute a writer as Mr. Bertrand Russell not infrequently leaves a careful reader in bewilderment whether it is subject-matter or symbols that is intended. Three-fourths of the work of developing symbolic logic has been a partially successful attempt to get the symbols out of the way, so that we could look at the subject. As Mr. Russell himself remarks, a commutative law in an algebra is simply a negative statement to the effect that the order of the symbols is not symbolic, does not symbolize anything. And so it even comes about that logical form itself is supposed, by some good people, to be forms of

words, and we are told that formal reasoning, without considering the subject-matter, is impossible—they not perceiving that the only form of any significance whatever for validity in deduction is the form of the subject-matter itself, its general structural and systematic character. One whole school of the very newest logic is built up round this misapprehension. In short, the usual deductive expository arrangement has repeatedly been openly identified with logic, and tacitly identified with mathematics, yet it is after all only a mode of didactic exposition.

In these matters I should be at one with Mr. Bosanquet, if his criticism of the linear arrangement of propositional implications was simply a movement towards subject-matter and away from arrangements of symbols. But Mr. Bosanquet's reform is also a movement away from specific analysis and particulars, and towards totalities and the Absolute. Even here I can follow a little way. The synoptic general survey is, as knowledge, not to be condemned. It is true, moreover, that the movement of thought actually is from wholes to parts and back again to a new survey of the whole, and not from step to step of well-ordered deduction. Deductions all in a row look well in a book, but they are not the way we think. Deduction is a sort of check on thinking, like "casting out the nines" in arithmetic. Is, then, all thinking inductive? That depends on what you mean by induction. Induction is a term that has become almost useless through being used in two quite contrasted senses. On the one hand, it is applied to the collecting of cases of a particular specified kind. On the other hand it is applied to the whole process by which a realm of knowledge is "whipped into shape." Books on induction soon get over the latter subject: the inductions are not merely collections of cases, they are analyses of cases, and deductions come in to help the process on, including Mill's methods, which are as deductive as syllogisms, and—. But just here some one interrupts, and declares that all that is sound in this induction is deduction; the rest is "lucky guesses." Inductive inference does not exist. But it would be equally fair, or unfair and rather more enlightening, to declare that deduction is nonexistent. All thinking is inductive in this sense, that it is not an inference from next to next on a level of noetic perfection; it is a rising from one noetic plane to another, from the popular to the scientific, from the vague to the explicit. It is the strength of the Bosanquet-Bradley logic that they have made this fact central in their account of knowledge.

Thought seldom proceeds by "linear inference" from the known to the unknown. It proceeds by a jump to a general gross impression, and then it comes down to the more specific details. These details were not in the general impression, but they were suggested by

it. Then there ought to be verification of details by active contact with new observations, and then a remodeling of the general impression—and thereafter the process starts all over again. This movement series has been described as: “preliminary induction, deduction, verification” (Mill), or “hypothesis, deduction, verification” (Jevons and others), or “problem, placing the problem, adducing a new suggestion, deduction, verification” (Dewey). The hypothesis is, however, too often taken to be simply a proposition from which “deductions” are made. But far more fatal is the regular omission of the final step, that of “remolding” the hypothesis in the light of a total synoptic survey of the evidence. There are “the starting place, the operation, and the modification of the starting place.” Here Bosanquet and Bradley have made a most essential contribution. They have told us indeed “how we think.” The chief limitation of their account of the inductive movement of thought towards a higher knowledge plane is that they leave out the *induction*, in the older sense of the term—that is, the empirical aspect. Looking upon the process as an internal dialectic of coherence within thought, they slur over the empirical checks which actually knock a thought-process into shape by unexpected blows from without itself. Attention to these empirical checks it is the achievement of Professor Dewey’s “experimental” emphasis in logic to have kept before us—almost in spite of Dewey himself, for Dewey leans back from “dualism” until he, also, nearly falls over into the internal dialectic account of “experience.” With this qualification, Mr. Bosanquet’s exposition of inductive thinking, in his larger *Logic*, seems to me, when all is said, the soundest and most illuminating account of thinking as it actually occurs that can anywhere be found in those repositories of tradition, perversion, and untruth, the standard treatises on logic.

As I turn from these all too crabbed criticisms of mine to the delightful limpid flow of Mr. R. F. A. Hoernlé’s ingratiating appreciation of Mr. Bosanquet’s new volume (in the *Philosophical Review*, January, 1921), and find myself agreeing, after a fashion, with almost everything there said, I ask myself whether it is not wrong so to emphasize the disagreements. But no. Much that we say will sound the same to careless ears. But the exact nuance is everything. The difference in the turn of a phrase really indicates that deep in our hearts there is disagreement, philosophies that are worlds apart. We shall agree that the Atlantic Ocean is salt and two plus two equals four. But when we ask ourselves what we mean even by these statements, the divergence will begin to appear. As for the opinions I have been expounding, I should not wish to characterize the relation of mind and the world as a “dualism.”

But the order of nature and the order of knowledge do impress me as observably, empirically different; and I can not grant that the world-evolution is more than in part evolution of thought-content as such. How we think is not generally how things come to be. I agree with Mr. Bosanquet concerning much of his account of the order of knowledge. I agree that the insight into isolated matter of fact is less good as knowledge than the insight, where attainable, into a system of which that fact is but a corollary. I should apply this conclusion to that unfortunate illustration—the insight that “two straight lines can not enclose a space”—which Mr. Bosanquet so often repeats. Mr. Russell was too optimistic when he said that only at the Universities of Llassa and Oxford is this now taken for self-evident truth! I have no insight which I can trust which tells me whether in physical space two straight lines can or can not enclose an area. Whether or no they can is a question whose solution depends on the total evidence for the physical reality of some system chosen from one or the other of two great groups of geometrical systems. But this evidence itself it not merely knowledge of systems. Knowledge of systems can not of itself tell us what is empirically real. Rationalism can open and spread out before us the possibilities; only empiricism can select the true one. I realize that much which to my present knowledge now seems contingent may, on deeper view, be revealed as a necessary element in a wide system; and far be it from me to say that all necessity is in mathematics, all contingency in ethics or art. But still I do believe that deeper yet, in the order of nature itself, in the very heart of things, we come upon contingency again. The world must ever be in some sense brute fact, given datum. Certain systems are real; certain other consistent and possible systems are not. This theory, precisely because it does not identify the real with either the necessary or the ideal, makes, it seems to me, an idealism possible, a love of and aim after the perfect, that is truer to the name idealism than is Mr. Bosanquet’s attitude of acceptance and surrender before the Absolute Fact.

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The Control of Ideals. H. B. VAN WESEP. New York: Alfred A. Knopf. 1920. Pp. 154.

The author attempts to lay his finger on the cause of modern wars, and finds it partly in the multiplication of ideals that accompanies the growth of civilization and their consequent clash, and partly in the deification of these ideals, the belief that they are over-individual and God-made. The solution of the problem he feels

does not lie in reducing the number of ideals (that would be retrogression) but in recognizing that ideals are man-made. Ideals are man-made and should be men's servants, not men's masters. The spirit of sacrifice to ideals has become a mania and threatens to destroy civilization by the very agency that should promote it. Since this mania results from belief in the divinity of ideals, we may be assured that as soon as this belief is dissipated society will be able to harmonize its ideals rationally. By this means wars will be prevented, for the wars of conquest have long been over and modern wars are those due only to the conflict of ideals fanatically worshipped. At bottom, the book is an appeal to society to apply the principles of thoroughgoing individualistic ethics, and the tone of the book is summed up in this sentence, "The individual is the proper unit in ethics because it is the individual alone that is self-conscious" (p. 135).

The book is clearly written in an easy fluent style, entirely free from technicalities and the involved economic issues of present-day ethics. It is eminently suited for a popular audience.

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Pessimism. BENJAMIN F. LACY. Philadelphia: J. B. Lippincott Co. 1920. Pp. 94.

There are various ways of approaching pessimism—metaphysical, psychological, literary. But Mr. Lacy's treatment does not seem to follow definitely any of these ways, nor does his book impress one as having hewn out a new way. There are distinctions made of no great originality—as, for instance, that between the spiritual and empirical pessimist—and there are extended characterizations of the pessimist type, but nothing that is striking or seems to add to the literature of the subject. As desultory conversation by the fireplace such discussions are interesting, but somehow one expects more in a printed book.

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JOURNALS AND NEW BOOKS

REVUE DE METAPHYSIQUE ET DE MORALE. Octobre-Décembre, 1920. *La volonté, la liberté et la certitude d'après Renouvier* (pp. 395-421) (*Suite et fin*): O. HAMELIN.—In a previous article M. Hamelin had shown how volition as conceived in the terms of Renouvier's phenomenalist psychology is by definition

free. "A motivated action is a free action." Here he gives the evidence Renouvier finds for the actual existence of volition. It is not only moral action which is essentially motivated; an examination of the various grades of belief will show that "a motive is at the root of any judgment." The practical reason is the root of all reason. *La théorie de la relativité et sa signification* (pp. 423-469): E. GUILLAUME. — An interpretation intelligible only to those who can follow the mathematical formulation of recent developments in physics. *Introduction à la sociologie* (pp. 471-494) (*A suivre*): J. WILBOIS. — An outline of a method for social science, suggesting a division of the subject-matter, and leading up to a conception of cause in human society, which will be developed in a later article. *La naissance et la mort* (pp. 495-515): G. SIMÉON. — "Philosophic reflection reveals to us that since time has no existence except through the spirit, the conceptions of a beginning and an end are inapplicable to spiritual activity." *Études Critiques. Quelques livres de philosophie italienne* (pp. 517-536): J. F. RENAULT. — Interesting analyses of the following recent books: P. F. Orestano's *Prologomena to the science of good and evil*; M. F. Sarlo's *Psychology and Philosophy*, and his *Philosophers of our time*; M. G. Saitta's *The thought of Vincent Gioberti*; G. Gentile's *Origins of contemporary philosophy in Italy*; M. Aliotta's *The new realism in England and America*, and his *Eternal warfare and the drama of existence*; M. E. Troilo's *The conflagration, an inquiry into the history of the spirit of to-day*. This recent Italian philosophy is characterized by a platonism in reaction against positivism, and by the traditional juridical spirit of Italian thought. These writers seem to preserve some of Plato's glow and color as well as the familiar metaphysics of platonism. It is claimed that they can make even the American and English platonists of to-day, our neo-realists, seem not only interesting, but entrancing! *Tables des Matières* (pp. 537-541). Index to the 1920 numbers of the *Revue. Supplément*. Reviews of the following: *Œuvres de Maine de Biran* published by Pierre Tisserand; O. Hamelin, *Le système d'Aristote*; Raoul Mourgue, *Étude critique sur l'évolution des idées relatives à la nature des hallucinations vraies*; Albert Kaploun, *Psychologie générale tirée de l'étude du rêve*; Dr. Toulouse, *Comment utiliser la guerre pour faire le monde nouveau*; René Hubert, *Les interprétations de la guerre*; R. Lespieau, *Le molécule chimique*; Floris Delattre, *La pensée de S. H. Newman*; Benjamin Kidd, *La science de puissance*; Benjamin Kidd, *Social Evolution*; H. Wildon Carr, *The philosophy of Benedetto Croce*; *The problem of art and history*; Benedetto Croce, *Nuovi Saggi di Estetica*; Th. Ziehen, *Lehrbuch der Logik auf positivistischer*

Grundlage mit Berücksichtigung der Geschichte der Logik; L. E. J. Brouwer, *Wiskunde waarheid werkelijkheid*. *Nécrologie: Zeuthen*.

Boyer, Charles. *L'Idée de vérité dans la philosophie de Saint Augustin*. Paris: Gabriel Beauchesne. 1921. Pp. 272. 16 fr.

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Vol. I. Ancient and Patristic. 1912. Pp. xx + 388.

Vol. II. Mediaeval and Early Modern Period. 1921. Pp. 394.

Vol. III Modern Psychology. 1921. Pp. 322.

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NOTES AND NEWS.

A complete report of the history, methods and results of psychological examining in the United States Army has been recently published in the *Memoirs of the National Academy of Sciences*, Volume 15, 1921. The report is edited by the Lieut. Col. Robert M. Yerkes, Chief of the Division of Psychology, as an official document for the Surgeon General of the Army. It consists of three parts bound in a single volume. Part I, presenting the official history of the development of the service and its activities during the war, is supplemented by reproductions of all of the printed materials devised and used in conducting psychological examinations. Part II includes a complete account of the preparation of methods, their characteristics, and their evaluations as practical procedures. In Part III the results of examining are summarized. The entire report may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at \$1.75 per copy. It appears in quarto size under the title *Psychological Examining in the United States Army*, and includes vi + 890 pages.

Professor A. J. Schneeweiss of the University of Pittsburgh has had his name changed to Snow. The article by him which appears in this issue is accordingly signed with the latter name.

THE JOURNAL OF PHILOSOPHY

GENETICISM AS A HEURISTIC PRINCIPLE IN PSYCHOLOGY¹

ATTENTION was called in 1914 by Professor Cohen² to the errors inherent in the use of the historical methods of explanation commonly employed in certain fields of inquiry. To him there appear to be in the popular philosophy of the day two more or less axiomatic principles. One is that nothing is explicable except in terms of its history; the other is that value is independent of history. These two principles, though dwelling together in modern thought in apparent peace, are essentially antagonistic. They are indeed the lineal descendants of the ancient feudists, the rationalists and the empiricists. The use of the historical method rests as a heuristic principle upon an assumption which is essentially rationalistic, its fundamental dogma being that the past completely determines the present. This seems true in spite of the fact that the method arose in part at least as a protest against rationalism. Spencer, whose philosophy is a wholesale application of the historical method, calls attention³ to the disposition of his time to make use of it in lieu of the current doctrines of creationism.

Although Cohen proposes to concern himself with mental sciences he leaves psychology out of account, taking up in order Economics, Jurisprudence, Politics, Ethics, Religion and Philosophy, pointing out the errors that arise from the exclusive dependence on historical methods in these several fields. To "subordinate economic science to economic history," for example, has turned out to be misleading. It has resulted in a movement, under the leadership of Carl Bücher, back to psychology and anthropology. In jurisprudence the revolt of Eichhorn and Savigny from older methods and their emphasis on the supreme importance of history has in turn led to an even graver danger. It has been, in Cohen's opinion, a "positive hindrance to any improvement or enlargement of the law—precisely because those who think of new problems exclusively in terms of historical analogies get tangled up in their own traces and think that what has been must remain forever." The

¹ Presidential address delivered before the Southern Society for Philosophy and Psychology, Macon, Ga., March 26, 1921.

² "History versus Value," this JOURNAL, Vol. XI, pp. 701-716.

³ *Principles of Psychology*, I, 466.

error of historicism in politics rests on the assumption that *Die Weltgeschichte ist das Weltgericht*, that if the facts of history are allowed to tell their own story they will show the suicidal character of injustice and the ultimate triumph of right, a doctrine which is, in his opinion, brutal and immoral. In religion historicism has had an important effect. But even here, where tradition means much, while the orthodox are tracing out apostolic succession, *etc.*, the heterodox are carrying us back to phallic worship and the life of primitive man. So that we are confused to know in terms of which group we are to make our judgments. In philosophy Cohen holds that historicism breaks down since that subject is not a branch of archæology, and since the truth of a philosophic doctrine does not rest upon historical sequence. Many of the great constructive minds in philosophy have been unacquainted with their predecessors, so that it would be impossible to say that the past in this field determines the present.

It seems to have escaped Cohen's notice that there are in psychology, as he says concerning these other sciences, "brave souls who have taken the historical faith quite seriously and have actually attempted to make the historical point of view replace or supersede all independent method or standpoint of evaluation." The purpose of the present paper is to extend his criticism to psychology and to show certain seemingly erroneous implications in its use in this field. We have had no end of controversy concerning the validity of introspectionism and behaviorism, but it seems that the validity of historicism as a method of psychological inquiry has been taken more or less for granted. The doctrine of recapitulation, to be sure, has been successfully called in question, but while recapitulation may be considered an outgrowth of historicism the two conceptions are distinct.

Historicism in psychology is better known as geneticism. Professor Baldwin in his Dictionary defines the genetic method as "the explanation of things, for purpose of instruction, according to their genesis or manner of coming into being." D. J. Hill⁴ says, "The genetic method, then, consists in referring every fact to its place in the series to which it belongs. An alleged fact is entirely meaningless until it is restored to its serial relation. When thus restored, it is seen to be a part of the real order, the outgrowth of its own antecedents, and it is thus unified with other facts as part of a continuous whole."

Although frequent use is made of geneticism by psychologists of all schools, no one has championed the method itself as has Dr. G. Stanley Hall. Because of his acknowledged leadership in this field

⁴ *Genetic Philosophy*, p. 14.

it seemed fair to illustrate the use of the method by reference to certain of his well known writings. The gist of his position is to be found in a monograph,⁵ the title of which is "A Glance at the Phyletic Background of Genetic Psychology." At the outset he asserts the reality of time as a sort of fundamental principle from which the genetic method must proceed, thus falling perhaps unconsciously into rationalistic usages, from which, as we have seen, the genetic method in general was supposed to have revolted. Be that as it may, the psychologists, he says, who would undertake to explain mental reactions in terms of what goes on in the laboratory are intellectually myopic. As well might a geologist attempt to understand the fossils and strata of the earth by mere chemical analysis of them. The psychologists must adopt the geologist's method, and acquire some of his time sense. There are layers, strata, "pubic beaches," and the like in the mind of man, which can only thus be made intelligible.

The genetic inquiry is not only pushed indefinitely backward in time but also downward, if we may so say, in the direction of the inanimate. The performances of radium, cyanogen, carbon, *etc.*, are reviewed in connection with a search, that is almost pre-Socratic in intent, for a *materia prima*. The behavior of metals under torsion, their fatigue, and recuperation are suggestive of vital processes. The action of crystals and foams shows the possibility of completing the genetic series, leaving no gap from top to bottom, if such a scheme of things may be said to have a top and a bottom. Matter in the genetic system must, of course, contain the promise and potency of all things. Hall thinks that "The secrets of the origin of soul are now more and more clearly seen to be bound up, if not identical, with those of the origin of life, and the beginnings of both stretch back ever farther in time and down the scale of simplicity so that their primordial germs must be coeval with the dawn of matter and with time itself. Although, as we know them in their present forms, they seem incommensurably different from the life of the physical universe, they are, in fact, products of an evolution that has proceeded by insensible gradations with *no rupture of identity*" (Italics mine).⁶

He further says that his own experiments with certain plants have convinced him that they show "a behavior that can hardly be entirely excluded from Psychology."⁷ Thus "the unity between plants and animals is fundamental and detailed, and just so far as psychology becomes a natural genetic science it will trace all

⁵ *American Journal of Psychology*, Vol. XIX, 1908, 149-212.

⁶ *Ibid.*, p. 168.

⁷ *Ibid.*, p. 186.

higher powers back to those we have in common with plants and the simplest animal forms, and vice versa, derive all the former from the latter."⁸

The genesis of consciousness and its place in the genetic series brings out this suggestion, whatever it may mean, which serves at least as an attempt to bridge a famous chasm: "What we call consciousness is derivable from the suddenness of the biometamorphosis with which new balances are attained and to the more complex and manifold changes that this involves in higher organisms which are susceptible to shock in a different way." It seems not only justifiable but necessary to bridge this chasm in the genetic series by some means, by a figure of speech *à la* Santayana, if by nothing else. Hall prefers "to defy the eurrent horror of anthropomorphism and to show a decent respect to continuity." "Only to speculative and monodeistic minds," says he, "can the question between some psychic rudiment and tropism be so put that we must cleave to the one and despise the other." This situation again illustrates the rationalism of the genetic method.

In facing such gaps as these in the genetic series it is interesting to note that the geneticist apparently cleaves to his conception of the continuity of things and despises the evidences for any rupture of identity even to the extent of accusing those who have respect for such evidences of being "speculative," or wedded to a system.

The logical upshot of geneticism must necessarily be that all vital phenomena are ultimately explicable in terms of mechanical laws. In fact, unless there is an "unruptured identity" throughout the genetic series the method is valueless, for otherwise, in tracing our phenomenon backward in time for purposes of explanation, it would disappear in our grasp. Hall at least does not shrink from the logical consequences of this necessity. He holds⁹ that "one day physiology, if not psychology itself, may be expressible in chemical formulæ."

This notion of continuity is found not only in genetic psychology but in the literature of psychology in general in the form of the ancient doctrine of essences, of things in themselves. The older terminology has been changed, but the idea may be found intact in the frequent statements in which mental processes, functions, *etc.*, are described as being "at bottom" so and so. "At bottom" may without violence to the intended meaning be translated as "*in esse.*" For instance, we find the suggestion that plant protoplasm is at bottom crystalline; that at bottom man is a vegetative being;¹⁰

⁸ *Ibid.*, p. 187.

⁹ *Ibid.*, p. 195.

¹⁰ *Ibid.*, p. 161.

that we can not know self in any "fundamental" way until we know protoplasm and the ameba; that "perhaps when we know why one thought or feeling is preferred to another it may some time be clear that it is 'at bottom' because it favors cerebral or general nutrition."¹¹

So much for a statement of the genetic method and the hypothesis upon which it proceeds. It is understood that no legitimate objection can be made to the study of the natural history of mind, or to the use of the genetic method in the examination of such a history. A purely methodological issue is here raised in the form of an objection against the assumption, wherever it may occur, that the genetic "explanation" is exhaustively explanatory, and that its conclusions are always valid. Wherever this assumption is made, the fundamental error of it is apparently the one to which Cohen has directed our attention in the fields of inquiry already alluded to, namely, the error arising from a confusion of history with valuation. Against this indiscriminating use of the genetic method in psychological inquiry I beg to submit the following objections:

(1) In the first place the demand for the continuity of essence is a logical demand. Thanks to Bergson we now have the audacity to question the validity of such a demand. We can recognize it as but another of those "musts" from which science broke away in comparatively recent times. But like a Freudian dream it escapes the censorship of our minds because it is disguised in more acceptable terminology. In this manner it returns to play a part in the thinking of the day. The very words of this logical obsession, however, will at times betray its presence, as when John Burroughs, the naturalist, says, "No extrinsic condition could have made a man out of a worm, the man scheme must have been inherent in the worm." Both the notion of the "man scheme" and the authority of the "must" are clearly rationalistic. Mr. Burroughs seems here to be espousing the genetic method as the only alternative to creationism. This illustrates the fact that the biological sciences, psychology included, are ready to accept all the consequences of one of two ancient alternatives when the other has been discarded. But we may not play both fast and loose with our logic, for if it demands that the man-scheme must be found in the worm, would it not also demand that it must be found in those primordial conditions, whatever they may have been, from which the worm itself came, and so on in indefinite regression, for, as Stewart puts it,¹² "the only possible issue of such determinism would be to say for example that the whole social and moral progress of the human race was implic-

¹¹ *Ibid.*, p. 191.

¹² *Questions of the Day in Philosophy*, p. 155.

itly present in that molten mass which scientists tell us constituted our earth at the stages when the heat was too intense to allow the presence of life." William James¹³ and Lloyd Morgan¹⁴ have recognized the same crisis of reasoning.

The genietic hypothesis seems to assume that whatever aspect of human experience we may desire to examine is to be found, if not in the nebula, at least in some form of existence that is lower in the scale than the point in the phyletic series at which the phenomenon is being examined. We are familiar with the assumption in comparative psychology that the differences between the mind of man and that of the lower orders is one of degree and not of kind, *i.e.*, it is a matter of more or less, the essences, if you will, remaining the same. The higher is assumed to be present in the lower, and all that subsequent evolution can add amounts to mere accretions of secondary or non-essential characteristics. The use of the notion of differences in kind and differences in degree, if followed persistently, can be made to lead to queer results. It sometimes would appear that the only differences that exist between things at all are reducible to differences in degree, if one is allowed to choose the aspect from which they are to be compared. For instance, land animals and aquatic animals may from some viewpoints be considered different in kind, and yet, if the part which water plays in the life economy of each be taken as the point of comparison (surely a fair one in this case), the difference becomes one of degree when one thinks of the proportion of water in the living cells of the bodies of so-called land animals. Again, sea-water and human blood surely could be regarded as different in kind from some points of view. Yet Professor Macallum has suggested that the blood in the human body is but a modified form of the water of the Pre-Cambrian seas. The distinction represents one of those snares into which logic will betray itself when pushed into finalities. What except the relentless urge of logic could drive us to demand a psychology of lettuce or to imagine the phlegmatic temperament of cabbage? Our minds seem held by the conviction that what is must always have been, that nothing new can come into existence. This conviction is one of the subtle perversions of the laws of cause and effect and of the conservation of energy. The dictum that every effect must have an exactly commensurate cause is a different thing from saying that every evolutionary antecedent is identical in essence with its successor. "The intellect," says Bergson, "does not admit the unforeseeable. It rejects all creation. That definite antecedents bring forth a definite consequent, calcu-

¹³ *Psychology*, Vol. I, p. 149.

¹⁴ *Introduction to Comparative Psychology*, Ch. XVIII.

lable as a definite function of them, is what satisfies our intellect."

This, it would seem, is the logical demand that has constrained us to build a line of biological essences, and has led us in our study of mental phenomena to pursue them beyond their vanishing point and to evaluate them in terms of that which, from certain aspects at least, they are not. It is the same logical demand that has misled us into confusing historical continuity with historical identity. The spirit of present-day thinking does not seem to insist so much that evolution shall, as logically conceived, run smoothly. What if it does not do so? Will not the processes of life go on and the sun continue to rise without the crowing of a logical chanticleer? Some of the most fundamental hypotheses in the physical sciences are altogether illogical. It is difficult to understand why psychologists should be expected to have so much more sensitive consciences about logical consistency than other scientists. One *can* see why they above all others should be able to appreciate the fallibility of logic.

(2) Again it is to be observed in criticism of the genetic method that in spite of its insistence on the introduction of the time element into our explanations of mental phenomena, when it comes to saying what a certain thing really is, the time factor is reduced to the zero point, and some arbitrarily chosen cross-section of the life history of it is selected and this is declared to be the point at which the phenomenon in question is to be found in its ultimately real form. In the genetic procedure the usual method is to strip the phenomenon to be studied of all supposed evolutionary accretions, or addenda, of all characteristics that have not endured through a satisfactory lapse of time. To the geneticist the old is the real, the quintessential. Before he is ready to say that any phenomenon is "at bottom," or "nothing but" so and so, he must continue the process of elimination of all qualities of a more or less complex or evolved kind to an indeterminate stopping point. If the process were indefinitely continued he would in the end arrive, as we have just pointed out, at a meaningless core of material substances and forces which would be embarrassing in the hands of a psychologist if this were all that he had left. Psychology would at such a point, and indeed at all points, be compelled to foreclose in favor of mechanics. But in order to avoid bankruptcy of this kind the geneticist chooses a stopping point at which he locates the genesis of the presumably essential characteristics. It is very necessary to know, and for the geneticist to declare, by what right these points are selected, and by what criteria the choices are determined. Is not the geneticist compelled to abandon his geneticism in making use of such starting points? Woodbridge¹⁵ points out that history

¹⁵ *Purpose of History*, p. 63.

can have neither ending nor beginning. In tracing beginnings he says we "stop only because we do not care to go farther, or lack the means to do so, and not because we can say that we have found a first beginning with no antecedents before it."

Hence we see one of the chief difficulties in explaining things genetically or in terms of history, for, since nothing can be stated in terms of its entire history the geneticist is compelled to resort to cross sectional explanation, which he starts out by condemning. Now, if, as Woodbridge points out, there are no stages, stations, stops or beginnings and endings in history and if, as certain psychologists hold, there is "no rupture of identity" in the phyletic series, it would seem sound to claim the superiority of the more accessible present cross-section as the best cross-section for scientific investigation, as indeed the introspectionists are supposed to assume. The examination of phenomena in their simplest forms has its obvious advantages, whether these forms can be produced artificially under experimental control or can be found in nature. But this admission does not justify the conclusion, so often found implicit in psychological thinking, that the simplest forms contain all that is real and essential in the complex. Aristotle says,¹⁶ "The nature of anything, *e.g.*, of a man, a horse, or a house, may be defined to be its condition when the process of its production is complete." One can not see how this is any less sound than the geneticist's method of "defining things in terms of their origins," for after all, who is competent to judge between the several contending cross-sections? There are cross-sections, it must be remembered, not only on the time scale, but also on the scale of simplicity.

(3) In the third place, history is one thing, evaluation another. In calling attention to this point years ago William James¹⁷ said that the logic of the times recognized "two orders of inquiry concerning anything." The answer to the first inquiry is an existential judgment or proposition. The answer to the second is a proposition of value. Most important of all he calls our attention to the principle that "neither judgment can be deduced immediately from the other." "They proceed," he says, "from diverse intellectual preoccupations, and the mind combines them only by making them first separately, and then adding them together." The use in psychology of the terms "at bottom," "nothing but," "in essence," and the like, generally discloses an instance of immediate deduction of value from history. That a widespread use is made of this deduction would scarcely admit of doubt. Woodbridge says,¹⁸

¹⁶ *Politics*, I, ii, Weldon's trans.

¹⁷ *Varieties of Religious Experiences*, p. 4.

¹⁸ *Loc. cit.*

“ Relieved of the necessity of explaining continuity, philosophers, biologists, historians, and even students of language, literature, and the arts have been too frequently content to let the fact of continuity do all the explaining that needs to be done. To discover the historical origins and trace the descent of ideas, institutions, customs, and forms of life, have been for many the exclusive and sufficient occupation to the neglect of experimental science and with the consequent failure to make us very much wiser in our attempts to control the intricate factors of human living. If we would appreciate our own morals and religion we are often advised to consider primitive man and his institutions. If we would evaluate marriage or property, we are often directed to study remote ancestors. And this practical advice has sometimes taken the form of metaphysics. If we wish to know the nature of things or to appraise their worth, we are told to contemplate some primitive cosmic stuff from which everything has been derived. Thus man and all the varied panorama of the world vanish backward into the nebula, and life disappears into the impulse to live.”

The axiomatic principle to which Cohen called our attention, namely, that “ nothing is explicable except in terms of its history,” becomes quite easily transformed in practise into its much more radical converse that everything is explicable in terms of its history. From this the step is easy to the assumption that history exhausts the possibilities of knowledge, to the identification of history with valuation. Evolution, according to this conception, would have to be pictured as an infinitely long chain with equality signs written between each link. It is not to the links but to the equality sign that objection is meant to be raised.

That a confusion of history and valuation occurs even in the commonplace affairs of life is indicated by the ordinary experience that a prophet is not without honor save in his native land, the reason being that his neighbors know his origin and history, and hence feel that by that fact they know his worth. The question, “ Is not this the carpenter’s son?” illustrates this common illusion of knowledge. The feeling of a sense of insecurity in the presence of the strange, the novel, is dispelled by a knowledge of origins and history, which in turn gives way to a comfortable feeling of security and mastery, a feeling which doubtless accounts for this illusion and which completely satisfies certain types of inquiry, leaving no curiosity for further investigation. It is a significant observation that the study of social origins sometimes begets a disregard for the authority and value of social conventions. This could not be if history were not assumed to be the equivalent of valuation. While evolutionary science has wrought an emancipation of the human

mind and has effected a disillusionment of man concerning his origin, it has bequeathed him an illusion and a sophistication which are no better grounded in fact than his former conceptions and which are probably less valuable socially.

(4) Turning to the question of fact we find still another criticism against the validity of the genetic method. If we lay aside the notion of essences, it does not appear to be true that natural phenomena have maintained an unruptured continuity throughout their history. This may be shown in morphological changes that are supposed to have taken place in the progress of evolution. The suggestion is made¹⁹ that the thymus gland, the mouth, the olfactory organs and certain parts of the ear may have evolved from the gill slits. Now if it be granted that these or similar things have occurred in nature the genetic hypothesis becomes at once discredited. For once you attempt to define or explain a certain structure by it you will have to reduce that structure back at least to a point at which it has completely changed both its form and its function. Such a reduction would be of doubtful explanatory value, except in so far as it would add the item of knowledge that a certain step occurred in the genetic series. Now, if we mean by explanation just that, then geneticism is exhaustively explanatory, but when we have chosen to adopt such an interpretation of what shall be meant by explanation, are we not in that very act using valuation, which by hypothesis is inconsistent with the genetic method of explanation?

Psychologists have never hesitated to adduce such facts as these, sometimes in seeming disregard of their bearing upon the method which they were employing—the identification of the smile, by Spencer I believe, with the act of opening the mouth to receive food, the tracing of will back to the same food-seeking act by Hall,²⁰ the reduction of the process of laughter back to the shaking of the sides to rid the creature's skin of stinging insects. And so all the elements of human experience become explained by or identified with their genetic forebears.

In no realm is this criticism of fact against the genetic method more effective than in that of social phenomena. The *raison d'être*, the structure, and the function and purpose of institutions may change from age to age, and yet they may show unbroken continuity. This sort of change would admit of many illustrations.

In certain classes of phenomena it is to be admitted of course that history affords the most important available data. It is doubtless true that the early development of the genetic method took place in the treatment of matters of this kind. Hill²¹ illustrates this

¹⁹ Partridge: *Genetic Philosophy and Education*, p. 29.

²⁰ *Loc. cit.*, p. 191.

²¹ *Genetic Philosophy*, pp. 14–15.

use by supposing that an archeologist should find a bronze axe in a mound of shells. It is obvious at once that this instrument was made by man, and that it belongs to a certain stage of human culture. But he says if we desire to go further we can only follow the genetic method. As soon as we abandon this method, "all scientific thought stops short and all other thought is nugatory."

In archeology the question of chief consideration is, admittedly, the location of the phenomenon, at its proper point in the historical series. Most of all one wants to know to what period of history a certain custom or thing belongs in order to relate it to its particular time setting. In the case of these phenomena which do not function in the present time setting, history has its maximum importance as compared with valuation. But even in such cases as that of the bronze axe the historian may be so exclusively historical in the handling of his data that ideas which had been concrete and vital in their time setting may grow into meaningless abstractions. The proper sort of history of philosophy, for example, says Balz,²² should help to "free philosophic thought from over-respect for the past, to provoke a more forward-looking manner of thinking, and make history an aid and not an obstacle in the pursuit of wisdom." This plea is a pertinent one for psychology. For example, the phenomenon of agarophobia, the fear of open places, may be made more intelligible by reference to the dangers incurred by our ancestors through exposure to enemies in open spaces. In this instance our only question and our only interest may be, whence did it come, how did it arise? In other words, since it now has no *raison d'être*, in order to be able to make it intelligible we must carry it back to the point of time at which it did have significance, meaning, value. And it is in terms of its one-time value after all that we seek its explanation. Merely to run it back in the temporal order can not of itself satisfy all inquiry.

(5) There seems to be an identical case against those who, for purposes of explanation, reduce natural phenomena down the scale of simplicity without the employment of the time factor. Geneticism, as we have seen, assumes, and indeed must assume, the validity of both methods. So long as we arrive "at bottom" the geneticist seems content. The attempt in physiology to express vital processes in terms of lower, simpler mechanical action has, we are told,²³ not met with success. Haldane²⁴ says, "The new physiology is biological physiology--not bio-physics or bio-chemistry. The attempt to analyze living organisms into physical and chemical mechanism is

²² This JOURNAL, Vol. XVI, 41.

²³ McDougall: *Body and Mind*, p. 253.

²⁴ *Science*, Nov. 3, 1916.

probably the most colossal failure in the whole history of modern science. It is a failure, not, as its present defenders suggest, because the facts we know are too few, but because the facts we already know are inconsistent with the mechanistic theory."

This latter method might be called analyticism. Geneticism and analyticism have certain features in common. They both seek to explain the complex in terms of the simple. In analyticism the phenomenon is reduced to its lowest terms, whereas in geneticism the endeavor is made to find it thus reduced in nature, or else to deduce what must have been its simplest form at some distant point of time. Both geneticism and analyticism assume the explicability of the complex in terms of the simple. An example of this assumption can be found in *The Text Book of Psychology* by Titchener (p. 238). He says, "experiences which may be analyzed into organic sensations are complexes of organic sensations, and nothing more or less." This is clearly another case of "at bottom" explanation. The underlying assumption may be considered to be the basis and background of introspectionism. It is also doubtless the logical demand back of the contention, in the now somewhat quiescent imageless-thought controversy, that all that there is in mental processes must reveal itself in the structural elements of mental content.

As with geneticism, we may confine ourselves to a search for the elemental components of mental processes, and we may assume at the outset that we shall mean by explanation precisely that and nothing more. No one questions the right of a scientist to prescribe the conditions of his own inquiry. But it must be borne in mind that an inquiry thus prescribed can not pretend to answer all the demands of all sorts of explanations that could arise. The knowledge that water is composed of hydrogen and oxygen might be sufficient for a chemist, but not for a gardener. While Herbert Spencer's method is primarily that of the geneticist, attention has been called to the fact that his sociology suffered from use of the analytic method in that he centered attention on the units of the social groups to the disregard of their unity. Both geneticism and analyticism are after all only heuristic principles, and as such are useful only in so far as they yield desired results.

(6) In conclusion let it be understood that the main contention of this paper is that fact and value should be kept distinct in scientific treatment. Whether science should take account of value is another question, and one on which there is a difference of opinion. According to Titchener²⁵ "science deals, not with values, but with facts. There is no good or bad, sick or well, useful or useless, in

²⁵ *A Beginner's Psychology*, p. 1.

science," says he. On the other hand we have the view of Everett, who says²⁶ that "the distinction . . . is no longer one between descriptive sciences of what is, and non-descriptive sciences of what is not, but what ought to be; it is a distinction between descriptive sciences of facts indifferent in value, and descriptive sciences of what may be called value-facts." Kantor takes the position²⁷ that "the facts of science are evaluations of phenomena," and that psychology should be treated as a "science of critical evaluation." It is interesting to note that the first sentence of Titchener's *Beginner's Psychology*, to which reference has been made, is this: "We live in a world of values." The text is presumably proposing to examine the human instrument, the mind, by which this "world of values" gets understood and by means of which vital adjustments are made to it. To separate thought from its object, to treat mind in complete disregard of its enviroing world is a species of psychological dualism against which psychologists should not need to be warned.

Psychology has ceased to occupy itself exclusively with structural analysis of the content of consciousness. The chief inquiry at the present has reference to the functional efficiency of mental components revealed by such analyses. Indeed, in the theoretical study of mental tests and especially in practical psychology, we are recognizing and are endeavoring to differentiate "the good and the bad, the sick and the well, the useful and the useless." In short we have crossed the Rubicon and are busy in the domain of psychological values. Hence any confusion of fact and value will have consequences for the future of psychology. To resolve psychology into the natural history of mind and to make no distinction between history and value, after the fashion of the geneticists, would be as foreign to the purposes of functional psychology as structural analysis itself has been.

JOHN M. FLETCHER.

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THE ANNUAL MEETING OF THE WESTERN DIVISION OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

A LARGE attendance, with a full programme of thoughtful and interesting papers and discussions, and a spirit of that rare fellowship possible to those devoted in common to philosophical pursuits, conspired to make distinctly successful the meeting at the University of Chicago on March 25 and 26.

²⁶ *Moral Values*, p. 16.

²⁷ "Psychology as a Science of Critical Evaluation," *Psychol. Rev.*, Vol. XXV, No. 1, pp. 1-15.

The morning session of the first day centered about ethical problems; in the afternoon, the papers were psychological in character; the evening was set aside for the annual dinner and for the address of the president. Discussing the topic, "Modern Idealism and the Logos Teaching," President E. L. Hinman contended that, consistently developed, modern idealism issues in a view essentially identical with the logos doctrine of Christianity. He analyzed more particularly the thought of Bosanquet and of Radhakrishnan with a view to showing that their appraisals of theism are incompatible with the deeper motives of their philosophical systems. The logical implications of modern idealism, it was argued, are not pantheistic but theistic.

On Saturday two sessions were held. At the one there were papers on miscellaneous topics. In the afternoon the members organized themselves into three prearranged groups in order to discuss informally subjects selected and announced, with bibliographies, by persons vested with the responsibility of leadership. The one group had as its topic, "The Existence and Nature of the Psychical, with Especial Reference to the Standpoint of Pragmatism." Very unfortunately, the appointed leader, Professor Arthur O. Lovejoy, had some days previously been unexpectedly called to California. However, the bibliography he had announced included titles by Professors Bode and Mead and, as these gentlemen were present, they were prevailed upon to open the discussion. The latter revolved about the following theses advanced by Professor Bode: (1) Conscious behavior differs from pure mechanism in that it represents a control by the future. This it does because it involves recognition, namely, a control by objects possessing meaning—meaning, however, which, in this its primary manifestation, coalesces with the object. (2) In situations of stress and strain, when there are competing meanings, the latter may become detached from the object. The object may then drop from consideration and the meanings come to function independently as instruments of control. (3) Conscious behavior is unique in that activities are set up for securing a more adequate or satisfactory stimulus, a goal which gives to them an experimental character. (4) Those traits of experience which consist of fairly definite and fixed qualities constitute the objects of experience, while those traits which are unsettled, undetermined, incomplete, vague or blurred constitute the psychical.

Under the leadership of Professor E. B. McGilvary, a second group discussed the bearing upon metaphysics of the theory of relativity, especially as this appears in Whitehead's two books *Principles of Natural Knowledge* and *The Concept of Nature*. Pro-

fessor McGilvary contended that the theory affords no warrant for maintaining that physical objects undergo a change in length when set in motion. This and other paradoxes disappear when we remember that the theory operates with different time systems. It is, therefore, the theory of time that is primarily affected by the doctrine of relativity. Though mere sequence relations (or what Whitehead calls "the passage of Nature") remain the same as in the classical view, the acceptance of relativity would compel one to give up the notion that there is only one system of simultaneities. There are innumerable such systems, each forming a "time-system." As the "length" of any line is the distance between its endpoints at any *one* time, as measured by some standard length at the *same* time, and as what is "one time" in the line of relative motion in one time-system is not "one time" in any other, differences in the "length" of any segment of any line parallel to the line of relative motion are inevitable. This explanation of the paradox about the "change in the length of lines" led to the query why the leader sought the relativity in the time rather than in the space system; also whether he did not reflect a bias against abandoning an absolute. Einstein takes the velocity of light as a kind of absolute and Whitehead, from a different approach, takes "slabs of nature" as the basis of his account of simultaneities. Professor McGilvary maintained that not interest in any sort of absolute, but escape from contradiction was his concern. The members of the group showed wide differences of opinion as to whether an acceptance of Einstein's theory of relativity necessitates any radical metaphysical revisions.

The third group concerned itself with the question, "Are Volitions Independent of Instinct." The leader, Professor J. D. Stoops, introduced the subject by reference to the points of difference between the theories of McDougall and of Woodworth. He sought to show that in the main the former's views are tenable, whereas Woodworth's distinctive tenets destroy the possibility of any real theory of volition. The drift of ensuing discussion indicated a general opinion that Woodworth's modifications of McDougall's theory are unnecessary and are in themselves unsatisfactory.

At the business meeting, the Division went on record as favoring a joint meeting with the Eastern Division, preferably at Cornell University, early in September next. Final decisions, however, were left to the committee which has had the matter in hand. The Executive Committee was empowered with the determination of the time and the place of the next annual meeting of the Division. The Treasurer reported the possession of forty war savings stamps, in

addition to \$9.08 in cash and checks, and balances of \$71.52 and of \$92.57, respectively, in the savings and the checking bank accounts.

In recognition of her interest in the work of the Division and in the development of philosophical thought in America, Mrs. Mary Hegeler Carus was elected to honorary membership in the Division. The following persons were added to the regular membership: Messrs. William A. Croley, G. A. Deglman, Denton L. Geyer, Frazer Hood, S. F. MacLennan, George A. Mulfinger, Edward Z. Rowell, C. F. Tausch.

The officers elected for the coming year were: *President*, E. S. Ames; *Vice-President*, David Swenson; *Secretary-Treasurer*, G. A. Tawney.

Papers read at the meeting may be summarized as follows:

Standard of Moral Conduct: G. A. DEGLMAN.

I. The necessity of a moral standard by means of which human actions may be harmonized. Human life of necessity must be dominated by principles. How can these principles be determined?

II. The direction of the moral control of human activity may be discovered by examining into the *ends* of human actions. Human actions are those which proceed from man as man under the guidance of reason. By "end" is meant not the consequences of the action, but the object naturally desired or aimed at.

Observation shows that everything which moves tends to the attainment of an end. The character of the movement is determined by the end. Hence actions also receive their character from the end which they subserve.

However, in a dependent series of actions there must be an *ultimate end*. The series of means and end considered in Moral Science is a dependent series. It must consequently finish somewhere with an end which is final, which is desired for its own sake. This ultimate end must, furthermore, be common to all men. All intermediate ends must be directed, either implicitly or explicitly, towards it.

III. This *ultimate end* is twofold: Objective and subjective. The ultimate *objective* end is the object ultimately desired. The *subjective* ultimate end is the possession of this object. We are considering here the ultimate objective end.

Can this objective end be determined? The final end of man must necessarily be an end which fully satisfies the highest natural capacity of man. This thought leads us logically to the admission of the Supreme Good, which is not an abstraction, but a personal being—God.

IV. Having established the final end of human action, we next

inquire into the *standard* by which we may judge whether or no human actions are directed to this final end.

Such a standard is necessary. A standard, in general, is a test of anything. A moral standard is a test of moral good and moral evil. Our inquiry is concerned with the *primary* or *basic standard*, not with any derivative standards. The nature and conditions of such a standard—it must be absolutely true and reliable, stable and unchangeable, universal, and practicable.

V. *The moral standard specified.* It must be the link between human action and the ultimate end. A man tends to the ultimate natural end when he tends to the immediate natural end of his being as man—as a rational being. Man's rational nature as such, with all its essential relations to the entire world of being—to himself, to fellowman, to human society, to God—is the primary standard of moral conduct.

Ethical Subjectivism: F. C. SHARP.

On foundations laid down by Hume, but not hitherto completely elaborated, this paper attempts to enumerate the fundamental types of moral judgment, to present a criterion for distinguishing between the valid and the invalid, and through these means to establish the existence of a single code valid for the entire race. When the plain man applies the adjective "right" to an intention or purpose, he means that it is one which would be approved by an impartial observer, in the sense of one who had abstracted from the relations of the action to his own personal interests, and in general from its accidental relationship to himself in every way whatever. A judgment conforming to this criterion is "correct" or valid. It has its source in what may be called an impersonal desire for good as such. The fact that when the layman finds any two of his judgments inconsistent ("contradictory") he unhesitatingly recognizes that one of them must be invalid ("false") shows that "right" means that which is the expression of a consistent ideal. But consistency is only persistency in the use of a principle, or "identity of spirit through a variety of measures." It follows that if the impartial desire for the realization of good is the source of some of our valid judgments, it must be the source of all. In the face, then, of the actual variety of moral judgments it is possible to assert the existence of one universally valid code, that which follows from a consistent application of the impartial desire for good as such.

Human Nature: H. B. ALEXANDER.

Human Nature, especially in those of its aspects which have a social or ethical implication, possesses a form or character, univer-

sal in all human beings who are properly men. This is recognized in the traditional definition of man as a "rational" animal; for what is essentially distinctive of man is his rational nature. This is the key to all purposive conduct and hence to all humane forms of experience. There is not, however, but a single set of rational or purposive forms: reasonableness in conduct varies with age, and one may indeed say that the essentially humane life is one which shows a progress of interests through a lifetime. Furthermore in civilized societies interests are developed governing purposes which lead beyond the individual experience of men's lives, taken in severalty, and this in two directions: (1) in the formation of impersonal modes of judgment, "cold reason," which are of importance in all societies, and are the sole justification of democratic forms of polity; and (2) in the gradual engrossing of a man in his "work" which becomes an end more important than his individual life, and hence an end of prime social significance. Civilization consists essentially in the development of a society in which these two forms become paramount.

Mind and the Subconscious: C. E. CORY.

There is no unconscious mind. There are, however, mental processes unknown to the primary self. In case of dissociation conscious centers may be formed capable of highly reflected thought. The writing of Mrs. Curran shows the possibilities of such subconscious activity. Here we have not only remarkable memory but creative thought of a high order. The facts in this case force us to make larger concessions to the subconscious than have hitherto seemed necessary. And these facts may also throw much light upon some of the works of genius.

Are Instincts Data or Hypotheses? E. E. FARIS.

The old question of the nature of instincts and their existence in the human being has been discussed for a long time and is still a live issue. William James went to much pains to demonstrate the existence of instincts in the human being and described more than thirty. Angell accepted the general position but rejected some of the instincts which James included. McDougall suggested a criterion and reduced the number to fifteen. Rivers and Trotter have four. In Thomas's older work there are two. Freud has only one. The object of this paper is to call attention to the fact that instincts are always overlaid with experience and are therefore never the subjects of direct observation, except in the infant. Instincts are hypotheses to explain facts, and as such may have value, but they are not facts of observation. Moreover, they are the result of the

genetic method which involves a logical error: namely, that of jumping from problem to solution without passing through intermediate stages. It would be better to confine attention to wishes, desires, and purposes, as Thomas has done in the "Polish Peasant."

Significance from the Standpoint of Behaviorism: G. H. MEAD.

(Abstract not available.)

The Fate of Pragmatism: C. F. TAEUSCH.

The two major "wings" of pragmatism are approximating respectively the older philosophical schools, realism and idealism.

The emphasis on the kinesthetic mode of experience and control is common to both realism and pragmatism, and an important factor in each. If the pragmatist insists that this control operates only mediately through the sensation congeries, he must choose between a naive realism or pluralistic subjectivism. If the control operates directly through the kinesthetic sense, then he becomes a monistic subjectivist. This emphasis on kinesthesia, even as worked out in the doctrine of empathy, is a reaction against the prominence hitherto played in classical idealism and modern science by the elements of the visual category.

Pluralism, the first derivative of pragmatism, involves the discrepancy of ends, which in turn will not admit of the control which is so important to the pragmatist. This is particularly true in connection with the time-worn problem of evil, in the esthetic situation in tragedy, in logical implication; in practical affairs, witness the inability to "make Germany pay," and the failure of any rearrangement of our present social and economic order to provide proper living conditions for all people. We can, in short, experience situations over which we have no control, indeed which derive much of their value because they can not be controlled. James and Bergson, in their treatment of the traditional problem of the freedom of the will, ultimately fall back on the power to sustain and to generate and direct imagery respectively—a doctrine only partially, if at all, tenable. Philosophy, if it is to continue to be an all-comprehensive discipline, can not restrict itself to such elements as are subject to "reconstruction"; "participation" is every bit as important a concept.

Pluralism in the Theory of Value: A. P. BROGAN.

Writers on ethics and the theory of value have tended to be either objective monists or subjective pluralists. A quite different doctrine may be found in a combination of pluralism with objectivism.

That values are plural can be shown not only by their empirical variety but also by the fact that the fundamental value universal is betterness.

We have no proof that there is a limit (best or worst) to the value series. No such supreme value is needed to show the objectivity of value. Nor have we any justification for demanding that values must be measured by any single formula such as hedonism gives. Monistic theories are false, and even if they were true they would not prove objectivism.

But pluralism does not prove subjectivism. Plurality and relationship do not prove epistemological relativity. The diversity and conflicts among our valuations can be explained without assuming subjectivism. So pluralism is compatible with objectivism.

The development of an objective pluralism will be more complicated than the extremely simple objective monisms or subjective pluralisms. But it will be more adapted to scientific treatment.

A Philosophical Survey of Culture: G. D. WALCOTT.

The paper presents some of the main features of a companion course to the one on "The World of To-day" which the writer described at the last annual meeting. The course aims to give a kind of cross-sectional view of social evolution, based upon recent historical investigations. After considering the economic, political, moral and religious aspects of primitive life, both savage and barbarous, attention is turned to a comparative study of civilizations, both ancient non-European and European. In connection with the latter, consideration is given to the change in political thought represented by the Constitution of Cleisthenes, and it is pointed out that modern nations, in so far as they are qualitatively and not merely chronologically modern, are based upon the same fundamental principle of citizenship. Stress is laid on the view, obtained in part from Paulsen, that modern Europe and America represent a new civilization, comparable with the civilizations of the past, but really only beginning upon a career, the maximum achievements of which no one may at present predict with certainty. European is contrasted with Europeanistic, meaning by the latter some phases of South American life, and of British Egypt and India, the coast cities of China, and Japan in part. Such a course makes possible an appreciation of present-day life, oftentimes obscured by limited intensive studies and the traditional philosophic interpretations.

A Redefinition of the Field of Philosophy: E. D. STARBUCK.

This paper is a mere corollary to the one published in the current March number of the *Journal of Religion*. The latter dis-

cussion argues that the most vitalizing hold on truth or reality and the most significant judgments of value are in terms of the imagery connected with the "intimate sensory processes" rather than that of the "defining sensory processes," that is, the spatial and relational functions to which the so-called "higher" senses are ad-dicted. Philosophy needs such a redefinition of its field and problems as will allow the immediacy values conditioned by the intimate senses as fundamental a place as have those connected with the life of cognition. Ethics, esthetics and the science of religion should be made to feel at home in the philosophical household as legitimate children and not as orphans and foundlings. Such a redefinition might be this: *philosophy is the expression, in definite form, for the sake of intercommunication, of the highest values*; and by "highest" one should mean most highly organized and integrated, most significant and satisfying and giving promise of abiding worth.

These values will fall naturally into three classes, the first two conditioned heavily by the defining functions and the third by the intimate sensory and imaginal processes: (a) metaphysics (Being), (b) epistemology (Knowledge), and (c) worth and value as such (Meaning).

The full recognition of the immediacy values and their psychological setting will not only give ethics, esthetics and the science of religion a "ground-floor" place in philosophy, but will help "solve" the problems of being and knowledge. It will certainly cut under many of the deadlocks and impassés created by the conceptual and judgmental processes.

The history of philosophy has been chronically fond of tracing out simply the record of system-building. It may well become more hospitable to the wisdom of poets, such as Browning and Tennyson, to the religious writers as set forth in the Upanishads and the Sermon on the Mount and to the message of art as expounded by Wagner and Rodin. Emerson, Marcus Aurelius and Confucius have as rightful place in a course in Ethics as have Bentham, Shaftesbury and Martineau.

Philosophy as a whole might gain by feeding a little less on the "chopped straw" (James) of conceptual systems and a little more on the bread of life.

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PHILOSOPHY AS WORK AND PLAY

IN Miss Parkhurst's sprightly and interesting account of the recent meeting of the Eastern Division of the Philosophical Association, I find a somewhat distorted report of the distinction

that I drew between two classes of philosophical problems. That she—and, very likely, others—should have failed to get my exact point is of no consequence. But the point itself seems to me worth serious attention.

My contention was that all philosophy can be divided into two parts, the one containing those problems that have appreciable practical bearings, the other containing those whose solution would make no or slight difference to practise. That there are problems of this latter class I am convinced; among them I place the epistemological problem which seven of us have co-operated in analyzing in the volume, *Essays in Critical Realism*, recently published. We think that our solution is the right one. But so far as I can see, the acceptance of our solution rather than that of, say, the neo-realistic sextet, would have no practical bearing upon anybody's conduct—except, of course, in the specific matter of affecting how he should thereafter write or teach upon that particular subject.

Now the devotion to such impractical problems I called "play," in the broad sense of the term. That is, it is an activity that exists not as a means to something else, but for its own sake. It is its own excuse for being, like the greater part of our artistic activity, our games and sports, and much of what we call "culture." Metaphysics is not only a "genteel" substitute for chess, it is a glorious, exhilarating substitute. Focusing our minds as it does upon the cosmos, its origin or nature or destiny, or some aspect of our situation in it, it deals with real rather than with artificial problems, and so is, for those qualified to pursue it, in the words of another member of our association, "the king of indoor sports."

The fact that the discussion—or even the solution—of these problems is not doing the *work* of the world is no objection to it. Not only when the millennium comes, but right now, it is well for us to play as much as is consistent with the more serious duties which demand our attention. Our hope should be to increase from generation to generation the amount of time and energy that may be left over from the work of life for sheer enjoyment. Whether we find that enjoyment in metaphysics or in music or in the higher mathematics or in history or in travel, is of relatively minor importance. These, and many other such, are legitimate satisfactions, worthy of being cultivated.

But I can not help feeling that it is yet too soon in the world's history for us to dally too exclusively with play. There are millions of men and women suffering or dying for lack of the prevalence of reason in the ordering of human life. The student of philosophy is in a position to help. He can formulate and teach insights that will have their part in bringing order out of confusion, in replacing

injustice and cruelty by justice and happiness. It is by no means calling the philosopher aside from his historic function to ask him to consider these more practically urgent problems. On the contrary, the historic philosophers have often been of very great service in this way.

Professor Meeklin is right, of course, in saying that the philosopher is not (*qua* philosopher) a social reformer. He usually must leave to others the actual application of his ideas. He is a thinker, teacher, writer. But his analyses and generalizations and explanations and analogies may be very valuable to the social reformer—if he devotes a considerable part of his thought to the consideration of the moral conflicts and confusions of his day. Professor Meeklin stressed this practical value of philosophy, and I am not aware of any disagreement between us.

But when Miss Parkhurst puts into my mouth the utterance that "the contemplation of ideas is justifiable in that it satisfies a harmless human impulse," she forgets my exact wording and the context of the statement. I was speaking of the interest in problems that have inappreciable practical bearing. There is, of course, just as much scope for the contemplation of ideas in the wide field of problems that have practical bearing. I would have the intellect harnessed up in the service of life—more students of philosophy devoting themselves to the more *fruitful* forms of intellectual activity. Heaven knows we need intellectual activity; but we need it at the points where it will change something. This is not "anti-intellectualism" in the technical sense; it is pragmatism only in the very loose sense of that term in which it means a predominating interest in what bears upon practise.

Professor Pratt declared that the function of philosophy is to foster the life of the spirit. Well and good. But what is the life of the spirit? Is it a retreat from the world, a self-indulgent dreaming, a building of cosmic air-castles, a contemplation of ideas *in vacuo*? Or is it a dedication of our minds and hearts and wills to ideas and ideals that will help to make reason prevail in the practical exigencies of life?

There is room for disagreement, of course, as to the degree in which any given philosophical problem is practical. Personally, I believe that many of the most *interesting* problems of philosophy have slight logical bearing upon conduct. Are relations external or internal? Is there a realistic universe? Was there a First Cause? Is there a God? Is determinism or indeterminism true? Are we immortal? We should like to know, we enjoy speculating on these problems; it is worth while, if only to rid our minds of a lot of rubbish that commonly passes for knowledge. But whatever

answers we give to such questions, our interests and duties remain essentially the same.

My plea was that we spare more time from the discussion of these fascinating and time-honored problems for the investigation of our actual human interests, and the means to their realization. There is at present so much darkness here, so much prejudice, so much obscuring passion, men and women are floundering so piteously and making such a mess of their lives, that their Macedonian cry should indeed meet with response from philosophy. There is work here for everybody. The rational ordering of human life on earth is a task that needs the economist, the statesman, the sociologist, and a hundred others; but it needs the philosopher too.

Keep on, then, metaphysicians, epistemologists, historians, North Pole explorers, and all the rest, in your attempts to gratify your insatiable curiosity. We too are eager to know what can be known in these far-off fields. But do not assume airs, as if you were the priests and guardians of man's highest instincts. There are, after all, more urgent affairs to be attended to just now. And the greatest philosopher, like the greatest poet, is he whose vision is like a pillar of fire, showing the way in which they shall walk to those who are bearing the brunt of the battle, doing the work of the world.

DURANT DRAKE

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REVIEWS AND ABSTRACTS OF LITERATURE

Pascal. KARL BORNHAUSEN. Basel: Verlag von Friedrich Reinhardt. 1920. Pp. xi + 286.

Professor Bornhausen, formerly of Marburg, now of Breslau, has already made notable contributions to Pascal research (*Die Ethik Pascals*, 1907). His present work is the "first historical-critical biography of Pascal in German." It was written almost wholly while the author was a prisoner of war in France.

Bornhausen divides Pascal's life into three periods: to the death of his father 1651, between the world and the new birth 1651-1655, and the new life 1655-1662. At the appropriate chronological points appear translations of the more important minor writings of Pascal, based largely on a critical revision of Herber-Rohow's translation; but only a few lines are quoted from the *Provinciales* and the *Pensées*. While this method doubtless has a practical justification, the result is less than justice to the rich content of Pascal's masterpieces.

Some of the author's theses are briefly to be summarized as follows. The *Discours sur les passions de l'amour* is genuine, although it is possible to doubt it. Pascal owed nothing of importance to

Descartes in connection with the famous experiment to prove the pressure of the air. The treatise *De l'esprit géométrique* is not to be dated 1658 (as Brunschvieg), nor early in 1655 (as Strowski), but Sept.-Nov. 1654, prior to the ecstatic night of the second conversion, Nov. 23 (as Cassirer); if this dating be correct, it leads to a valuable addition to our knowledge of the intellectual antecedents of Pascal's conversion. Bornhausen subjects the so-called "amulet" to a searching and sympathetic analysis; its last three lines with their reference to "Total submission to Jesus Christ and to my director" he regards as genuine, but not a product of the experience of the conversion night.

Philosophically most significant is the treatment of Pascal's "*esprit de finesse*" and "*coeur*" (pp. 77, 250 ff.). Bornhausen undertakes to defend Pascal against the charge of being a theologian of feeling, or a dualist in whom heart and head are separated, as in Jacobi. The heart, which has reasons that the reason does not know, is not far different from what Descartes meant by intuition. Now, "for Descartes, intuition was an intellectual process, immediate perception of the intellect without the aid of judgment." Thus Pascal says that "the heart feels tridimensional space." To identify "heart" with "*Gefühlskraft*" is misleading. It is rather a source of spiritual certainty analogous to the method of the understanding. "What Rousseau later designates '*sentiment*,' what appears in Bergson and the modern nature-mysticism as intuition is much vaguer than what Pascal understands by '*coeur*!'" This interpretation of Pascal is sufficiently important to have been worthy of a fuller and more explicit discussion than it received.

The book gives a picture of the personality and life of Pascal that no student of the thought of the 17th century can well overlook.

EDGAR S. BRIGHTMAN

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Beauty and the Beast, an Essay in Evolutionary Æsthetic. STEWART A. McDOWALL. Cambridge University Press. 1920. Pp. 93.

This book is written with the intention of making an emendation to Croce's theory of esthetic. Croce's view is accepted on the whole, but Mr. McDowall feels that Croce's "intuition" is left unexplained with the consequence that Croce's whole theory and definition of beauty are left hanging in the air. Mr. McDowall undertakes to build a foundation for Croce's system, and he does this by postulating a personal God and explaining the intuition as the consciousness of relation ultimately with God. This consciousness of relation is Love. It has its origin in the sex instinct, but is not to be thought

explained by the sex instinct, since that would be committing the fallacy of considering things explained by their origin.

In the reviewer's opinion, Mr. McDowall's proposed amendment is hardly an improvement upon Croce's rounded theory. It savors of the missionary spirit, and there are some of us who prefer the unconverted pagan.

S. C. PEPPER.

UNIVERSITY OF CALIFORNIA.

JOURNALS AND NEW BOOKS

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NOTES AND NEWS

A mark of recent philosophy in the United States has been the growth of the interest in empirical accuracy. The following definitions of philosophy, culled from the examination papers of Sophomores, and communicated by a friend of the JOURNAL, show that the spirit of empiricism is making excellent progress:

Philosophy is an attempt to pierce the veil which philosophers have cast over the world.

Philosophy is a study of that which is not that which it seems to be.

Philosophy makes exquisite that which is implicit.

A meeting of the Aristotelian Society was held on July 4, Professor G. Dawes Hicks, Vice-President, in the chair. A paper entitled "On Arguing in a Circle," was presented by Dr. F. C. S. Schiller. A scientific system is essentially *partial*. Being constructed by selections and exclusions and relative to a purpose it contains no warrant for the postulation of any all-embracing system. Objections to a system can not be met by arguing within it. To meet a challenge it must obtain outside support. If it is to give satisfaction it must not close itself, but remain open to correction. The sciences are such systems and so escape the charge of circularity. An all-embracing system is not a valid ideal because inability to select would reduce it to chaos, while if logically complete it could be rejected as a whole. Also it is self-contradictory, for either it can be enlarged to satisfy objections and then it is not all-embracing or it can not be enlarged and then it argues in a circle. If it presupposes relativity to purpose, it can not reach absoluteness. The attempt to base inference on implication within an ideal system is no improvement on formal logic, but merely a half-way house to a complete surrender of the notion of "formal validity."

Professor J. W. Scott, of the University College, Cardiff, Wales, has been appointed Mills Lecturer in Philosophy at the University of California for the coming year. He will take the place of Professor G. P. Adams, who intends to spend his sabbatical year in England and France. Professor Adams has been invited to give a series of lectures on Social Philosophy at the Sorbonne.

THE JOURNAL OF PHILOSOPHY

THE NEED OF A NEW ENGLISH WORD TO EXPRESS RELATION IN LIVING NATURE

PART I

I

NATURAL bodies stand in different kinds of relation to one another. This is so obvious that it can not escape the notice of anybody. Indeed, the fact of its being before the face and eyes of every person all the time largely accounts for its so seldom getting reflective attention. That a telegraph pole set in the ground is differently related to the earth from what a growing tree is; that the relation between the crystals in a granite boulder are different from that between, say, a lichen growing on it and a hammer which may have been laid on it by a workman; and that a lady's finger is differently related to her hand from what her finger ring is to the finger on which she wears it, are all such commonplace facts that for ordinary purposes they neither get nor need special attention.

But the time comes, if one is bent upon knowing the world through and through, and of making the most possible of it, when these cursorily noticed different kinds of relation have to be closely examined.

Many different English words are used to designate relation between bodies: coordination, correlation, union, cooperation, conjunction, combination, interaction, interdependence, are some of the more common of these. And some aspects of the idea about what relation is have received great attention. For example, not many subjects have held a more important place in speculative philosophy. The subjectivistic idealism that has so dominated modern philosophy down to a few years ago has conceived relation to pertain fundamentally to the domain of judgment, the entire world being conceived as belonging to this domain. To present the argument advanced in support of this conception "would almost be," says J. M. Baldwin, "to write the history of metaphysical logic since the time of Kant."

But even in the logic and theory of knowledge now necessitated from recognizing the inadequacy of the Kantian system, relation has a prominent place. Says John Dewey, "relation is, directly or indirectly, the central thing in knowledge." Similarly, L. E. Hicks, the author of "Normal Logic or the Science of Order," writes: "It is questionable whether any sort of mental activity whatever can be

mentioned which does not involve relations" (this JOURNAL, July 15, 1920). And another writer, A. E. Avey ("The Present-Day Conceptions of Logic," *Phil. Rev.*, XXVIII, 4, p. 405), has defined logic as the science of relations.

It is a noteworthy and, it seems to me, highly significant fact, that although all the sciences into which the mind enters as subject matter have given much attention to the general problem of relation, and although the physical and biological sciences are so largely occupied with particular relations among the objects of nature, these latter sciences have considered but little the general or common nature of the various relations with which they deal.

From this standpoint, the great prominence into which one aspect of relation in physical nature, that, namely, known as relativity, has recently come, is peculiarly interesting.

The present study is concerned primarily with an aspect of relation in organic nature that is coming to be widely referred to under the term integration. I have used the term myself quite extensively, especially in *The Unity of the Organism*.

But experience and reflection, largely since *The Unity* was published, have led me to recognize that the word is used by different workers in different portions of that realm, with meanings or at least with implications that are sometimes strongly at variance with one another and rarely, if ever, with full justice to the phenomena to which they are applied. Because of these defects I have become impressed with the importance of subjecting the phenomena to careful examination with a view to a better understanding of them, and to a better way of utilizing and expressing them.

I shall specify one of the clearest, most important of these discrepancies in the use of the word integration.

The lexicon definitions of integration often contain the idea that disintegration is its antithesis or opposite. "Integration is the act of bringing or process of bringing together as parts of a whole, disintegration the act or process of separation into component parts." (*Dict. of Phil. and Psychol.*) Sometimes this idea is expressed inferentially rather than explicitly. Thus restoration or renewal are not infrequently given as definitive of integration, the clear implication being that destruction or disintegration had previously taken place.

It is not my purpose, of course, to contend that this meaning for integration is incorrect when a comprehensive definition of the word is being sought.

The point I would make is that when understood in this sense it is not only inadequate but is very misleading as frequently applied to living beings. For example, the assimilation of food by an organ-

ism is manifestly not a process of integration in the sense of restoring the tissues and organs by recombining the parts of the organism which had previously existed in a separated or disintegrated condition. Organic assimilation consists not only in bringing the food particles into connection with the organism's tissues and organs, but of transforming the particles from what they were *as food* into other particles now existing *as tissues and organs* of an organism, though it may be counted as integration when viewed as a process which opposes or counteracts disintegration.

Clearly, then, when we are dealing with some of the most distinctive of the relating and combining phenomena of living beings, if we apply the term integration to them it is greatly important that we recognize the necessity of giving it a meaning the opposite of which does not imply disintegration or destruction. Indeed, so important has it seemed to me latterly that relation in living beings of the sort now in mind be kept more clearly in view that I have given considerable time to searching for a word that would better express such relation than does integration.

The circumstance that *differentiation* is used to express the coming into existence of new parts—tissues, organs, *etc.*—in individual development, has been useful in this search. Hardly any word is more prominent in the general vocabulary of organic development than is this, and there is almost no ambiguity as to its meaning. But so obvious is it that such development consists not only in the coming on of new parts, but as well in the establishment of proper relations among them, that to-day no competent student would define individual development, or ontogeny, without bringing into the definition reference to the relating as well as to the producing of parts. And when a single word is used as the correlate of differentiation that word is very apt to be integration. Now the word integration has grown, as one readily sees, from another root than that from which differentiation takes its origin.

The Latin *gradior* upon which integration is founded has no other implication, it appears, than that of moving step by step as in walking, while *ferre*, the root part of differentiation, had as one of its original meanings, so the Latin lexicons inform us, that of bearing in the sense of producing, even to the producing of offspring by parents. This last meaning of the word gives it special fitness as a biological term, so vitally distinctive of life is production by birth and growth. To-day no phenomenon of living beings is regarded as adequately dealt with until it has been tried by the established principles of organic genesis. Manifestly, then, differentiation comes closer home, so to speak, as a name of developmental processes than

does integration. This being so, what we really need to express the relating aspect of development is a word which contains the *ferre* root of differentiation, as well as a prefix expressing the antithesis of the *dis* of differentiation. Now the prefix which most commends itself for this is *con*. But unfortunately the English language recognizes no combination of a derivative from *ferre* with the prefix *con*, which is homologous with differentiate. Conference presents the combination of course. But in common usage this has a very different meaning from a true antithesis of differentiate as a term of organic development. A conference between two or more persons is an incidental, even though planned meeting of these for a special purpose, and always implies their separation when the purpose for which they met has been accomplished. This is manifestly very different from the togetherness of the parts of an organism. A complete separation of such parts, as the members of a conference separate, means the death of one and all; whereas it means not even so much as an injury to the separated participants in a conference.

Conferentiate, the obvious developmental antithesis of *differentiate*, does not occur in any dictionary I have been able to consult. Yet this word with its derivatives seems to be exactly what the science of organic development needs to express the relational aspect of the process. Ontogeny could then be succinctly and concisely characterized as the *process of differentiation and conferentiation of the individual organism*. The clear implication would be that whatever the conditions and forces which bring into existence new parts of the organism, conditions and forces exactly corresponding to these, though in a sense opposite in character, must be operative in all development that is biologically organic. It would be a great misfortune were the word integration to get a secure place in the popular language of organic science, always having the implication that its antithesis is disintegration. But there is some danger of just this happening as I am convinced from several things which I have recently seen and heard.

The difference between integration and conferentiation may be still more sharply expressed by saying that integration is essentially a preservative, while conferentiation is not only preservative but is also constructive and progressive. The assimilation of food by the tissues is integrative, though, as previously pointed out, not conferentiative. This illustration is apt enough so far as concerns assimilation in a *full grown* organism. When, however, a *growing* organism is considered, one may ask whether assimilation is then integrative or conferentiative. The answer is that even assimilation during growth is fundamentally different from the process for which the term con-

ferentiation is suggested. For one thing this difference is seen in the fact that assimilation results in the *complete transformation* of the food material into the growing tissue, organ, etc.; whereas the conferentiative process never results in the complete transformation or loss of identity of either of the interacting bodies. There is a reciprocity of action and effect in conferentiation that is absent in assimilation.

The coining of words I look upon as justifiable only under very urgent demands. But it appears to me the situation here indicated constitutes such a demand. I have, consequently, decided to use the word *conferentiate* and its derivatives, conferentiation, conferentiated, etc.

II

With these reflections as a base of operations, we may now proceed to examine in some detail the group of relational phenomena, the generalized name for which I am proposing the new word *conferentiation*.

The examination will be facilitated by noticing at the outset the limits within which the relation between organic bodies results in recognizable influence upon each other of the bodies concerned. Those limits obviously are, for one thing, the slightest recognizable influence at one extreme, and the greatest at the other.

Attending first to the side of minimum influence, let us take some instance in which the relation between two organic bodies has as little influence upon them both as any we know. Consider, for example, a banana plant in Hawaii and an Esquimau in Labrador. That these stand in *some sort* of relation to each other, no person who thinks carefully will question for a moment. That both may be visited by one and the same traveler and described in terms familiar to great numbers of persons using the same language as that used by the traveler, surely constitutes a kind of relation. But yet—and this is the main point in this example—the relation here is so remote that its influence upon the two organisms as they now exist and have existed during their entire lives is practically nil. It is negligible, as we say. Probably no one could discover that either would have been in the slightest degree different from what it is had the other never existed. The working naturalist who deals in any way with either one will be justified in wholly ignoring, so far as his actual investigation is concerned, the possibility that the other may have influenced the one he is studying.

Nevertheless, as a thoroughgoing naturalist, he can not wholly ignore such possibility. For instance, what about the law of univer-

sal gravitation? If, as this law says, every particle of matter in the universe attracts every other particle, then surely the Labradorian Esquimau can not escape the gravitational influence of the Hawaiian banana plant; and vice versa. What the practical naturalist does and does perfectly justifiably, is to *assume* that the present status of his science, botany or anthropology, as the case may be, does not require him, indeed does not permit him, to pay any attention to the gravitational relations between these two bodies.

Such reflections give an important cue for procedure in carrying out the proposed examination. This cue indicates that it will be advantageous to go to inanimate nature for criteria of relational influence within animate nature. This is so partly because organic science has not yet any such exact tests of the influence exerted by living bodies upon one another when they are far apart, as inorganic science has through its knowledge of, for example, that influence known as gravitation. This knowledge, as all educated persons know, puts into the hands of scientists tests of the gravitational influence of bodies, both animate and inanimate, upon one another which are readily applicable at any time, and are easily statable in both qualitative and quantitative language.

Notice now what comes to light when such tests are applied to the gravitational influence of, say, the heavenly bodies upon one another. It is one of the commonest of commonplaces of natural knowledge since Newton, that the whole state of nature, both earthly and heavenly, is dependent upon this influence—that the “*state of nature*” is an “*order of nature*” just because of it.

So profound, indeed, is the influence that we can not picture, even in imagination, with any degree of clearness what the state of nature would be were the influence to cease. It almost seems as though without it nature itself could not exist. So here is a kind of relation in which the related bodies though far apart, many of them enormously far apart, yet influence one another very profoundly, at least so far as their “*movements in space*,” as we say, are concerned.

But does the influence stop with its effect upon the movement of the bodies in space? Certainly not. The ocean tides come forward as an unimpeachable witness to the great influence upon a portion at least of the structure of one body, the earth, due to its relation with other distant bodies of comparable size. And here we come upon another striking result of applying the tests for relational influence now possessed by science: not the ocean merely—the portion of the earth which at present is most susceptible of being moved somewhat independently of the rest—but all its parts, no matter how solid, are also moved with a slight degree of independence of the

rest, by this same relational influence. The earth tides, in other words, now being detected and measured, bear witness to a slight measure of independent movement of all parts of the earth under the relational influence called gravitation. The entire earth body suffers deformation to a minute extent from its gravitational relation with moon, sun, and, in theory at least, all other heavenly bodies. *This deformation may be looked upon as the price which the earth pays in terms of its individuality for being held and guided in its individual career within the general order of nature.*

But here comes a point of major significance for the study we are making: although the tides of the earth constitute something of an impairment, so to speak, of its bodily form and structure, this is not enough to constitute a real injury to it or even to obscure its identifiability in the least. Although ordinary geography must, and does, take notice of ocean tides, especially along certain coasts where the rise and fall and flow of water are excessive owing to peculiar land conformations, no one thinks of the contemporaneous earth as anything else than itself, because of, or even as essentially altered by, the tidal movements of either its fluid or solid constituents. So is it, I say, with the earth of the present era. As to the effects of such movements through geologic and astronomic time, that is quite another matter, but one which this very general examination of natural relation does not require us to notice further.

So much by way of illustration of relational influence upon natural bodies where such influence, though fundamentally determinative of the very existence of the bodies, yet affects their individuality to only a slight extent—to an extent so slight as not to constitute any impairment of their identifiability.

Now let us turn to an example of the opposite extreme of relational influence. And here again inanimate nature furnishes the most striking and best known examples. They come from that kind of relation between bodies known as chemical.

An instance which well exemplifies the principles involved is familiarly at hand in the "chemical" relation between the two bodies (more frequently called substances in such cases), sodium and chlorine. As is known to every one who has done any practical work in elementary chemistry, sodium is a white metal having a silvery luster. At ordinary temperatures it has the consistency of wax, but at 20° below zero, Centigrade, it is quite hard and very ductile. It melts at about 95°, appearing then as a liquid resembling mercury, and at 742° it boils and vaporizes, the vapor having a "peculiar purple color" when seen in quantity by transmitted light. Under proper conditions it takes on the crystalline form, the

crystals belonging to the quadratic axial system, their shape being acute octohedral. It is slightly lighter than water so that it floats when thrown on cold water, but then undergoes rapid dissolution.

The other body, chlorine, is a gas at ordinary temperature and pressure, but with a little lowering of either temperature or pressure or both combined, it becomes a yellow liquid, having a specific gravity of 1.33. Although transparent, chlorine has a greenish-yellow color and when in small quantity has an odor resembling seaweed. But when in large quantity its smell is extremely offensive and suffocating and is unlike that of any other known substance. As to weight, it exceeds that of ordinary air about two and a half times.¹

Now the relation between bodies which we call chemical produces such profound influence upon the bodies concerned that often, indeed usually, not a single one of their original attributes remains after the interaction is complete. The individuality of each entirely disappears. Or, otherwise stated, so far as concerns the portions of the bodies actually participating in the reaction, and so far as concerns our original knowledge of them, both are gone absolutely—are destroyed—by their action upon each other, and in place of them a third body, common table salt in the example chosen, wholly different as to identifying attributes from either of the originals, has come into existence. The identity of the interacting bodies is entirely lost instead of being only very slightly modified as in the case of the astronomically related bodies.

Nor can we, consistently, even with a purpose so non-chemical as this examination, neglect to notice one feature about the new body,

¹ The partial inventory of the attributes of these two bodies is taken essentially from the *Treatise on Chemistry* by Roscoe and Schorlemmer. I must avail myself of this opportunity for calling attention to what, from the standpoint of the mental technique of natural knowledge, is a rather serious defect in many text books of chemistry. This is in the failure of their authors to put down, explicitly, at the beginning of the treatment of each chemical substance, enough of its defining attributes to establish firmly in the student's mind an irreducible minimum of the foundation of all our knowledge of the substances. To the experiences of a working chemist it seems quite useless to hark back constantly to the elementary description of the substances with which he deals, so little do many of the attributes enter as such into his operations and calculations. But once one recognizes fully the tendency of the human mind to wander off into unsubstantial abstraction, and sees the dire consequences which such wanderings have had in the history of human knowledge, he will be duly impressed with the importance of so grounding the neophytes of science in the indispensables of observational knowledge that they shall never become the victims of speculation, the objective foundations of which have been torn out and cast aside.

I am quite of the opinion that even the ordained priests of science sometimes substitute the bodiless creations of their own minds for the stones of nature at critical places in the temples they build.

table salt (sodium chloride), which has been produced by the interaction between the old bodies, the sodium and the chlorine; the new body differs from both the old ones in such a way as to make it quite impossible to tell which, if either, of the originals, was the cause of the attributes of the new body. For instance, is the pure white of the salt caused by the yellowish-green of the chlorine; or by the "peculiar purple" of the sodium vapor; or by both operating together; or by neither of these, but by something else about either sodium or chlorine or both? Again, is the particular crystal form of the salt, belonging to the regular or cubic system, caused by the crystal form of the sodium, this being said to crystallize in the very different octohedral form belonging to the quadratic system? To the practical chemist questions of this sort are likely to be taken as indicating an ignorance of modern chemical ideas that is worse than puerile because being a show of knowledge that is mere pretense. No tyro in chemistry now imagines, he may say, that the properties of chemical compounds arise in any such way as is here implied. It is all a matter of molecules, atoms, electrons, *etc.*, we are told, the sensible, superficial attributes being in no wise causally concerned. But here is where the cogency of our questioning comes in. If we are really going to stand for the validity of observational knowledge—that is, are going to adhere to the principle that but for a substratum of such knowledge we could have no knowledge about any thing—then we are bound to recognize that no matter what order of constituents of the substances with which we deal, their sensible qualities, observed or unobserved, are what we must depend upon for anything intelligible we can possibly say about either chemical simples or chemical compounds, as to structure and function, or as to cause and effect. Consequently, so long as we are in almost total darkness concerning the details of how sensible qualities of constituent simples are related to sensible qualities of compounds, the only thing we can say, speaking of causes, is that the sensible qualities of the reacting simples *taken altogether*, somehow produce the sensible qualities of their derivative compound *taken altogether*. In the all but total absence of detailed observational knowledge of the causal factors in the transformations which characterize that relational influence known as chemical, we are obliged to be satisfied to describe the process and the results in *general*, or *mass*, *terms*. We are certain that an observed and measured quantity of chlorine taken in its entirety, and an observed and measured quantity of sodium also taken in its entirety, by acting upon each other under proper conditions, always produce an observable and equal quantity of "table salt." But there certainty as to causal details ends. Consequently, in so far as chem-

ists set aside the language of these observable facts and substitute therefor the language of the supposed molecular, atomic, and electronic processes involved, they are really setting aside an extremely important portion of certain knowledge and substituting for it uncertain, or speculative, knowledge.

The central point in these reflections for our purpose is that the only region of certainty in which we can move when dealing with relations of the sort known as chemical, is really a region of *wholes* much more than of the constituent parts of these wholes, exactly as was the case when dealing with gravitational relation. So far as the present state of science enables us to go, the only thing we are certain of as to the origin of the attributes of bodies produced chemically is that they result from the *combined action* of the attributes of the original or parent bodies.

Returning now to our quest for a criterion of relational influence in the living world, see what we have done toward setting limits of such influence generally. At one extreme (gravitational interaction) we have observed that although the influence of the relation on each of the bodies is profoundly determinative in certain respects, still the individuality and identifiability of the bodies are unimpaired.

At the other extreme (that of chemical interaction) the individuality and identity of the bodies are, on the contrary, wholly lost, the bodies having to all appearances completely fused or pooled their attributes in a new body.

But since natural science has now progressed so far as to be able to affirm with great positiveness that living beings are as truly subject as are not-living beings to the relational influences at both these extremes, it is justifiable to use the principles involved in the phenomena at these two extremes in formulating a criterion of relational influence that is not only organic but developmentally organic.

Taking due cognizance, now, of the unequivocal fact that every body known to us which either at this time is, or at any past time has been, truly living, has both undergone many and profound changes (growing, developing and adult functioning) and has maintained its individuality and identity, we are able to give a definition of organic relational influence so broad that it can be used in any examination of such influence as we may undertake, no matter into how much detail we may wish to go. Or, recalling our perception of the need for some such word as *conferentiation* with which to designate the general idea of such influence, we can now give a definition of the new word that will serve as the criterion we are after: *Conferentiation is that process in the living world which is the creative antithesis*

of differentiation. It consists fundamentally in the establishment of a relation among living bodies and parts of these such that while the bodies and parts maintain their individuality and identity, they undergo some measure of change. It is that relational action in living bodies which, while producing determinative changes in the bodies, at the same time leaves the individuality of these not only identifiable and unimpaired, but even improved relative to their former states.

This conception firmly grasped may serve as a touchstone, so it seems to me, for testing an enormous range of phenomena of living nature. Not only the whole sweep of purely physical structure and function (the provinces of morphology and physiology), but the great and vastly more vital and appealing realm of human life in its higher reaches (the provinces of psychology, sociology, politics, esthetics, religion, and the rest), can be illuminated by conscientiously applying the criterion. What results from such application in morphology and physiology is exhibited in some detail in Part II, *The Constructive Side of the Organismal Conception* of my book, *The Unity of the Organism*. Systematic application of the criterion lies beyond the purpose of this article. A few illustrations do, however, seem desirable. I shall give three, selecting them from widely separated provinces of the realm of life. These selections will appertain to the relation between parts in the *individual* of higher organisms, to the relation between individuals in the *primary organic groupings of higher organisms*, and to the relation between groups of individuals in *advanced societies* of the human species.

(To be continued)

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DR. RUML'S CRITICISM OF MENTAL TEST METHODS

IN a recent discussion of "the need for an examination of certain hypotheses of mental tests,"¹ Dr. Beardsley Ruml characterizes the results of mental tests as "astonishingly meager in theoretical value," laments the "unproductiveness of the field in propositions of fundamental significance," and criticizes investigators for their failure to find "generalizations of interpretative value in their own material."

This "fruitlessness of the mental test field" and the consequent "waste of scientific talent" is attributed to the persistence of habits of thinking about intelligence which are founded "not upon mani-

¹ This JOURNAL, Vol. XVII, pp. 57-61.

festations of intelligence as we commonly experience them, but upon derivative facts which are the results of measurement by mental tests." "These derivative facts," Dr. Ruml states, "are subject to fundamental bias due to the nature of the terms in which the results of mental test performance have been expressed, and due to the type analysis which our limited and frequently misused statistical technique makes possible." In particular the author specifies as questionable three assumptions into which investigators have been led by a misuse of the derivative facts afforded by mental tests: (1) The assumption that general intelligence can be expressed as a linear or one-dimensional function; (2) the assumption of rectilinear regressions between test performance and general intelligence; and (3) the assumption of a static intelligence level that "does not vary from time to time or from place to place."

1. As to the linearity of general intelligence, it may be questioned whether any one has assumed linearity in the sense in which Dr. Ruml seems to use the term; *i.e.*, in the sense that all intellectual processes are fundamentally of one kind, or in the sense that the intellectual differences among people are adequately expressed simply in terms of more or less of this one hypothetical unitary trait.

No one will dispute Dr. Ruml's statement that Henry may be inferior to Henrietta in certain types of mental processes and superior to her in others, just as a tall man may be "larger" in the vertical dimension than a small man while at the same time "smaller" in the horizontal dimension. Of course we have no warrant for assuming *a priori* that the man who is larger in the vertical dimension is smaller in the horizontal. Quite the contrary, the most reasonable estimate would be one utilizing the positive correlation which exists between the two measurements. Dr. Ruml will admit that such estimates are better than random guesses, but of course a desirable procedure, when possible, is to take both measurements if both are needed in interpretation and if they are likely to differ widely. The hip height of a child is important in assigning seats, but if assignments are upon the basis of total height very little misplacement will result. We take no exception to Dr. Ruml's height-thickness illustration; it is simply a rather poor parallel to most mental situations, as the correlation between mental traits is more likely to resemble that between hip height and total height than that between height and thickness. Spearman could not have made out as good a case as he has for a "single mental function" if the usual correlation between mental traits were not high.

We would urge, along with the hundreds of others engaged in devising special mental tests, that various types of tests be used for

the measurement of various types of mental processes. We would also insist that after applying such tests we are justified in combining them into a single measure if that measure has richer interpretative value than the various measures taken separately. In appraising a mineral deposit, a mining engineer secures samples from various locations and builds up a single total estimate of the mine's value, expressed in terms of a linear dollar and cent scale, even though many different ores may be involved. For certain purposes, such as the buying of machinery, the detailed analysis is necessary. Concepts of aggregates do not preclude recognition of detail.

The Binet scale, for example, not only recognizes the qualitative differences of intelligence at the various levels, but is especially designed to bring into relief what Binet called the hierarchical nature of diverse intelligences.² These "diverse intelligences" range from sensorial intelligence up through perceptual intelligence and representative intelligence to abstract intelligence and judgment. While it is true that in one sense the Binet scale is not a linear measure, it does serve to indicate an individual's position with reference to this hierarchy, and the mental age scores which indicate such positions constitute a scale which, in a special sense, may be regarded as linear.

2. As to the second assumption which Dr. Ruml criticizes, the assumption of rectilinear regressions between intelligence and test performance, it is more nearly in accord with the facts to say that rectilinear regressions have been *found* than to say that they have been *assumed*. Certainly anything else than a reasonably rectilinear regression in mental tests is extraordinarily rare. For example, not a single regression sufficiently non-rectilinear to permit determination of its type was found by one of the authors (Dr. Kelley) in an extended treatment of the results of 22 different serial tests which were tried out with several groups of children and various kinds of criteria in connection with work on the National Intelligence Scale. Dr. Ruml has probably been influenced in his point of view by finding non-rectilinear relationships in trade testing. The building up of a technique for handling problems of this sort merely awaits the need for such. Dr. Ruml has a procedure which he has used for this purpose; one of the writers of this article is shortly to publish another, Charlier has another, and Pearson has several. The non-rectilinear relationships of trade test data are so easily accounted for upon the basis of the acquirement of very specific habits and trade information that they constitute no criticism of the assumption of rectilinearity in the general intelligence field. It is a mere question

² See especially *L'Année Psychologique*, 1905, Vol. 11, pp. 194-195.

of fact whether such relationships are common. Surely, with all the scatter diagrams which have been published by intelligence test investigators in the last ten years, it devolves upon the critic to point to specific situations where material error in conclusion has resulted from the assumption of rectilinearity. The writers do not doubt that there are such, but the really astonishing fact is that they are so few. We of course would urge along with Dr. Rumel that tests for rectilinearity be more commonly resorted to.

3. To the third assumption, that the intelligence level is static, Dr. Rumel opposes the dogmatic assertion that "we know our general mental adaptability to new problems" varies markedly from time to time and from place to place. Perhaps Dr. Rumel "knows" this by intuition, and if so his position can not be questioned by argument. Or has he simply replaced one assumption by another more gratuitous?

In regard to the more fundamental aspect of the entire problem, we would call attention to the fact that the ultimate value of an hypothesis does not depend upon its absolute correctness. On the contrary, some of the most fruitful hypotheses ever given to science have later been shown to be only approximations. Newton formulated a mathematical statement to express the space and force relationships between two masses. The statement has, however, been more than merely interpretative of the specific phenomena in connection with which it was first formulated. It has been tried in new fields—inter-stellar and inter-molecular masses and distances. It has been applied to a sub-molecular matter the very existence of which could not have been apprehended by Newton. What if Newton's laws have broken down? What if Einstein shows that they are only approximations? The service to science has been rendered. Newton's laws were "generalizations of interpretative value in their own material." They were closer approximations to an exact statement than the concepts which they displaced, and in turn will be displaced only by a still closer approximation. Surely Einstein would not claim to have an exact formulation. The Einsteinian, and earlier the Newtonian, statements are mere points of departure. Without Newton as a base there could be no Einsteinian refinement.

This is exactly the situation that obtains in the mental measurement field. The relatively simple and admittedly much less important concept of "constancy of the I Q" may be taken as an example. Future investigation will probably show that this formulation does not rigidly hold, but as a point of departure it has been and still is of great service. Undeniably it will be of value to know

that relatively a child develops mentally more rapidly at certain times and in certain functions than others. But relative to what? Why, of course, relative to that mental feature which is the most stable and characteristic which can be found; with our present state of knowledge, relative to the I Q. The concept of the I Q will not fall as a result of mere verbal attacks, but only when it is experimentally shown not only that it is inconstant, but how it varies. This time will probably come as a result of the work of the very people who have built up the concept. The physicists of to-day are not the ones who object to modifying Newtonian concepts, nor are those most deeply devoted to mental measurement averse to modifying any of the interpretative concepts of the movement. Such concepts as "the constancy of the I Q," "a practical limit to general mental development somewhere in the neighborhood of age 16," "the bearing of mentality upon delinquency and insanity," "the general linear (usually rectilinear) positive correlation between desirable traits," "the great relative importance of individual differences in determining our success in meeting life tasks," "the importance of the intelligence level in fields far removed from the scholastic, as in army assignments," are to be refined, not discarded.

Dr. Ruml seems to advocate a philosophical approach beginning with a definition of terms. We would not withhold encouragement to philosophers who define and thereby help perpetuate valuable concepts, but definition is not the essential genius which leads to discovery. If an experimental procedure reveals that a certain thing is true with reference to a first individual, a second, a third, and many others; if it exists as a phenomenon of human nature and can be measured, then it is entitled to a name and a definition in terms of its experimental setting no matter if it cuts athwart long established concepts.

Dr. Ruml objects to a static intelligence level that does not vary from time to time and place to place. We will not stickle over the term "intelligence level," but assuredly if there is any mental trait which does not vary from time to time and place to place, that is the one of all which it is desirable to know, to measure and to analyze. Life itself, individual, social, biological, physical, may be but a series of divergences from certain constants, but whether this characterizes all of life or not the concept is a most fruitful approach to the scientific understanding of social, biological, and physical relationships. These divergences can only be understood by reference to the constants from which they vary. The zoologist does not measure the belly-band of the blow-toad; he looks for certain skeletal relationships which have scarcely varied in ages. The economist does not

base his view upon the gyrations of a "war-bride"; he goes to great trouble to obtain an index number which is a measure of a more or less constant condition or of a gradual trend. The mental examiner is dealing with the most variable aspect of human nature and it is to be expected that the future mile-stones of progress will be, as those in the past have been, the discovery of traits, capacities, interests, needs or tendencies of an individual which are definitive of him from day to day and place to place.

Thus far Dr. Ruml's criticisms, whether or not one accepts them as valid, at least raise definite issues of a kind which are worthy of critical examination. However, when the author abandons himself to sweeping generalizations regarding the "astonishingly meager value of mental test results," the "great waste of scientific talent," etc., he takes a position we regard as absurdly hypercritical and not demanding an answer.

The history of science shows that direct attacks unhampered by over much or too detailed data upon theoretical problems are usually confined to the early stages of the development of a particular science. In psychology, for example, Aristotle concerned himself with the nature of the soul, psychogenesis, soul biology, and the analysis of temperament; Plato with free will, the seat of the soul, and the soul's origin, nature and destiny; Descartes with the relation between soul and body; Hume, Berkeley and Kant with the origin of ideas and the limits of their validity; Leibnitz with soul energetics; Herbart with mental dynamics and the dethronement of the ego in favor of apperceiving and apperceived ideas; Lotze with the origin and unity of the soul and with the relation between mind and body; Fechner with the search for a mathematical expression of mind-body relationship and with a modified form of soul biology. Gradually as such problems are perceived to be, for the time being, insoluble, among other reasons because of the lack of data, effort is shifted in favor of concentrated attacks upon more immediate problems which serve a purpose in themselves and which may or may not provide a background for further theoretical advance. At this stage the larger issues may even seem to have been lost sight of altogether. A truer statement would be that the young science is girding itself for a new advance. In this connection it is interesting to contrast the methods of Aristotle, Galen, La Mark, Spenser, or Romanes with the minute and painstaking researches of the modern experimental zoologist, physiologist, or comparative psychologist. The infinitesimal minutiae of truth resulting from a typical present-day research would surely seem trivial to an Aristotle, who, in an age when there was no science, did not hesitate to sketch the outlines of

half a dozen sciences. In short, if one loses sight of the essential facts in the historical development of science one is always in danger of demanding that the scientist attempt final explanations of phenomena which available knowledge is not competent to explain.

As Dr. Ruml does not define what he means by "theoretical psychology," "problems of fundamental significance," etc., it is impossible to say in how far he has neglected this aspect of the problem. If by theoretical psychology he refers to problems of fundamental importance to the science of psychology, then the charge that mental testing has been futile may be emphatically denied. A science of human mind can not regard as trivial such problems as individual and racial differences in mental ability, the relationships of mental traits, the phenomena of mental growth, the limitations of educability, or the psychology of genius, mental deficiency and insanity. On all these problems mental tests have thrown light, in some cases more than the entire previous history of psychology. Indeed the mental test method, using the word "test" in the broad sense, has become the most important method of experimental psychology. It is proving itself applicable not only to the problems of intelligence, but also to those of emotion, volition, character, and temperament. It is indispensable in the study of habit formation, mental fatigue, mental inheritance, and animal behavior, while in psychopathology it promises soon to overshadow all other methods. Yet the movement is still in its early infancy.

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REVIEWS AND ABSTRACTS OF LITERATURE

Instinct and the Unconscious: A Contribution to a Biological Theory of the Psycho-neuroses: W. H. R. RIVERS. Cambridge University Press. 1920. Pp. vi+252.

Here is another effect in the field of psychology that is the result of the stimulus of the revolutionary theories of Freud. Rivers's book is an attempt to give to the Freudian theories a biological interpretation; namely, that every animal function is (or *was* in the animal's evolution) of some use. The theory of natural selection says that all parts of the animal developed through their utility. The effort called a "biological interpretation" on the part of some biologists to give an explanation of the use, past or present, of every function is opposed by others (chiefly Loeb and his followers) who maintain that many functions are and have been of no use to the animal. If we agree with the former, then Rivers

has given us a biological formulation of the mechanisms of the Freudian theory that should make them acceptable to scientists.

Rivers begins with a short mention of the immense number of psycho-neuroses the war produced. Freud is credited as the originator of a complete scheme as to their causations and mechanisms. While agreeing in the main with the mechanisms, he says that "in the vast majority of the cases that occurred in war times there is no reason to suppose that factors derived from the sexual life played any essential part in causation but that these disorders became explicable as the result of disturbance of . . . the instinct of self preservation."

However, in speaking of hysteria in civil practice, Rivers says (page 135) that "according to my view hysteria as we know it through the effects of warfare is primarily due to the activity of the danger instinct. . . . My own experience of hysteria in civil practice is too small to enable me to deal adequately with this problem." And "There can be little doubt that factors connected with sex take a most important part in the ætiology of this state." Further, on page 120 Rivers says: "The differences between the neuroses of war and those of civil life are due in large measure to differences in the nature of the instinctive tendencies which have escaped from control. The relative simplicity of the war neuroses is due to their origin in disturbance of the relatively simple instinct of self-preservation, while the great majority of the neuroses of civil practice depend on failure of balance between the less simple sexual instinct and the very complex social forces by which this instinct is normally controlled."

It is interesting to see that Rivers, who has had almost as much experience with men who have developed neuroses from exposure to danger as Freud has with those who developed them in civil life, applies the Freudian mechanism to the danger instinct as readily as Freud does to the sex instinct. The view so hotly held that Freud lays too much stress on sex as a causative factor is but partially supported. Sex is shown not to be the only or sole causative factor of the neuroses. On the other hand, and this is supremely important, it is shown that the Freudian mechanisms operate in the psycho-neuroses of war as well as peace.

Much as Freud's views on all matters are still bitterly attacked, so calm and candid an expert as Rivers does well to point out that the world owes Freud a huge debt, in that without his clues to the psycho-neurotic mechanisms the highly successful psycho-therapeutic results in the war might not have been obtained. Freud and those who agree wholly or in part with him have always felt that

there was and is much about the neuroses that still needs understanding.

The main purpose of the book is to "consider these mechanisms in their relation to the more normal processes of the animal organism and especially to the mechanism by which certain parts of experience become so separated that they are no longer capable of recall to consciousness," . . . "to consider the biological function of this process by which experience passes into the region of the unconscious," and "to show that the psycho-neurosis is the solution of a conflict between opposed and incompatible principles of mental activity." This calm assumption of "the unconscious," this recognition of a process whereby functions which were conscious become unconscious, upon whose importance Freud so strongly insisted, must be rather unpleasant to the school of Wundt and Dunlap.

Rivers next says "the term unconscious applies to experience . . . as is not capable of being brought into the field of consciousness by any of the ordinary processes of memory or association." This is Freud's conception of the term.

Repression is reserved for "the process by which we wittingly endeavor to banish experience from consciousness" while suppression which Rivers uses as the psycho-analysts use repression "occurs wholly without the intervention of volition." Repression in the Rivers sense is but one of the many ways in which suppression may and often does take place. There is good reason to believe that it takes place without conscious effort. "Suppression is a reaction to pleasures and pains which are immediately present and takes no account of the more extended experience with which it is the function of intelligence to deal." The physiological research work of Head, Rivers and Sherren that resulted in the formulation of the afferent mechanisms of protopathic and epicritic sensibility is the source from which an understanding of suppression is derived.

Protopathic sensations only tell us that something is there and that it is pleasant or unpleasant, hot or cold, and that it is mere contact or pressure. Epicritic sensibility, probably a later phylogenetic development, is characterized by exact discrimination and localization. Protopathic sensibility is crude and the reactions it produces are sudden and of a mass type. Epicritic sensibility is complex and delicate and may result in many forms of reaction depending upon the nature of the stimulating object. When they coexist they fuse and "certain aspects of the earlier forms of sensibility are modified to a greater or less extent and in some cases this modification involves disappearance of certain characters" and the result is normal cutaneous sensibility. The characters of

radiation and distant reference in protopathic sensibility become latent and can reappear only under appropriate conditions. This has been experimentally determined and it was possible for Rivers to actually produce suppression by the application of cold. "The experiment revealed a feature of primitive sensibility which had been so successfully suppressed that its existence had not been suspected until the beginning of the twentieth century." This is not quite fair to Freud since in his *Zur Geschichte der psychoanalytischen Bewegung* he says "The Theory of repression is one of the foundations upon which psychoanalysis rests" and he formulated 'repression' first in 1896 in his *Weitere Bemerkungen über die Abwehr-Neuropsychosen* which appeared in the *Neurologisches Zentralblatt*, 1896, No. 10.

Head, working in conjunction with Holmes, showed that there is a relation between the cortex and the optic thalamus that is analogous to that existing between protopathic and epieric sensibility. The experimental proof for Freud's clinically derived conception of "repression" may eventually be derived from experiments in this field. Simply stated it is the mechanism of inhibition that in its evolution is called upon for an understanding of all these phenomena. It is the chief constituent of suppression. "Control or inhibition belongs to the essence of nervous activity" and it is suggested that "suppression by which experience becomes unconscious is only a special variety of the process of inhibition common to every phase of animal activity." He shows how at first it works on the "all-or-none" principle, how it then becomes graded and throughout shows its results in function and structure. He makes inhibition of early tendencies a *corollary* of evolution. Primitive patterns of activity must be kept from going into action in favor of more discriminating ones. In pathological states the earlier forms are again used.

The content of the unconscious is made up of experiences, both emotional and intellectual, but the latter always connected with a strong affective tone in which emotions that interfere with comfort and happiness have been strongly roused. In addition there are large elements of more or less neutral experiences, such as the setting in which the pain was experienced, that are carried into the unconscious in the act of suppressing the painful experience. The unconscious is therefore the storehouse of experience associated with instinctive reactions.

In the chapter on the nature of instincts he contends that the behavior of animals is not as fixed and mechanical (reflex) as we had supposed, while man's is much more so. The difference between man and animals is one of degree and not of kind. The theoretical

differences between instinct and intelligence are easily made but the practical differences are more difficult to describe accurately.

It is possible to observe the most complicated behavior in insects and other animals that is wholly independent of individual experience. But in the case of the higher animals, including man, this is not so easily observed. In man it is very difficult to separate innate from acquired experience.

He then analyzes the nature of instincts. He leaves out of consideration the instincts of insects and invertebrates as being too different from those of man and the vertebrates. The behavior of adult man as compared to that of infants and animals is examined for criteria for his classification. One of the characteristics of the response of an infant or animal to danger is that it tends to be made with all its vigor and without discrimination. In certain cases this is also true of adult man. When man does this he may be said to act instinctively and acting thus, he shows an absence of gradation. To characterize these responses Rivers borrows a term from psychology "the all-or-none reaction" originally used by Keith Lucas and A. D. Adrian. Responses which are of the "all-or-none" type show: first, absence of exactness of discrimination, of appreciation and of graduation of response; second, they react to the stimulus with all their possible energy; third, the response is immediate and uncontrolled.

Head and Gordon Holmes have shown that all these characteristics are true in a large measure of optic thalamus activities. Rivers brilliantly suggests that these be viewed as the protopathic aspects analogous to peripheral protopathic sensibility and that they form the central basis of emotional reaction. This type of activity, although instinctive, is quite different from the highly patterned activity of insects which we also call instinctive although these may also be subject to the "all-or-none" principle. Rivers therefore proposes that instincts be classified as protopathic and epicritic. Protopathic instincts act on the "all-or-none" principle and are not capable of gradation. Epicritic instincts are discriminative and graded in their activity. The latter characterize the elaborate instincts of insects and certain forms of innate behavior in man. The former are especially obvious in some of the innate behavior of man and animals. To us it seems that when the response of an organism to a stimulus is so graded that it can be called epicritic it is highly integrated and when observed we call such behavior intelligent. If this be true we have just as much an instinct to be intelligent as we have an instinct to fight, fear, *etc.*

For the purpose of discussing the danger instincts Rivers now divides instincts in general into self-preservative, race-preservative

and social or herd instincts. The first is subdivided into "attractive" forms such as hunger and thirst and "repulsive" forms such as disgust.

From this point on there is the same attempt at division without any well marked lines of demarkation that marks the usual psychology of old whenever it leaves the biological method of approach. After the classification is set up the reactions to danger are connected with specific forms of emotion.

Rivers connects flight with fear, aggression with anger, manipulative activity with absence of affect. The absence of fear and pain in manipulative activity when the latter is a response to a danger stimulus is explained by their being suppressed. The complete suppression of fear and pain in the act of immobility is also suggested and the possibility that suppression was in its earliest forms brought about by the response of immobility to danger in the effort to suppress fear and pain (page 59).

Of course, Rivers's chief endeavor has been to show the suppression of affect in the organism's response to danger in such states as immobility in animals and manipulative activity in man. The latter is distinguished from the former in that there need be no loss of memory of the events that produced the reaction. That there may be complete loss of memory is well known and may be accounted for by the completeness of the suppression.

This completeness of suppression which he calls "all-or-none" is the form it takes in infants, children and animals. In adults it occurs in pathological states due to the process of regression which "steps down" activity to a pattern it acted upon in an earlier state. Suppression on the "all-or-none" principle must have come into existence very early in the evolution of animal life. The need for this complete kind of suppression of earlier or alternate modes of behavior Rivers illustrates by the life of the caterpillar that becomes a butterfly and the tadpole that becomes a frog. In both cases the persistence of the earlier form of activity would terminate the life of the fully developed animal.

In man there is not only suppression of tendencies and experiences but there is evidence that these lead a kind of independent existence which motivates and modifies behavior and is incapable of recall by ordinary processes of memory.

This independent existence of a suppressed experience is usually known as dissociation. When it returns to consciousness as multiple personality, Rivers, adopting Morton Prince's terminology, calls it "co-conscious," but in the case of a fugue he purposes to speak of "alternate consciousness." He also limits the term

“dissociation” to those activities that are accompanied by independent consciousness.

Rivers here makes a bold attempt to carry Elliot Smith's suggestion, *viz.* cerebral development was in part due to the stimulus of arboreal life on early man's activities, still further. Premising the evolutionary theory he draws a biological parallel between animals like frogs, newts, caterpillars on the one hand and man on the other and shows that the dissociation that is so necessary for lower animals gave way in man to an integration when he went from ground to an arboreal life and that this integration would account for the association tracts in the neopallium. In other words, the suppression of suppression by grading it so that two opposing modes of behavior become integrated. We humbly suggest that it is possible to speak of this as the instinct to suppose suppression or of an instinctive tendency to release and re-align opposing tendencies and is not this the process we call intelligence? Behold intelligence becomes instinctive!

One chapter (XI) is devoted to rescuing from common abuse the term “complex.” He takes issue with Bernard Hart whose definition of complex is any “emotionally toned system of ideas.” This is almost identical with the “sentiment” of orthodox psychologists. Rivers says “sentiments” are features of the mind which take part in the most finely graduated processes and are connected with discrimination of the most delicate description. The complex being the result of suppression always partakes in some degree of the “all-or-none” principle and in some degree is a pathological manifestation as opposed to “sentiment” which is a necessary and constant feature of normal mental life.

Chapter XII which takes up suggestion is the key to the book. Suggestion is used as “a comprehensive term for the whole process whereby one mind acts upon another unwittingly. From this point of view suggestion can be put side by side with suppression as one of the processes of instinct.” Like suppression, Rivers says, it works unwittingly. The great source of suggestion is herd life and its greatest use is in protecting the herd from danger. Its need when the “instinct for immobility” is the necessary reaction to danger is obvious when absolute uniformity is essential to the welfare of the group. It is the “instinct which is concerned with collective as opposed to individual needs” but the herd acting upon the individual for the benefit of the former unwittingly modifies the individual's instinctive behavior. This process of modification Rivers calls suggestion. It is in fact the process by which instinctive behavior becomes modified (by inhibition?) and as such is used to explain sleep hypnotism, hysterical suppressions of sensibility, *etc.*

Instinct can act on the "all-or-none" principle only by virtue of suppression of every other pattern of behavior. Now instinct is in its turn suppressed by the herd acting through suggestion. Thus we see instinct becomes graded. The chapters on the psychoneuroses are excellent as far as they go. The biological analogies used make neuroses and psychoses more intelligible and coherent. They will stimulate further research by this method of approach.

The chapter on Sublimation is disappointing; it is barely more than two pages in length. Dr. Rivers must have seen a great deal of sublimation in his war work and I hope he will subject the data he has to a critical attitude as candid, general and searching as he has the process and end products of regression.

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Scientific Method: its Philosophy and Practice. F. W. WESTAWAY.
Second edition. London: Blackie and Son. 1919.

This text is intended apparently to aid would-be teachers in England, particularly teachers of elementary science, by giving them a grasp of the elements of logic and scientific method. Any text on logic arouses again that long deferred hope, in those who are called upon to teach the first rudiments of logic, that here at last may be a way of approach which is both worthy of the subject and inspiring to the beginning student. The book before us does not satisfy that hope, which is, alas! Utopian, but in some respects it does go half way. It is a peculiar book. Written by a pragmatist, it is scornful of deductive logic; but displays, on the other hand, a most astonishing trust in the "authorities" of inductive logic, quoting them with a scrupulous respect which some of those quoted hardly deserve. One may say indeed, that the book is an orthodox and well-referenced elementary textbook on inductive logic, plus several peculiar preludes and supplements all its own. Thus, after a couple of preliminary chapters, good but brief, there is a chapter on philosophy's task and problem, distinctly the weakest spot in the book—in spite of having been rewritten for this edition—a chapter from which the average student would doubtless draw a considerable fund of confused misinformation. Then there follows something much better, a rapid history of philosophy from the Sophists to Hume, emphasis being on the logical contributions of the philosophers, a hundred pages pretty well done. This section might make the book useful to such students as would otherwise never learn anything of Plato or Descartes. Then follows the inductive logic, which covers the usual things well, and goes far enough to mention some points not ordi-

narily found in such detail, such, for instance, as the devising of empirical formulæ, and the reduction of observations. After the logic comes the most valuable section of all, "Famous Men of Science and their Methods," sixty pages, all too short, of quotations from scientists illustrating cases of actual inquiry, each case sufficiently at length to enter into the spirit of the thing. Admirable further references follow. Then comes a group of pedagogical suggestions concerning ways of teaching science, and the book closes with some final remarks commenting on the relation between science and the late war. Some teachers of elementary logic may find that this rather out of the ordinary sequence of subjects makes for them a useful introduction to philosophy through logic. In any case the book is worth looking over.

It may be that the perfect textbook on logic, like "the great American novel" so long awaited by critics, is a thing impossible, because what would satisfy some of the requirements would necessarily do violence to others. In the first place, it is doubtful whether there is any such subject as logic. There are a number of subjects called by that name, but they are about as different as chemistry and elocution. Logic lies on the vague boundary line where diverse empires meet and where there is great confusion of tongues. Our author, indeed, saves himself by calling his volume *Scientific Method*. But even so, full definiteness is not secured. There are great ranges of inquiry, at least approaching the scientific, inquiries in social sciences, in historical sciences, in applied sciences, in the arts, statesmanship, war, business, on which this book could scarcely touch, even had the author wished. And within the physical sciences themselves there is much that our author ignores, for this text is, as we have said above, orthodox. This is no condemnation of the book. It is simply a comment on logic texts in general, that they are, all of them, a random sample dipped up out of a larger world of facts. In the sample are strange beasts, large and small, and quite a bit of amorphous mud off the ocean bottom, the whole contents of the dipper being fairly well dried out before being shown to the student. So here is the first difficulty with logic texts, to locate their proper subject-matter. Any choice among brands of logic, including the one made below in the present article, is arbitrary and in a sense unfair.

In the second place, logic undoubtedly enjoys such favor as it has had in college curricula, because of the popular supposition, or shall we say superstition, that it is a practical subject. This might at first promise to be an aid in the choice of topics. Actually it complicates matters. It is possible that everyone might agree on a pre-

liminary pointing out of some of the crudely obvious fallacies, mostly matters of language or of intruding prejudice and emotion. But after that, what? If we are sincere in wanting to furnish something practical, we must never impose upon the student of logic any form of rules of the game which he would thereafter think of as being somehow peculiar to logic books, or which he could not subsequently apply, as it were instinctively, in his own daily thinking. This is a hard requirement. It condemns the syllogism as ordinarily taught. But also it opposes the strongest momentary desire of the student himself. He asks of his teacher in logic: "Give me a rule, that I may apply it automatically. I must pass the course, and don't you see how helpless I am when asked to think out the why of these things for myself?" But even if these difficulties be resolutely met, it is by no means evident that a programme of isolated problems can be other than both irksome and futile. It laboriously corrects now this fault, now that, but the power to apply in new cases is seldom thereby created. To accomplish that, we must create a spirit and an attitude, and above all, an enthusiasm, the feeling that there is something important at stake. The average student thinks crudely, but he is not worried by this, for he does not take his own thinking seriously. Here indeed is the key to the matter. The most practical instruction in logic is one that shall first establish in the student a respect for thought, a sense of its seriousness, an appreciation of its importance. And that in turn can only be accomplished by showing him thought at its highest power, playing the noblest part it is capable of in the great world of civilized life, showing it grappling with momentous questions, showing it solving problems important to all mankind. Teach thought in its great successes, and not in its correction of trivial and comic fallacies. Let the details of daily humdrum applications be added later, and in their proper proportions. Doubtless it is well that students should be taught to interpret sentences, to perceive what a question means or what it would be to deny a given statement. It is well that the student should gain skill in debate. We might even hope that somewhere he should obtain, what Mr. Westaway and some other eminent pragmatists have never achieved, some appreciation of what is meant by "logical form" and by deductive rigor. But all these, even if they belong not, as the case may be, to courses on rhetoric or on mathematics, must wait on the primary task of making a student feel, what he so seldom is made to feel, that thinking and right thinking really matter in the world of great affairs.

The ideal logic text must, then, introduce the student to thought at its highest tension and in its natural environment. Only great ex-

amples adequately and livingly presented will suffice. The ideal text would have philosophic breadth; the text before us has only miscellaneousness. The ideal text would have a center, a unity: for instance, it might treat of evidence in all the protean forms that evidence takes, what evidence means in a court of law, in a scientific laboratory, in an historical synthesis and reconstruction of a vanished civilization, in planning the route of a profitable railroad, in solving the secret of a crime, or facing the world problems of philosophy and religion. But the principle involved is ever the same: arousing an appreciation of, and admiration for thought, by showing it engaged in great and difficult works. We have no such text, nor an approach to such. For occasional lectures, the teacher of logic may even now draw inspiration from Merz's masterly volumes on nineteenth century science, or from such biographical works as Duclaux's *Pasteur: the History of a Mind*, or again, in a different quarter, from Cardinal Newman's *Grammar of Assent*. He may dip into Mach or Poincaré, or into the writers on historical methods. He may collect apt illustrations from many sources: from Wigmore's *Principles of Judicial Proof*, or from Gregory's *Discovery*, or indeed, from the text now before us. But all this is makeshift. We ought to have a text to put into the student's own hands, saying: "Read this and know that he who does not understand what thinking really means does not understand what civilization is. As correctness of speech is a prerequisite of eloquent speech, but mastery of language is more than correctness, so likewise, is it necessary that we think correctly—that is the indispensable though difficult minimum—but thinking at its best is more than correct, it is efficient and judicious and wise. It is the supreme prerogative of civilized man." Scarcely anything that has been done in the last fifty or sixty years has been incorporated in the existent texts of logic. Their authors seem to know neither the advances of symbolic logic, nor of instrumental logic, nor of science in general. But if we had instead such an ideal text as suggested, we should no longer have to apologize to our students and to ourselves for our courses in logic.

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JOURNALS AND NEW BOOKS

SCIENTIA, April, 1921. *Les contributions des différents peuples au développement des mathématiques. II. Le caractère international de la pensée mathématique* (pp. 253-262): GINO LORIA (Genoa).—All suggested criteria of national style or method in

mathematics encounter exceptions, while wide variation appears within a single nation. The same discovery is not infrequently made simultaneously in different nations; different nations collaborate in developing a single field, or take up the same line of study in relays. *Paleontology: Its Contributions to Knowledge* (pp. 263-274): EDWARD W. BERRY (Baltimore).—Paleontology is the biology of the past and something more, for it reconstructs the environments of the past—a reversed ecology. For biology, it fills in the gaps of living species. It furnishes the most adequate chronology for the geologist, as well as tracing the ancient pathways of distribution and the shape of vanished continents. It can not explain the causes of evolution, but to it belongs “the actual procession of the myriad forms across the stage of the past.” *Anaphylaxie et finalité* (pp. 275-280): CHARLES RICHEL (Paris).—Anaphylaxia, the reverse of mithridatism, is the increased susceptibility to certain colloidal poisons, due to a previous non-lethal dose. This seems to be a purely harmful property of living organisms. The author suggests, however, that it is conducive to the stability of the species, and so has a sort of final cause. *La crise irlandaise* (pp. 281-300): J. VENDRYES (Paris).—The present Irish conflict is a psychological clash of two racial temperaments, exasperated by a long history of previous conflict. The author denies that religious differences are central. He sees beyond the perplexed and dark immediate future a more remote future, wherein Ireland, treated as an equal by the English, will prove itself more English at heart than seems conceivable today. *Reviews of Scientific Books and Periodicals*.

Keynes, John Maynard. *A Treatise on Probability*. London: Macmillan & Co. 1921. Pp. 466. 18 s.

Nussbaum, Robert. *Nos fils, seront-ils enfin des Hommes? Notes d'un éducateur spiritualiste*. Paris: Félix Alean. 1921. Pp. 115. 4 fr.

Warren, Howard C. *A History of the Association Psychology*. New York: Charles Scribner's Sons. 1921. Pp. ix + 328.

NOTES AND NEWS

Dr. Robert H. Lowie, who has been for a number of years associate curator in the department of anthropology of the American Museum of Natural History, has accepted the position of associate professor of anthropology at the University of California.

THE JOURNAL OF PHILOSOPHY

A SPIRIT WHICH INCLUDES THE COMMUNITY

AN able disciple of Auguste Comte has recently warned us again of the perils of communal and other spirits. "When all the other ghosts have yielded place to relationships, physical, biological, or social, which their presence obscured, there will still remain one ghost, so firmly entrenched in countless ways that it will not come under general suspicion for many years. And that one ghost is mind. Few today, even among specialists, recognize that mind is like gravity, or like sickness, or like 'vital principle', simply an abstract name for certain concrete, describable relationships." So says Miss Sabin.¹

The lessons, which positivism knew how to impress so well upon the thinkers of the last century, can not be said again too many times. But a criticism, whose force depends upon an emphasis of half the truth, may easily over-stir the depths of one's emotional beliefs or unbeliefs—that muddy sea which surges underneath the intellect of man and over which the intellect stands guard, or *should* stand guard. Reading Miss Sabin's article, I felt myself gently tossed by the waves of this same ocean, and I had given expression to certain well considered thoughts in an article which shall remain unpublished except by title. It was called *On Losing One's Mind—a Sequel to Giving up the Ghost*. But these reflections had come to have a front and back; and as their positive aspect began to interest me more and more, their negative side engaged me less and less. I had begun—but this was after all the revival of an old habit of thought—rather to mistrust the ancient device of bringing "will" and "memory" and finally "mind" and other diverse things under the same discredited heading in order to discredit them as well. Not that the argument continues to leave me cold. The opposite is the case. It is that whenever I meet a phrase like "slave-morality" or the "theological stage" or "mere metaphysics" or even "ghosts," I shrewdly suspect that the writer is seeking to betray my emotional nature into playing me some odd trick.

A believer in the reality of ghosts and particularly in the reality of *communal* spirits, I have been cudgeling my brains for a formula which would epitomize the meaning of these sprites.

¹ Ethel E. Sabin, *Giving up the Ghost*, this JOURNAL, December 16, 1920, Vol. XVII, No. 26.

Miss Sabin's definition fails to give me quite the sense of which I am in search. Moreover I wish to convince Miss Calkins too, so that my definition of spirit must not be merely single-minded but must embrace communal minds as well. But let me have out with my thesis at once. Perhaps Miss Sabin will take it to contain the same sense as her own. It is this: *Wherever there exists a conflict among points of view, there there is a mind.* I do not say that this is all that goes to make a mind. It is only an essential character. If it be not a sufficient condition it is at least a necessary one. What it is that constitutes a point of view and when it is that they conflict, are matters for the logician to unravel. Here it will be enough to *illustrate* our meaning. Let us begin with the simplest of examples.

Consider, if you will, the case of any object of perception. I walk around the table and observe it from many points of view. These points of view conflict. Accordingly, a mind is involved in the total situation. The *real* table, the *only* real table, is the one which emerges, through a reconciliation of the conflict. Your *ens realissimum*, Sir Realist, is an empty class. Suppose now that a number of observers be seated around this same table, this time the object of their joint perception. It is clear that their points of view conflict. Accordingly, a mind is involved in the total situation—a group-mind, if you like, and as simple an illustration of such a mind as might be cited. "Many men, many minds" is no less proverbial than the "man of many minds." *It is accident, pure and simple, where these view-points are placed, provided they conflict.* That is the contention.

There are times, you will say, when the mind plays host not to a conflict but to a reconciliation of the conflict, when it occupies itself in the contemplation of unvarnished truth. But these synthetic formulas,² which yield up the truth about the world,

² One may easily, if he likes, multiply illustrations of how points of view may be reversed *without* effecting any higher synthesis. Compare a passage from the pen of Romain Rolland, which the *London Morning Post* would have applauded no doubt and quite properly, in September, 1914, when it was written, with a passage which the *Morning Post* publishes in 1920. "Our France, which bleeds from so many other wounds, has suffered nothing more cruel than the attack against her Parthenon, the cathedral of Reims, Notre-Dame of France. . . . The fact is that we regard the spirit higher than the flesh. Very different in that respect from those German intellectuals, who, one and all, at my reproaches for the sacrilegious acts of their devastating armies replied with one voice: '*May all the world's art perish rather than a single German grenadier.*'" Here speaks a fine and gentle spirit and this is its echo. "For ourselves we count the Carnegie Library and the Municipal Offices of Cork as dust in the balance compared with the loss of those dear young Englishmen slaugh-

if they convey any meaning to the mind, stand always for an act of recapitulation—an act in which the one may again be seen as emerging from the many, in which the many may again be seen as shot through with what is *really* one. Too little is it realized that every act of perception is at bottom a *tour de force* and this fact is little recognized because this *tour de force* is generally and habitually *en un tour de main*. “In all that pretends to the name of science,” says Hegel, “it is indispensable that reason should not sleep—that reflection should be in full play. To him who looks upon the world rationally, the world in turn presents a rational aspect.” To invite the novitiate who has entered the gateway of science to find his way through to the end, is the same as to tax his faith with this fundamental demand: “Look, Sir, upon the world rationally and the world will in turn present a rational aspect. The relation is mutual.” But such a striving for a rational understanding of things is as easy to recommend as it is difficult to practise, for every man finds about him, not inevitably a world of pure being but a world becoming; not a world ready made but a world in the making. The world of pure being is the world that continually emerges as the result of an habitual *tour de force*.

I know that to many a reader this statement of the case will appear as one of those time-worn Hegelisms and so as something manifestly true or clearly false. To others it will seem as if the matter thus conceived were oversimplified. The “modern” logician will be specially distressed for the sound of wheels going round tered while doing their duty.” Perhaps it would be an exacter analogy were we to compare Cork and Louvain. It is right to say that the English press (mindful of this last analogy) does not agree with the *Post*.

If any one wishes a further example let him tax his brains to discover a difference between the slogan “*America first*” and “*Deutschland ueber alles*.” A cry, which quite properly excited universal and derisive opposition in 1914, may help to win a national election in 1920, when the boot is on the other foot. The late unpleasantness in Europe, instead of effecting at once a higher moral synthesis, ends with our adopting in so many instances the point of view which we set out to destroy. The *limiting case* of this method of settling a difference of opinion is revealed in the tale of the two knights, who fought about the color of the shield, when each had looked upon one side only—the side his opponent had not observed. You may imagine each one crying out as he attacks the other: *Magna est veritas et praevalabit!* Far from the belief, however, that no higher moral synthesis has been evolved and will one day play its rôle, I prefer to dwelling on such particularities some higher aspiration as an article of hope if not of faith. Hegel says, “like the soul-conductor Mercury, the *idea* is in truth the leader of peoples and of the World; and *Spirit*, the rational and necessitated will of that conductor, is and has been the director of the events of the world’s history.” *Mens est omne magnum humanum*.

is scarcely audible. Consider an example which might suggest itself as not a case of mind at all and yet as a case of mind by definition. The point of view of the Martians and that of ourselves conceivably conflict. Suppose their foremost speculative physicist, whom we may refer to familiarly as Skygad, does not agree with Einstein concerning the nature of mass. Is it fair to call this difference of view, the combined divergence Einstein-Skygad, a group-mind? I should answer, Yes. And why do we hesitate to call it a case of mind? Not because each view is unconscious of its opponent view. Conflicting views abide in any mind without consciousness that they conflict. We hesitate to call the conflict of our own view and the Martian view a case of mind because there seems no *practical* prospect of a reconciliation. It is here that reason sleeps and progressive reconciliation of the conflict seems essential to the being of mind. But *mens semper cogitat*, if it be true, requires interpretation.

I recall having seen long ago a cartoon representing this same Skygad on visit to the planet where we find ourselves. Accident had led him to a chess resort and he was making an entry in his diary: "Came upon two strange earth-beings in dispute regarding a set of diminutive idols. First one and then the other demanded some special arrangement of the idols; after which each one lapsed into sullen silence." It is clear that the Martian regarded such employment as serving no fair end. His own view and that of the chess enthusiasts did not conform. Who shall say what each might not have gained through a sympathetic understanding of the other!

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THE NEED OF A NEW ENGLISH WORD TO EXPRESS RELATION IN LIVING NATURE

PART II

III

THE RELATION BETWEEN PARTS IN THE INDIVIDUAL

The particular parts to be requisitioned for this illustration are the muscles and the nerves of animals. On the basis of hundreds of anatomical and physiological investigations made during the last half century especially, we are now able to state the relation between these parts in the following way: (a) From the functional standpoint, the dependence of muscular mechanism upon neural mechanism and of neural mechanism upon muscular mechanism is such that

neither could have any activational value to the organism without the other; (b) from the originative and developmental standpoint, the dependence of each of these mechanisms upon the other is such that neither could have come into being at all without the other.

It has of course long been one of the commonplaces of physiology that all ordinary muscular action is incited by, and consequently is so far dependent upon, stimuli reaching the muscles through the nerves. But various facts, such as that of the ready response of muscle to direct stimulation, *i.e.*, stimuli applied experimentally to the muscle itself instead of to the nerve going to the muscle, permit or even encourage us to conceive the contraction of muscles to be an operation due solely to the nature of the muscles themselves, the nerves playing merely some such secondary part as that of determining just when or under what particular circumstances contraction shall take place. If, for instance, a muscle will contract as well in response to a direct pinch or a directly applied electric current, as to these stimuli coming to it by way of a nerve, why may we not suppose that the nerve's part in the business is really rather incidental?

Well, for one thing, but little reflection is required to recognize that the fact that a muscle can be made to contract by sending an electric current through it does not prove much about its original and inherent ability to contract; nor does contraction thus induced give much clue to the question of whether other kinds of stimuli may also induce contraction. That a gun may be discharged by applying an electric spark to the powder, proves a little something, but really very little, about the explosive nature of powder.

It is only through great study of both the activational relation between mature muscle and nerve, and of the origin and development of these in the individual and in the whole animal series, that true insight into the nature of the relation between them is reached.

The evidence in the case is altogether too voluminous and intricate to be detailed here. Only results can be given and these in the most concentrated form possible. The matter reaches through the whole gamut of structure and activity in the animal world, from the most elaborate and refined operations of civilized man, to the crudest, simplest movements of creatures, like sponges, near the bottom of the scale. The simplest phase which we shall touch is that of the *reflex arc*.

The conception of this structure is now so well established in physiology and psychology that the merest outline of what it is will suffice. The two most essential elements in it are an inwardly placed contractile cell (basis of muscle), known as the *effector*, and a more

superficial, sensory cell (basis of sense organ), for contact with the outside world, known as the *receptor*.² At their simplest, effector and receptor are in contact with each other. But more commonly by far, at least one other element in the form of an elongated cell intervenes between the two, this being known as the conductor or adjuster, since its office is to conduct the stimulus from receptor to effector. Although this third element is readily seen to be quite secondary in importance when the reflex arc is viewed at this low level of its evolution, yet it comes to be of very great importance in the most highly developed animals, especially in man. Indeed, so prominent is it here that it really constitutes the "nervous system" as this is wont to be understood. Too frequently for clarity of understanding the nervous system and the sense organs are spoken of as though they were not fundamentally and indispensably parts of one and the same system.

But this implication of possible dissociation of receptors from conductors (sense organs from nerves) contained in much of common physiology is less pronounced and less unfortunate than the implication of dissociation of effectors (muscles) from receptors as well as from conductors. In truth, the basal fact that effector, receptor and conductor really constitute a system, one and inseparable, is seriously obscured in the common thought and language pertaining to the muscular and neural mechanisms, particularly of higher animals. But that such is the fact is seen to be in the highest degree probable once the whole subject is viewed from a standpoint that is as rigorously synthetic as it is analytic.

Rectification of these defective teachings is gradually coming about—more slowly, I imagine, than would be the case but for the circumstance that the relevant truths lie in fields so far apart as to make it difficult for students in any one of them to know much about what is going on in the others.

Prohibitive of great detail as is my aim in this article, yet I must refer to a few of the investigations which bear particularly on the point now occupying us.

The first to be touched will be the work of G. H. Parker on the nervous system. Tellingly significant is the circumstance that Parker's observations appear to leave him no alternative, when it comes to choosing a single word with which to designate the mechanism

² For the purpose of this discussion it will be permissible to use the term effector as though it had reference to muscular phenomena alone. That, however, such is not really the case must not be lost sight of. Glands, for example, are likewise effectors and exceedingly important ones, though the present aims do not require attention to them.

fundamental to all higher animal activity, for some word that will refer to both effector and receptor elements, that is both motorial and sensory elements. The term actually used is *neuromuscular*, written as a single word, its two parts not even separated by the hyphen. Thus we find in his recent book, *The Elementary Nervous System*, numerous phrases similar to the following: "that final type of neuromuscular organization that is characteristic of the highest animals, and in which a central nervous organ or adjuster is well differentiated," p. 203.

Perhaps the most important of Parker's many additions to the sum total of information in this field are his observations on the movements and the mechanism involved therein, of sponges. Until a few years ago the usual teaching was that these lowly animals are entirely without nerves or muscles and consequently have no power of movement, excepting that made by the cilia, so well developed in certain of the cavities peculiar to the creatures. But Parker shows, in confirmation and important extension of affirmations previously made by a few observers, that a certain measure of contractility, especially for closing the orifices, is possessed and regularly performed by all the sponge species examined by him.

Nevertheless, his search for nerves proved as little successful as had that made by other students. As to muscles, he found, as a few other zoologists had, certain cells, especially around the main or discharge orifice, that are contractile and hence may be regarded as "in the nature of primitive muscles."

A point of special interest is the fact that while cells which deserve the name "primitive muscles" are present, no cells accompany them to which the name primitive nerves can be applied. In other words, recurring to the nomenclature of the reflex arc, we have here one element only, the effector, of this basal structure. "Sponges may be said," Parker writes, "to have among their cell combinations effectors, but no receptors or adjusters" (p. 49). And this conclusion leads him to give special attention to the subject of "independent effectors," not only in sponges but in certain parts of higher animals, as for example, in the pupil-narrowing mechanism of the eye. Even in the human eye the muscle fibers involved regularly act partly from direct stimulation, *i.e.*, as independent effectors.

But now comes the important query, in what sense are these "independent effectors" independent? Is their "effecting" (contracting) independent in the sense that no "recepting" and "adjusting" (stimulating and conducting) at all are involved? Does contraction take place just from its own inherent ability so to do and with no external influence whatever operating thereto? Parker's

observations furnish just as conclusive proof that this is not the sense in which the effectors are independent, as that they are effectors at all. The contraction depends upon stimulation quite as indubitably as do those in other animals where receptors are present. Whether the exit orifice of the sponge shall remain open or close up depends upon whether the water in which the animal lives is in motion or is still. The stimulus appears to be mechanical and of the character indicated. Nor is the power of conducting injurious stimuli wholly wanting in the animals, as the experiment shows. "It would be quite erroneous," Parker says, "to ascribe to these animals a complete absence of transmission" because they possess these independent effectors (p. 47). And further, "in many tissues a sluggish transmission, unaccompanied with observable motion, and, therefore, nerve-like, is beyond question" (p. 48). Such transmission he calls *neuroid*.

The truth seems to be that in sponges the effectors are their own receptors, and are also conductors to some extent. They are independent only in the sense that stimulation (reception) does not for them depend on *other elements* than themselves. They are not independent in the sense of not being dependent on stimulation from contact with outside bodies.

All this points back unmistakably to the now universally held view that protoplasm, no matter how little developed, is in its very nature responsive to stimuli, this responsiveness consisting, for one thing, in the phenomenon of contraction.

A highly significant thing about this work of Parker's is its bringing into clear light the fact that in the evolution of the neuromuscular mechanism as we find it in its elaborated state among higher animals, the motorial aspect of protoplasm seems to lead the way as one may express it, so far as visible structure is concerned. But actually we are probably obliged to assume that the stimulative, or irritative, or sensitive aspect is likewise fundamentally involved. Stating the matter in his own language we have: "They [sponges] possess the original and most ancient of its [the neuromuscular mechanism] constituents, muscle, around which the remainder of the system is supposed subsequently to have been evolved" (p. 49).

Thus it is that zoology traces action in the form of motion identical as to kind with that distinctive of the commonest of creatures almost to the doorsill of animal life. Nor will it do to lose sight of the fact that hand in hand with this expanding perception of the place of action in animal life, has gone perception of the dependence of such action on contact with the external world resulting in the phenomenon known as sensation, or stimulation. What tremendous

meaning this is seen to have when its accordance is recognized with whatever is truly vital in the formal philosophy and psychology of our day!

But the cardinal point for us is this: the germ itself, as we may call it, of animal activity has a measure of diversity, but also of togetherness, both as to structure and as to function. There is something of differentiation and likewise of conferentiation at the very start off, so far as observation can ascertain. And every stage of development, from this low level to the very highest, including the conscious life of civilized man, presents this same diversity and togetherness for the business of living. Action, motion is accomplished by structure seemingly always contractile, in the vast majority of cases the contractility being of the sort called muscular. And everywhere this is dependent on other kinds of structure called irritable or sensory, in its nature the very antithesis of muscular motility.

Reverting now to our remarks about the nomenclature of development, we find that the definition of the particular animal development with which we are concerned would be: All progressive development in the motor aspect of animal life involves passage from *a state in which the differentiation and conferentiation of the effector-receptor system are less complete, to one in which such differentiation and conferentiation are more complete.*

This development does not consist in differentiation of effectors and receptors which somehow get together, more or less by chance, after having been independently produced; but, as said in general terms some pages back, the two, the differentiating and the conferentiating, go on in mutual or reciprocal dependence, even though the former may in some instances a little precede the latter in time. Although, as is well known, there is very much of secondary coming into contact of nerve cells with nerve cells, nerve cells with muscle cells, nerve cells with gland cells, and so on, in the ontogeny of higher animals, the evidence taken all together requires us to suppose that in all cases such independence of origin and secondary conjunction are the expression of developmental tendencies coming down by heredity from ancestral conditions in which such structural independence did not exist.

And we must not fail to note what this mutually generative dependence means in a specific instance as to the nature of each element. The nature of a muscle must be to some extent dependent upon the nature of its nerve or nerves; and, reciprocally, the nature of a nerve must to some extent depend upon its muscle. While muscle is indubitably muscle, and nerve is indubitably nerve, each acts in some

measure determinatively upon the other. In the purely anatomical-physiological aspect of the reflex arc, I am quite sure the conclusions here stated answer the general requirement of an adequate conception of that structure formulated by John Dewey twenty-five years ago. He wrote: "What is needed is that the principle underlying the idea of the reflex arc as the fundamental psychological unity shall react into and determine the values of its constituent factors," ("The Reflex-Arc Concept in Psychology," *The Psychological Review*, Vol. III, 1896, pp. 357-370).

It is highly probable that this reciprocally determinative action of muscle and nerve does not pertain merely to the gross structure and action of each, but extends to their chemical composition and action. This aspect of the subject I touch even more lightly than I have the anatomical-physiological aspect, though a reference to it seems indispensable. And this brings me to another of the fields of investigation mentioned some time ago as contributing in special degree to the conception of relation between muscle and nerve (effector and receptor) here outlined. I refer to the work of C. M. Child on what he calls axial gradients in organisms.

The fundamental conception here is that in an organism or definitive part of an organism, which develops any kind of an axis, as by becoming longer than broad, this axis is accompanied by, or is an expression of, a differentiation, or gradation, along the axis in the metabolism of the organism or part; this metabolic differentiation, or gradient, being in turn accompanied by, or an expression of, susceptibility of the organism or part to varying environmental influences.

Such differentiations or gradients occur in the lowest, simplest organisms, as in hydroids and algae, even in single cells of these the protoplasm of which is but slightly differentiated, and is not restricted to organisms having well established tissues and organs. What in this is particularly relevant to our discussion is the differentiation in susceptibility to external influences as a seemingly necessary concomitant of development, this manifesting itself in a variety of structure and activities. But to stop with attention to the differentiation would be to stop with the story half told. The differentiation is significant only as it appertains to an organism, or at least to some part or member of an organism *as a whole*—as a space-occupying, time-enduring body.

In other words, the purpose of the differentiation, namely, the preservation and development of the organism or part, is realizable only through being accompanied by its appropriate—what shall we call it? Integration is the term used by Child, this being conform-

able with common practise. "Physiological polarity [differentiation] and physiological integration or individuation" he believes are illuminated by the recognition of susceptibility gradients. But is it not clear that the usual implication of *integration* makes this word a bad fit for the phenomenon here needing expression? Certain it is that the physiological poles (differentiations) referred to are not things that have been produced independently of each other and then secondarily brought together. Complete severance of them from each other would mean the destruction of the organism or part, and might very well result in their disintegration; but this would surely be something very unlike their differentiation. So in this case likewise, I submit, "physiological conferentiation" would be a truer word mate for physiological polarization than is physiological integration. In his very recent book, *The Origin and Development of the Nervous System* (University of Chicago Press, 1921), Child has gone far toward showing the connection between the gradient idea and the full-fledged nervous system through the reflex arc.

The only other set of researches that I appeal to now in support of my view of relation among the elements of the neuromuscular mechanism are those of Chas. S. Sherrington, as set forth in *The Integrative Action of the Nervous System*.

By considerations entirely similar to those already presented, I would maintain that in nearly every instance in which the author uses the word integration and its modifications, conferentiation and its modifications would be a better because a truer term.

The "integrative action" of the nervous system may undoubtedly be correctly regarded as an action which saves the system from disintegration. But such a conception of the action surely falls far short of the main phenomena so well exhibited by Sherrington. The action which he has in mind concerns the deepest nature of the nervous system, not only as to the functioning of the mature system, but as to the coming of it into existence.

Even a mere allusion like this to Sherrington's work must not neglect to mention that the central idea in it is not the relation of the nervous system (receptor-conductor system) to the muscular (effector) system, but rather the relation of the parts of the nervous system to one another. The muscles are treated more from the standpoint of means of discovering the relations among the nerves, than as parts coordinate and reciprocal in importance with the nerves. From this standpoint Sherrington's and Parker's work supplement each other admirably, Parker's outlook being, as we have seen, so commandingly that of the "*neuromuscular mechanism*."

My next remarks under this subhead call attention to the way

in which lack of some such word as conferentiation may not only result, as we have seen, in uses of integration which carry wrong implication, but may also result in similar misfortune as to the use of differentiation.

Consider, for example, the phrase "fully differentiated nervous system," very commonly used to characterize the nervous system of higher animals. A moment's reflection, on the mass of evidence that supports the views here outlined, makes it clear that conferentiatedness is just as fundamentally an attribute of such a nervous system as is differentiatedness. This being so it is next to inevitable that general acceptance of the one word, differentiated, for characterizing the nervous system, should lead to neglect of the fact that the antithetic word conferentiated, or some other meaning the same, is not only equally characterizing for the system, but is really necessary in order that differentiated itself shall have any meaning.

For the general description some phrase like "highly developed" or "highly elaborated" ought, obviously, to be substituted for highly differentiated, thus leaving the door wide open for the perception that the developed or elaborated state is essentially two-fold in character.

I venture to clinch the point to which attention is here called by a single illustration. In the concluding chapter of *The Elementary Nervous System* we read (p. 203): "This most highly differentiated type of the neuromuscular system in which an adjustor or central organ has arisen between receptors and effectors represents the final step in the growth of this group of organs." Is it not clear that the getting "*between* receptors and effectors" and serving so to connect them that the connecting part merits the name adjustor, involves an operation that is the opposite of becoming independent, other, and different? But the essence of differentiation is contained alone in such terms as these three. Consequently, if we start out with a general characterization of the neuromuscular or nervous systems which really has reference only to the separate parts or elements of the system, but then go on to give a characterization of it that refers to an essential uniting of these parts or elements, there is obviously an incompleteness and inconsistency, at least, in the statement. And defective statement of this sort is a fertile source of error both as to fact and as to conception, no less in science than in common knowledge.

What I want particularly to emphasize is that the defectiveness to which attention is called is due not so much to the employment of available terminology as to defect in the terminology itself. Defectiveness from lack of words rather than from choice of words, is what confronts us. It would appear that we have here another instance

among the many furnished by the history of science in which investigation brings to light phenomena so remote from ordinary experience that they have not received recognition in common speech.

It remains to notice how relation between muscle and nerve comes into the general scheme of relation among natural bodies, as that was sketched early in this article. The scheme there exhibited was, it will be recalled, made on the basis of the character and extent of the determinative influence which the bodies have on each other, this being a minimum at one extreme (*e.g.*, the influence of gravity on the form and structure of the earth), and a maximum at the other (*e.g.*, the complete obliteration of the identifying attributes of the bodies as in chemical action).

If now one regards from this standpoint the relation between muscle and nerve, and brings these under a single conceptual view, as Parker does, designatable by the expression neuromuscular system, or mechanism, he sees at once that this system's place in the scheme is somewhere midway between the two extremes. A developed muscle, as anatomy and physiology know it, is genuinely itself, and nothing else, and so remains throughout the normal life of the animal to which it belongs, no matter how constantly and vigorously it is acted upon by its nerves; and similarly with the nerves pertaining to that muscle. But at the same time biochemistry, as now developed, leaves no doubt that muscle and nerve are chemically quite different from each other and that both are quite different from the common sensori-motor protoplasmic germ from which they have been derived. And researches such as those of Sherrington, Parker, and Child leave no room for doubt that the difference in structure, function, and chemical composition of the bodies is partly due to their relation to each other—to their action upon each other. Neither could have become what it is all by itself, or independently of the other.

Unquestionably, the muscle as we see it to-day was potential in the contractive aspect of the original protoplasm; and unquestionably, too, the nerve of to-day was potential in the irritable aspect of the same protoplasm. But this potential muscularity and potential neurality of the protoplasm could be brought to reality only by maintaining throughout the evolution the same relation between the two aspects as that which they had in the protoplasmic germ common to the two.

The elaborated neuromuscular system as we see it in higher animals has evolved from its sensori-motor germ by the two-fold process of differentiation and conferentiation.

It is highly desirable to notice finally that such relational and reciprocal action as this is causal, and creative in as fundamental a sense as any action in nature whatever is causal and creative. The ancient notion of Ultimate Causation and Creation, that is, production which is not transformation of something else—production of something now existent from something that previously had no existence whatever—has disappeared from science. In its place has come recognition that since whatever is produced in nature is produced from something else, this something must necessarily have contained potentially that to which it gave rise. In other words, all natural production consists of transformation, this consisting in turn of the coming to actuality of what was before only potentiality. But such transformation seems always to be partly due to “external influences,” *i.e.*, to influences of other bodies upon those which are undergoing change. Nothing appears to be capable of transformation, *i.e.*, of actualizing its own potentialities, by its own absolute self. All natural production is partly relational as well as partly individual.

It seems to me that these reflections considerably modify and in so doing clarify such a view as that of John Stuart Mill expressed by the following: “When there is more life in the units there is more in the mass which is composed of them” (*On Liberty*, 9th ed., James R. Osgood and Company, reprint, p. 121). True, so far as it goes, we should have to say; but impotently true without more truth. For, since the “more life of the units” which puts more life into the mass (human social mass, of course, Mill means) is only *potential* life until made *real* life by being acted upon by other units, many of them human individuals, it is quite as true to say “the more life there is in the mass, the more there is in the units which compose it.”

The potential life merely as such, of a human individual would seem to be no more significant for the purposes of human life than the potential force, merely as such, of a chunk of coal or a stick of dynamite for the uses to which these bodies are put.

There is nothing more in all this than one characterization in highly generalized terms of what seems to be a truth of all natural phenomena whatever. If this is so it follows that although relation in living nature is so peculiar as to need for its expression a term which our language does not possess, this is after all only another among the various kinds of relation among the elements of nature presented by nature as a whole.

So here, from this standpoint also, as from many others, living bodies are not absolutely unique but are natural bodies differing in

kind and degree from those which are not living. But how vastly important difference of kind and degree is when it separates a Shakespeare, a Newton, or a Lincoln, from a crystal, a river, or a planet; or when it separates a Roosevelt alive from a Roosevelt dead!

IV

ILLUSTRATION FROM THE RELATION BETWEEN HUMAN INDIVIDUALS IN SOCIAL GROUPINGS

Useful as the word *conferentiate* would be for clarifying ideas in anatomy and physiology, it would, I believe, be more widely and practically useful for clarifying ideas in the sciences which deal with the relations among men (humanistic sciences, commonly so called). For if it is true, as a present day school of sociology contends, that the individuals in human society exercise a genuinely determinative or causal influence upon one another, the fact might be expected to have a more fundamental biological basis than any sociologists have yet shown it to have.

In fact, the absence of such showing is to my mind one of the serious defects in the teachings of this school. For even here the reciprocal influence of individuals is held to go no farther than to mental and moral attributes. "Only in the physical sense of physical bodies that to the senses are separate is individuality an original datum," says John Dewey. "Individuality in a social and moral sense is something to be wrought out" (*Reconstruction in Philosophy*, p. 194).

I submit that to the philosophical naturalist, the naturalist, that is, whose outlook upon the world is as broadly synthetic as it is deeply analytic, such a gap as is here implied between the physical aspect of the individual on the one hand, and his social and moral aspects on the other, is very disturbing and not to be accepted without the closest scrutiny.

Let us see what such scrutiny finds. To begin with, what about the conception of the physical individual as an "original datum"? Surely it is not original in the sense of being underived. No one in this day would seriously propose to set aside the vast body of knowledge of biological reproduction, the whole of which denies originality so understood.

But further, what about the social and moral individual as "something to be wrought out"? Would any educated person of to-day seriously contend that germinal heredity counts for nothing at all in the social and moral individual?

Thus are we confronted at the very outset of our scrutiny of the supposed gap between physical and moral individualities, with the

question which, from our previous discussion, arises almost automatically. Has not the elaborative process which has produced human individuals, and which has been so manifestly differentiative, been likewise, though less manifestly, in equal measure conferentative? If so, having now provided ourselves with a definite criterion of the kind of relation to which it is proposed to apply the word conferentiate, we ought to be able to recognize the consequences of the process in question.

To this end consider that most striking and fundamental of all relations among individuals, the sex relation; and take this first as exhibited in the most highly developed of the human species. What occurs, let us inquire, when two persons, male and female, "fall in love," genuinely, for the first time? Is not every one who has had the experience absolutely certain that there is something about it wholly unique as contrasted with any of his or her previous experiences? And further, does any one doubt for an instant, once attention is called to the point, that it would have been absolutely impossible for either member of the pair to have had the experience independently of the other as inciting cause?

Love without some one to do the loving and also some one to be loved is unthinkable, as Dante was, so far as I know, the first formally to declare. Yet what obscuration of understanding and deprivation of natural joy have been wrought by the independent personification of this the deepest, most intensely human of all man's experiences! Torn from its natural connections, that is, "abstracted" as we say, by the mind, this master passion has been set to wandering about independently and irresponsibly as Cupid or Eros or Freya or some other being, usually good, but sometimes bad, seeking out unwary and helpless humans to bless or curse as whim may dictate.

Now for the point in this of interest to us: If the lover's experience has something about it to him wholly unique, wholly new, surely his relation with his inamorata has influenced him. His individuality has been thus "wrought out" in some degree. But is this influence, this working out of his individuality, entirely social or moral? Or is it entirely physical? Common experience of all normal men and women can be trusted to give the correct answer to these queries, for even abnormal persons act the right answers although they may not express them in language. The ascetic acknowledges even in his condemnation of it, the physical element in his experience; and the rake acknowledges the spiritual element in his experience even by the brutish sentimentalism with which he treats his paramour.

Nor are we any longer in total darkness as to where and how physical and spiritual overlap and interpenetrate in such phenomena. Sentiment, emotion, passion, the main ingredients of love, are the organism's way of reacting when certain stimuli penetrate to certain of the most deeply situated of the organism's members, notably to certain of its glands. And this means, almost certainly, that such reacting involves the metabolism, the chemical processes of these parts.

So in that relation between man and woman known as love our formula gets illustration again: *Though each of the related pair maintains its identity and individuality, that individuality is determinatively influenced even to its chemical structure, by the relation.*

And now let us turn our attention from the operative, the functional aspect of the love relation, to its originative, its genetic aspect. A moment of such attention will suffice if our inquiry goes directly to the kernel of the matter: given all we now know about sex in the whole world, we see that it is not possible even to imagine, consistently with that knowledge, that either male or female could have evolved independently of the other. Their relation is generatively as well as operatively reciprocal. Indeed, it is a commonplace of zoology and botany that in the considerable number of lowly species of both realms where reproduction is mono-genetic (*i.e.*, one-parental), from the standpoint of sex such reproduction can properly be described only as *sexless*. The terms male and female have no meaning whatever for organisms in which reproduction is unqualifiedly of this character.

In the light, consequently, of all our knowledge of reproduction, an adequate biological definition of marriage would run about as follows: A truly natural marriage, one that is based on affection which enduringly affects the two organisms implicated as physical and spiritual wholes, is a kind of relation between the two individuals, man and woman, which has been developed through that particular differentiation and conferentiation known as sex.

If anyone is impelled to grin derisively at this as not only bombast but heartless bombast, I can do no more than say all right, follow your impulse, if only having done this you will then reflect sufficiently on it to discover how much there is in it that is not bombastic and is not heartless.

Of course the funding or pooling by the marriage relation of two lives into a third, a new one, the child, must not be entirely ignored even for a moment, though this aspect of the matter is not of primary concern to us here excepting in so far as it exemplifies the emergence

of another order of existence, *the family*, this initiating another phase of animate differentiation implying in turn its appropriate conferentiation.

The relation between individuals having now been illustrated by the instance of marriage, our main purpose here does not demand that any more shall be said about such relation. However, before passing on it seems desirable to refer, very briefly, to the general aspect of the matter. Since the love relation between the individual male and the individual female is after all only a special case, even though one so remarkable and with so much in it that is unique, the type relation being that of reciprocal influence through reciprocal stimulus and response, it is inevitable that the type should manifest itself under various other forms than that of sex love, that is, sex attraction and affection. For example, that the influence should in some instances be the opposite of affection, that is, sex repulsion, would be *a priori* probable. That this probability is abundantly realized does not, unfortunately, need affirming, so obvious is it.

Nor does general knowledge of animate beings, especially as concerning stimulus and response, afford any ground for supposing that reciprocal influence of the type to which sex attraction and sex repulsion belong should be restricted to individuals of different sex. As a matter of fact, there is almost no question that the phenomena of sympathy and of suggestion, especially where these are reciprocal, belong to the same general type of relational action and may be between males and other males, and between females and other females, as well as between males and females. A particularly significant query that presents itself at this point is as to whether love or sympathy or suggestion, when acting in only one direction, that is, only from one individual toward another, with no reciprocation, can be regarded as truly organic and so as conferentative.

In view of the fact that the illustrations of conferentiation which we have so far noticed almost certainly influence organic parts and the organism clear down to their chemical structure, we can not escape the query, But how, in such phenomena as mutual love and sympathy and suggestion is such influence possible? How, for instance, can we visualize such a purely mental or spiritual thing as love or sympathy as affecting the chemical composition of the persons involved? Well, undoubtedly the problem is one which from the standpoint of chemical technique is so complex and difficult of access as to seem almost beyond hope of successful attack, yet it is not wholly beyond the reach of physiological research. This brings us in sight, so to speak, of the chemistry involved.

The way leading into the problem is, as is now widely known, such work as that which produced the James-Lange theory of emotion, and still more specifically such investigations as those of Cannon (*Bodily Changes in Pain, Fear and Rage*). It would be beyond the aims of the present writing to touch details in this domain. The following remark, designed to furnish a sort of conning tower for viewing the surrounding country, is all that can be given: If we accept the modern theory of descent in its application to man as to the rest of living nature, among the inevitable consequences is that we must conceive the whole of human life, like that of any other kind of life, to involve fundamentally response to the stimulus incident upon contact with the external world; in other words, incident upon the relation existing between the life and its surrounding world. Again this theory requires us to suppose that the literally numberless similarities between individual man and individual man, as also between man as a species and his ancestral species, involve a very great measure of commonness in reaction to the stimuli above indicated. Now it is certain, quite apart from any theory of the origin of living things, that in the whole vast complex which constitutes the external world of any particular organism, only a very small part, relatively, is immediately vital to the organism, and that *small part is identical or very similar for all organisms*. To illustrate, we have only to remind ourselves of the identity of air, water, and sunshine, and the indispensability of these to a vast range of organisms at least, not to mention the similarity of food in the ordinary sense, requisite to all organisms whatever.

Viewed in this way we should say that, given two or more organisms acting as stimuli upon one another, if these organisms are so much alike as are all human organisms, whatever their race or sex, we should expect *a priori*, that the ensuing reactions would have much in common. This is equivalent to saying that *mutual love, sympathy and suggestion are the names given to certain reactions of human beings upon one another when the relation between them is of the conferentiative type*.

From the standpoint of an adequate biology, not only are such phenomena as mutual love, sympathy and suggestion comprehensible, but *it is incomprehensible that they should not exist*.

V

ILLUSTRATION FROM THE RELATION AMONG ORGANIC GROUPS OF INDIVIDUALS

Our example here will be one of relation among political organizations. We will take the thirteen colonies which were the fore-

runners of the States of our Nation, presenting the case with great brevity.

Having succeeded in separating themselves from the mother country—having been born into the world of political entities—the first period of national infancy was so much differentiated, but so little conferentiated, that political historians hesitate to speak of the States as constituting a nation at all, in that period. Under the Articles of Confederation each of the glorious “Old Thirteen” kept its individuality unimpaired and in this obeyed a general rule of organic development; but efforts of the individual colonies to escape the other equally important rule, that of undergoing determinative modification, were so insistent that it came perilously near succeeding and resulting in the death of the infant. Death-dealing disintegration rather than life-giving conferentiation almost supervened. Fortunately, however, the vitally constructive instincts and intelligence of the people finally prevailed. The interacting units submitted to so much of individual modification as was indispensable to continued life and development of the whole. A truly animate political body was produced, the basis of a real nation, with our Constitution as its organic law. And national life and growth were so far assured.

“So far assured,” I say, because this assurance could not, in the very nature of organic life, constitute an assurance for all time. No nation knows its real nature as a living body until it knows that every step of differential growth must have its corresponding step of conferential growth sooner or later if its life is to continue in health and strength and increasing self-realization.

In the proportion that any nation or any individual human is truly conscious of its “destiny,” it is conscious that its existence and growth can not consist merely in being big and stout, but must consist as well in perpetual *dif- and con-ferentiation*.

How far down through the scale of constituent elements of an organization like a political body modifying relational influences reach, need not be considered here, our particular point having been made when we have noticed that the proximal elements, the several colonies in our example, underwent, some of them especially, considerable modification, though by no means to the extent of seriously impairing their individuality, as they became merged into the Nation. It may, however, be remarked that in all probability the lives of numerous individual men were modified in no small measure through the adoption of the Constitution and formation of the Nation.

And so we might go on testing all manner of entities in living nature, from toadstools to leagues of nations, by the criterion here employed; and if the testing were always done thoroughly and wisely it would always bring the tested case into somewhat clearer light.

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REVIEWS AND ABSTRACTS OF LITERATURE

Lectures on Modern Idealism. JOSIAH ROYCE. New Haven: Yale University Press. 1919. Pp. xii+266.

In this modest work I feel that we have Royce at his best, engaged in the task in which he was happiest, the task of exposition, and in the field where it is perhaps the most difficult. One thinks always of the beginning student of philosophy as beset by the suspicion that, if the philosopher he is studying knew what he was talking about he would discover that he was talking about—nothing whatever; nothing, at any rate, that means anything for other persons or for common sense. I find myself beset by the same suspicion regarding those who fail to interest me. But I have been too often mistaken not to admit the possibility that there may be no philosophy without some basis in common experience, or in possible experience, if only we could find the peculiar angle of experience from which it was, or (just as good) might have been, written. In such discoveries, such sympathetic interpretations, even if at times a little overdrawn, Royce was especially happy. He was ingenious in showing how the most abstruse problems of philosophy stand for difficulties inherent in common experience. And always to the credit of philosophy; for in his view the philosopher is not merely the plain man with a trifling difference of vocabulary, but rather, with all of his vagueness and confusion, the plain man become really alive and intelligent.

These ten lectures form the chapters of a coherent work, constituting a history of modern idealism, and an analysis of the dialectical movement, through Kant, Fichte, Schelling and Hegel. Thus they cover the ground already covered in Royce's *Spirit of Modern Philosophy*. "To literary distinction such as *The Spirit of Modern Philosophy* possesses," says Dr. Loewenberg in his editorial preface, "the present lectures can evidently lay no claim. In range and depth, however, they far surpass the chronicle of the same period in the earlier volume." For myself, I prefer the style of the *Lectures*, as somewhat more sober and more congenial to the

serious reader, while retaining the geniality and ease of manner which made Royce always companionable reading. The book is just the sort of book to which I should direct the layman or scholar in other fields seeking to learn the meaning of German idealism; and incidentally it strikes me as possibly an excellent reading-book or textbook.

It is unnecessary to follow the course of the argument. Two points may, however, be worth noting. First, Royce will make it clear that the fundamental presupposition and *leitmotif* of the idealistic movement, from Kant's deduction of the categories to Hegel's *Phaenomenologie*, is just the fact and meaning of consciousness; or, in equivalent terms, of self-consciousness, self, the person. Thus the whole process of dialectic, however remote it may seem from the world of common reality, is really an attempt to lay bare the constitution and the implications of a plain psychological fact. The most fantastic aspects of the movement only reflect the complications of this fact. Royce spends several pages in demonstrating, in partial vindication of Schelling, that paradox and contradiction are inseparable from any process of intelligence. Hegel's *Phaenomenologie*, he tells us, is, in one aspect, "a study of human nature, as it is expressed in various individuals and social types. From this point of view the title which William James has employed for his book, *The Varieties of Religious Experience*, could well be adapted to characterize Hegel's treatise. It is so far a book describing, in serial order, some varieties of experience which, in Hegel's opinion, are at once characteristic of the general evolution of the higher mental life, and are examples of the transition from common sense naïveté to philosophical reflection" (p. 139). Again, the *Phaenomenologie* may be viewed as the biography of the world-spirit—the life of the world-spirit consisting of a series of stages which may be compared to different incarnations or migrations. And the Absolute—essentially a social conception, bound up with a practical social philosophy—is the society of spirits, yet also itself a spirit, the spirit of spirits, the consciousness of consciousnesses necessary to make each consciousness a finally conscious fact.

The metaphysical presupposition of all idealism is, therefore, that to be is to be conscious, or to be a person, or a self. Are you seeking reality? Well, here am I. I am real. Nothing is more real. And whatever you can find in me will be what you seek. This humanistic prejudice, if it be such, furnishes the foundation for the idealistic logic and the source and explanation of the exclusive identification of the real with the rational. It is then interesting to note Royce's careful statement that even for Hegel

the real was not quite exclusively the rational. For in Hegel's view there is found always, after reason has done its best, a certain residuum of the opaque and the fortuitous. Royce makes this explanation, not as an admission that Hegel lacked the courage of his prejudice, but rather as a vindication of Hegel's sanity and common sense. But it would be interesting to learn what bearing this should have upon our final estimate of the value and function of Hegel's philosophy; and of the philosophy of Royce.

The other point to be mentioned is Royce's showing that these absolute idealists were all pragmatists—though none the less absolutists. Readers of Royce will recall the pragmatic strain introduced into his own philosophy by the refusal to separate intelligence and will. But what interests me most in this connection, though the observation ought not to be novel, is the similarity, amounting to identity, between Dewey's functional theory of consciousness and the Hegelian dialectic. For both views it seems that the function of consciousness is simply to resolve older difficulties and conflicts while creating newer ones on a higher level, and for both the distinction of subject and object is the product of this function; and the question is suggested, whether the functional theory of consciousness was a discovery of biology or of dialectic.

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Nietzsche, sa Vie et sa Pensée: Les Précurseurs de Nietzsche.

CHARLES ANDLER. Paris: Editions Bossard. 1920. Pp. 384.

The professor of German literature at the Sorbonne gives us here the first instalment of a comprehensive work on Nietzsche—the most comprehensive yet essayed. It is to be completed in five later volumes, entitled as follows: *La Jeunesse de Nietzsche (jusqu'à la rupture avec Bayreuth)*; *Nietzsche et le Pessimisme esthétique*; *Nietzsche et le Transformisme intellectuel*; *La Maturité de Nietzsche (jusqu'à sa mort)*; and *La dernière Philosophie de Nietzsche (le renouvellement de toutes les valeurs)*. Volumes II, III and IV may be expected soon—they are in press; Volumes V and VI are in active preparation. The present volume had just gone to press "at the hour of the battle of the Marne" (1914); very properly, then, it is dedicated to the memory of M. Andler's colleague, M. Robert Gauthiot, and of twenty-two of his pupils, "*germanistes Français*, who gave their lives for their country, and for the European civilization in which, as they always believed, the Germany of Goethe, Beethoven and Nietzsche must recover its place." Moreover, the Dedication gives the clue to M. Andler's standpoint, that of the Good European.

Even were M. Andler not the author, it is palpable that this would

be a work of first rate importance; M. Andler being the author, it is equally palpable that anything like competent review must await the appearance of the larger part at least of the sequel. Meanwhile, we have a fascinating foretaste.

As I had an opportunity to indicate recently, Nietzsche swept over my horizon nearly thirty-four years ago.¹ And, endeavoring to explain why I must differ from Mr. W. M. Salter's admirable monograph, I said:

"Nietzsche may veritably prove the last representative of the 'secret infinity' so characteristic of the essential spirit of romanticism—the ultimate romantic. *Ne plus ultra*. As for me, I have never been able to see him otherwise. We can not understand the continuous thunderstorm reverberating in his mind unless we have due regard to the oppugnant forces that had focus there, rendering him at once so suggestive and so puzzling, so remarkable and, no less, chuck-full of impossible dogma. His phases are no accident. Take them as basis for charges of inconsistency, and you rule yourself out of court. . . . How secondary the rôle played by the sobriety of philosophy when one views the incandescent phenomenon in this way. . . . On the other hand, we constantly recognize the accent, nay the phraseology of Tieck, Fr. Schlegel, Schleiermacher, Arndt, Kleist, Immerman and, very significantly, the mood of the Feuerbach-Wagner episode ("*das Junge Deutschland*"), now almost forgotten in our approved texts. . . . The doublets in Nietzsche are close enough to be called weird. . . . As I see it, then, we must approach Nietzsche from some such angle rather than from the objectivities of philosophy. But if so, another generation may well have to pass ere the time will be ripe."

I also drew attention to the influence of the Renaissance, especially of its ideal, *nobilità* (*Vornehmheit*), and of Emerson. Evidently, M. Andler has leaped my "generation." For he adopts substantially my point of view about the romantics; dedicates a long discussion to the influence of the Renaissance as Nietzsche felt it through his friend and colleague, Jacob Burckhardt; and, giving me good measure, closes his volume with a chapter on Emerson!

It were superfluous to record that he reveals much I had not caught, particularly about Schiller and, in a measure, about Hoelderlin and Fichte. But a curious paradox discloses itself the further I read. M. Andler, a professor of literature, tends to stress the influence of the philosophical element in literature upon Nietzsche; while I, a professor of philosophy, have always tended to stress the influence of the imaginative element in literature which, to my thinking, made Nietzsche a prophet. So far, too, M. Andler traces certain metaphysical *clichés* of romanticism in Nietzsche, where I find rather the representative of the final phase of the whole romantic movement. All of which goes to show that, with a person in the Nietzsche mould, the background of the reader counts enormously.

But it is time to outline M. Andler's plan. The body of the volume consists of three books. After a Preface, dealing in general with

¹ Cf. *The Mohist*, Vol. XXXI, pp. 133 f.

Nietzsche's spiritual predecessors, we have, I—*L'Heritage allemand de Nietzsche*, containing six chapters, on Goethe, Schiller, Hoelderlin, Kleist, Fichte and Schopenhauer. The greater importance of Schopenhauer is indicated by the space accorded him,—forty-two pages, compared with eighty-nine distributed over the other five. II—*L'Influence des Moralistes Français*, containing six chapters on Montaigne, Pascal, La Rochefoucauld, Fontenelle, Chamfort, and Stendhal. Pascal and, even more, Stendhal, receive the lion's share of space. III—*L'Action du Cosmopolitisme Contemporain*, with two chapters on J. Burekhardt and Emerson. I am delighted to see M. Andler emphasize Burekhardt's influence by allotting him seventy-five pages; Emerson receives thirty-one. A useful summary, brief but very much to the point, completes the book.

After a very careful reading of the whole, and several readings of parts, mainly to trace subtle affiliations, it would be as easy as it is tempting to take M. Andler's exposition point by point, and to show where it hits the mark, where it seems far-fetched. But, till further volumes are before us, this might well prove unfair, and therefore unprofitable. Let me content myself with saying that, while the various "predecessors" are in Nietzsche, there is a tendency to dwell upon select coincidences of phraseology somewhat to the exclusion of the larger movement peculiar to Romanticism. Anyone can see what I mean by reference to the chapter on Emerson. Naturally enough, perhaps, M. Andler does not altogether grasp the New England genius. Then, too, a cautious consideration of the tendencies of thought in Germany and German Switzerland from 1840 till 1865, when Feuerbach dominated the situation, is a pressing *desideratum*. No doubt the missing synthesis will appear in the sequel, and we shall be delivered from overstress upon obvious romantic *clichés*.

In any case, this foretaste whets appetite, because approach has been taken from the right angle. It would be superfluous to comment upon the scholarship and equipment of the author. They fill one with envy—and expectation.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. January, 1921. *The American Journal of Psychology* (pp. 1-4): G. STANLEY HALL.—A brief account of the founding and development of the *Journal* is given. A brief statement of editorial policy by E. B. Titchener is also added. *Early Psychological Theories of Herbert*

Spencer (pp. 5-15): GEORGE BION DENTON.—Spencer's *The Philosophy of Style* furnishes an insight into his earlier view of psychology. His mature view is represented in his *Principles of Psychology*. The contrast is remarkable for the two were published within three years of each other. The former elings to a faculty psychology, growing out of phrenology, as is illustrated by the discussion of fatigue and attention. *The Comparative Influence of Majority and Expert Opinion* (pp. 16-20): HENRY T. MOORE.—In music and morals the expert's and majorities' opinions hold about equal sway, while in speech the majority will have a ten to seven advantage over the expert. *The Number Forms of a Blind Subject* (pp. 21-25): RAYMOND H. WHEELER and THOMAS D. CUTSFORTH.—An adventitious blind student reported his number forms twice, with two years' time intervening. The images are interesting because of the great use of color and the constancy of the forms. *Some Problems in Regard to Alimentary Sensitivity* (pp. 26-37): IVY G. CAMPBELL.—Observations while the subject was undergoing duodenal tube feedings indicate that hunger is a combined stomach, duodenal and general body sensation, that appetite and hunger are separate sensations, that the stomach certainly and that the duodenum probably have thermal sensitivity. *Pleasantness and Unpleasantness in Relation to Organic Response* (pp. 38-53): PAUL THOMAS YOUNG.—Muscular strains that become more intense follow unpleasant stimulations, while pleasant stimulations are followed by relaxation. *An Experimental Study of Kinaesthetic Imagery* (pp. 54-80): ALICE HENEL SULLIVAN.—Kinesthetic images are simpler, more uniform and lack "body" as compared to kinesthetic sensations. Kinesthetic images referred to oneself elicit response more nearly akin to sensations than those referred to someone or something else. *Affective Tendency as Conditioned by Color and Form* (pp. 81-107): MATSUSABURO YOKSOYAMA.—Color and form are relatively independent of each other in their affective tendency. The preferential order for each remains relatively permanent. *Brentano and Wundt: Empirical and Experimental Psychology* (pp. 108-120): E. B. TITCHENER.—Franz Brentano, who entered the field of psychology through philosophy, and William Wundt, who started out as a physiologist, are compared and contrasted. They both saw the importance of psychology but developed it as a science in entirely different ways. *A Preliminary Study of the Range of Visual Apprehension* (pp. 121-133): SAMUEL FERNBERGER.—Individual limits for simultaneous visual apprehension ranged from 6 to over 11 stimulus dots. *Emotions and Instincts* (pp. 134-144): HENRY C. LINK.—The attempts to regard emotions as psychical and instincts as physical phenomena have led to many

contradictions and absurdities. *Studies from the Psychological Laboratory of Vassar College. The Relation of the Pleasantness of Color Combinations to that of the Colors Seen Singly* (pp. 145-146): M. F. WASHBURN, DOROTHY HAIGHT and JEANETTE REGENSBURG. — Pleasing and displeasing color combinations are not the mere result of the summation of their components, but form another factor that arises out of the combination itself. *Book Reviews* (pp. 147-153). J. Fröbes, *Lehrbuch der experimentellen Psychologie*. W. Wundt, *Vorlesungen über die Menschen und Tierseele*. J. Royce, *Fugitive Essays*. W. James, *Collected Essays and Reviews*. R. B. Perry, *Annotated Bibliography of the Writings of William James*. Mary B. Williams, *Social Scandinavia in the Viking Age*. M. Waxman, *The Philosophy of Don Hasdia Crescas. Notes* (pp. 154-160). Wilhelm Wundt, *Théodore Flournoy, Alexino von Meinong, Elmer Earnest Southard, Systematic Psychology*: E. B. T. *The American Psychological Association*: E. G. B. *Recognition of faces*: E. C. S. *A further word on superstitions*: EDMUND S. CONKLIN. *Combinational tones registered by the tonoscope*: EVELYN GOUGH.

- Avey, Albert Edwin. *Readings in Philosophy*. Columbus, Ohio: R. G. Adams Co. 1921. Pp. 683.
- Wundt, Wilhelm. *Elements of Folk Psychology: Outlines of a Psychological History of the Development of Mankind*. Authorized translation by Edward Leroy Schaub. Revised edition. New York: The Macmillan Co. 1921. Pp. xxiii + 532.

NOTES AND NEWS

The April-June number of the *Revue de Métaphysique et de Morale* is a special number of nearly 500 pages devoted to present problems in economics. In a preface the editors set forth their reasons for undertaking such a study. They point out that the predominance of the economic motive during the war and the present necessity for restoring the wealth which has been destroyed, have focused attention in the last few years almost entirely upon pursuits of immediate practical interest to the neglect of disinterested intellectual research. "And yet, in the domain of material interests, as in that of productive technique, the utility of theoretic thought can less than ever be ignored. . . . In theory, we need an instrument of interpretation forged by reflection, comparison and analysis, and capable of discovering, in spite of appearances, the true origins of phenomena. In practise, we need a constructive imagination, able to fix harmoni-

ous ends for a collective activity which, without this, will be given over to the guidance of obsolete formulas borrowed by governments from the empiricism of a vanished past. A *Review* such as this ought just at this time to attempt a synthesis, even though incomplete, of what the economic reflection of recent years has been able to bring to the solution of this double problem. It remains faithful to its character in showing in the economic field, as it has done in that of more established sciences, the practical fecundity of theoretic research, the close bond that exists between concrete life and abstract thought. It remains faithful to it also in inviting foreign economists, as well as French, to collaborate in this task."

Announcement is made of the organization of the New York Association of Consulting Psychologists, with the purpose of promoting "high standards of professional qualifications for consulting psychologists" and "stimulating research work in the field of psychological analysis and evaluation." A minimum of two years of graduate study in psychology is required for membership. The association has already begun active work in giving psychological examinations to children, and the Board of Education is planning to use the results of these tests in reorganizing the classes in the schools. The Executive Committee for the current year are: David Mitchell, president; Louis A. Pechstein, vice-president; Elizabeth A. Walsh, secretary-treasurer; Elizabeth E. Farrell, Samuel B. Heckman, Leta S. Hollingworth and Robert S. Woodworth.

The following new appointments have been made in the Department of Philosophy at the University of Illinois: Professor M. T. McClure of Tulane University, to be associate professor; and Dr. Sterling P. Lamprecht to be assistant professor.

Dr. Charles Josey has been appointed instructor in psychology at Dartmouth College.

Professor Maurice deWulf, formerly of the University of Louvain and more recently Lowell lecturer at Harvard, has accepted a permanent appointment as Professor of Philosophy at Harvard.

The Second International Congress of Eugenics will be held at the American Museum of Natural History in New York City, September 22-28, 1921.

The Western Association of Psychologists met with the Western Division of the American Association for the Advancement of Science August 4-6 at the University of California.

THE JOURNAL OF PHILOSOPHY

THE STRUCTURE OF LOGIC AND ITS RELATION
TO OTHER SYSTEMS¹

There are, in general, three types of logical theory: (1) The view which treats logic as formal and at the same time as concerned with the actual modes of right thinking. Traditional logic is of this type. (2) The view which regards logic as concerned with the actual processes of right thinking, and *for that reason* repudiates the formalistic conception of logic as inadequate. The so-called "modern logic" illustrates this type. (3) The view which treats logic as formal and renounces all attempts to portray the actual psychological processes which lead to the discovery of truth. Recent mathematical logic—what Mr. Spaulding has called the "new logic"—belongs to this type.

The critical comparison of these three theories is an important and interesting topic, but it can not be accomplished in a twenty-minute paper. Instead, we shall here take the third type of view as our point of departure, and proceed to certain consequences of it which concern the application of logic to more general problems.

From the present point of view, then, logic does not have to do with the modes of reasoning, either actual or ideal, but only with *criteria* of validity in inference—or, viewed in another way, with the fundamental types of order. It is related to our thought processes somewhat as the tests of an artistic masterpiece might be related to the psychology of genius. We throw our ideas into the deductive forms for the sake of testing their consistency; we seldom do or can make use of them in the actual constructive process of thinking.

No criticism is here implied of any investigation of those thought-processes which normally lead to correct results. When the coincidence of forms of thought with modes of logic is given up, the portrayal of the normal or typical successful thought-process is no less important for being separated from logic. The "new" logicians can recognize the significance of this problem, set by the "modern" logicians, even if the "modern" logicians refuse to return the compliment. The insistence is only upon the separation of questions of psychology from questions of validity.

¹ Read, with omissions, at the twentieth meeting of the American Philosophical Association, at Columbia University, Dec. 29, 1920.

Again, the new logic regards the deductive system not as a method of proving truth so much as a method of presenting results and establishing relations. The most successful logical structures which thought has produced are the systems of deductive mathematics. The illusion that such systems are demonstrations of complex facts from simple and self-evident axioms was dispelled by non-Euclidean geometry and investigations of the infinite. In modern developments, the selection of primitive propositions is governed solely by their deductive power and simplicity and by the system which is to be developed. Such postulates are no more evident or certain than theorems. Frequently they are less so. *Principia Mathematica* triumphantly demonstrates on page 83 of volume II that $m + n = n + m$, but some of its postulates are fairly dubious (the "axiom of reducibility" for example). It is as much the assumptions which are verified by the theorems as the reverse. Or, more accurately, it is the internal order of the system and its *general* conformity to fact which helps to verify any particular proposition which might otherwise be in doubt. Such verification—as it is important to note—is always partial and inductive, since it is possible that another deductive system, with slightly different and equally acceptable assumptions, may contain all the propositions observed to conform to fact and exclude those which are in doubt. The more or less deductive developments of "Newtonian" and relativity physical theory may serve as an illustration.

It is an important consequence of this view that the attempt to establish incontrovertible truth by deductive procedures is nugatory. The traditional rationalistic conception that metaphysical first principles can be shown to be logically necessary, or that what is logically prior is more certain or self-evident, is a conception to which the actual structure of logical systems lends no support. In genuinely rigorous deductive systems, "logically prior" means only "deductively more powerful" or "simpler." The supposed necessity of presuppositions most frequently turns out to be nothing more significant than lack of imagination and ingenuity. And in the remaining cases, that which is presupposed is not, by that fact, proved true. The plurality of possible beginnings for the same system, and the plurality of equally cogent systems which may contain the *same* body of already verified propositions but differ in *what else* they include, dispel the notion of indispensability or peculiar importance in that which is logically prior.

An exception to these strictures will probably be urged for the fundamental principles of logic itself. The laws of logic—it will be said—are not only presupposed by science and rational investigation in general, but their necessary truth is further attested

by the fact that they are implied by the very attempt to negate them. To deny them is to reaffirm them. Here is a veritable foundation stone for the rationalistic procedure. Here is the indubitable basis upon which we can build anew the entire structure of exact science, and perhaps eventually of philosophy, assuming only that which no rational mind can deny. Is not this what the most notable examples of the new logic themselves make evident?

But the laws of logic are, in fact, no exception. That the denial of a proposition leads to its reaffirmation, by no means establishes its truth. This foundation stone will not bear its own weight, to say nothing of the proposed superstructure. To see that this is so, we must first examine the nature of "reaffirmation through denial." Whoever asserts a self-contradictory proposition does not in one and the same breath affirm and deny the content of his assertion. He affirms it in fact; he denies it by implication only. Or to put it otherwise: he affirms it, and the question whether he also denies it is the question of what his assertion implies. Now the question of what an assertion implies, is precisely a question of logic. The content of logic is the principles of inference. Whoever, then, denies a principle of logic, may either draw his own inferences according to the principle he denies, or he may consistently avoid that principle in deriving his conclusions. If one deny a principle of inference, but inadvertently reintroduce it in drawing conclusions from his statement, he will indeed find that he has contradicted himself and admitted what originally he denied. But if he denies a principle of inference and consistently reasons in accordance with his own statement, he need incur no self-contradiction whatever.

It is a fact that for one who stands *within* a given system of logic, the denial of one of its principles will imply the principle itself. But this signifies nothing more profound than the fact that deductions *in* logic are inevitably circular.² In deducing our theorems of logic, we must make use of the very principles which the deduction is supposed to demonstrate. If, then, I use "bad" logical premises but "good" logical reasoning, I shall contradict myself, quite as surely as if I use two premises which are mutually inconsistent. Perhaps an example here will be of assistance. Take the law of contradiction in the form, "That x is A and x is not A , is false." Its contradictory will be, " x is A and x is not A ." Let us take this last statement as a premise and draw the inferences from it.

² Omitting from consideration the development of logic, as a purely abstract system, by the "operational" instead of the "postulatory" method. These omitted considerations serve to strengthen, not to weaken, what we here set forth.

(1) " x is A and x is not A " implies its latter half, " x is not A ."

(2) " x is not A " implies "It is false that x is A ."

(3) "It is false that x is A " implies "That x is A and x is not A , is false." (Just as "'Today is Monday' is false" implies "That today is Monday and it is raining, is false.") Thus from the denial of the law of contradiction, we have deduced the law of contradiction itself. But we have done so only because, though denying it in the premise, we have reintroduced it in step (2) of the reasoning. If we had, consistently with the premise, refused to take step (2), we should never have got any such conclusion.

Every good or correct logic, then, will be such that its principles are undeniable without contradiction; the denial of any one of them leads to formal inconsistency. But this is true only because so long as we remain *within* our system of logic, we shall use the very principle in question in drawing inferences from the denial of it, and thus beg the question of its truth.

A *good* logic *must* be circular. But what should lead anyone to suppose that this character belongs exclusively to systems of *good* logic? Apparently those who set store by the "reaffirmation through denial" have committed the fallacy of illicit conversion: they have reasoned; "A logic whose principles are true will give their reaffirmation through denial. Therefore, whatever principles meet this test must be true."

All logic and pseudo-logic, is similarly circular. A little ingenuity suffices to construct a bad logic in which, reasoning badly according to our bad principles, we always get consistently bad results. And if we deny one of these principles, still by sticking to our bad method of reasoning, we can reaffirm the bad principle in conclusion.³ Since a bad logic, whose principles are false, may still be such that the denial of any one of these principles will lead to its reaffirmation, it follows that the test of "reaffirmation through denial" does not, in logic, prove the truth of the principle thus reaffirmed.

³ One family of such systems—consistent in their own terms, and such that the denial of any principle leads to its reaffirmation as a consequence—is determined by the presence in the system of the proposition

$$q < [p < (p < q)]$$

where p , q , etc. are propositions, and $p < q$ represents " p implies q ," or "if p is asserted, q may be asserted." This proposition allows of two distinct meanings of $p < q$, neither of which coincides with the usual one; and the properties of this relation may be further specified in a variety of ways. *Some* of the systems in this family might be regarded as "good" logic, but most of them are "bad." Such a "bad" logic may be developed logistically from the following formal postulates:

It should be added, to avoid misunderstanding, that in spite of what has just been said, the test of self-criticism or circularity is a valuable test of any deductive development of logic. That the principles proved are precisely the principles used in the demonstration of them, is here a matter for congratulation. That the method of our proof coincides with the result of it, is a test of both method and result. It is not a test of truth, however; it is a test of formal or methodological consistency. The error of taking self-criticism to be a test of logical *truth* lies in overlooking the fact that a thoroughly false logic may still possess this merely methodological consistency.

One further bit of explanation seems required also. We do not mean to say that there are no necessary propositions. Whoever takes a given logic to be true will find its principles undeniable without contradiction (*i.e.*, in his logic) and therefore necessary. Some logic is true, and hence some logical principles are necessary. The point is simply that the truths of logic are not *proved* by any such procedure—since, as proof, it always begs the question. The basic necessities can not be proved but only recognized or assumed—and they are assumed at the risk of error.

This disposes of “reaffirmation through denial” as a test of logical truth sufficient to establish first premises. But it may still be questioned whether the test has not valuable applications outside logic altogether. One may admit its insufficiency to establish the truth of a logical principle, should that logical principle really be in doubt; but one may still urge that, once the principles of logic have been recognized and accepted, this test of reaffirmation through denial becomes applicable outside the field of logic, and that, furthermore, the use of the test outside logic does not involve any circularity.

The answer is that there are, in fact, necessary and self-contradictory propositions which are not of logical import, and that the test in question would be entirely legitimate and final here if it were not for the unfortunate circumstance that whatever is taken

$$A. \quad \neg(\neg p) = p \quad (\text{Def. of } \neg p, \text{ the denial of } p)$$

$$B. \quad \neg(p < \neg p)$$

$$C. \quad (p < q) < (\neg q < \neg p)$$

$$D. \quad [p < (q < r)] < [q < (p < r)]$$

$$E. \quad (q < r) < [(p < q) < (p < r)]$$

$$F. \quad (p < q) < (\neg p < \neg q)$$

Postulate F is obviously false as a general law of implication. It is interesting that postulate B seems to exclude the possibility that any proposition should lead to its own denial as a consequence, yet if P be any principle of the system, we can prove that $\neg P < (\neg P < P)$. Hence the assertion of $\neg P$ leads to the assertion $(\neg P < P)$.

to be thus established will be found in each instance either to have been already assumed or not to be really demonstrated. Any case in which this test is supposedly used to establish truth should be subject to close scrutiny; there is always a colored gentleman in the woodpile. Indeed, the fallacies involved in current examples of the reaffirmed-through-denial and the self-contradictory are so simple as hardly to need pointing out.

For example, the fallacy of arguing from the undeniable existence of thinking to the self which does the thinking vitiates Descartes's use of the "I think." But quite apart from that, the man who should assert "I am not thinking," so far from contradicting himself, would give the best possible evidence of the truth of his statement. The proposition, "I am not thinking," does not imply, "I am thinking." It may be that the attitude of will which we suppose to underlie the making of *any* assertion is such as to be incompatible with the admission, "I am not thinking," so that we may be sure that whoever could make such a statement would find himself at cross purposes. But the reason for this is contained neither in the proposition nor in any implication of it. There is here no logical inconsistency whatever.

Again, it is said that the statement "There are no propositions" is self-contradictory—because it is itself a proposition. So far from being self-contradictory, it is quite plausible. There are important considerations which point to the conclusion that the idea of a proposition is one which can never be exemplified in human speech or thought—that "proposition" is a sort of ideal like the absolute good. Also, we may note in passing that Mr. Russell, who admits the existence of propositions, would deny that "There are no propositions" is itself a proposition. But suppose we forget all this, and agree that it is a proposition. Still it is not self-contradictory. It *is* a proposition—we agree—but it neither states nor implies that it is a proposition. A proposition does not assert its own existence any more than a bar of pig-iron asserts its own existence. What a proposition asserts is its *content*. Moreover, even if it *did* imply its own existence, it would not serve as an example of "reaffirmation through denial" proving new truth. For whoever assumes that "There are no propositions" is itself a proposition, has assumed already that there are propositions and that this one is false. But if one does *not* assume that "There are no propositions" is itself a proposition, then its implication of its own existence would not be the implication that *a proposition* exists, and no contradiction would develop.

These two examples are typical. There *are* necessary propositions, and some of them can be proved—from other necessary

propositions as premises—but they can not be proved by being implied by their own denial. Without qualification, nothing can be shown to be so implied unless it is already assumed. The use of reaffirmation through denial is never legitimate as demonstration of new truth, though it *is* legitimate, and frequently valuable, as a means of pointing out inconsistency of assumption.

Questions of logical priority are often confused by use of the term “presuppose.” This word has no single meaning, but it is commonly used to designate what is logically prior with the added thought that it is also necessary. Correctly speaking, what is logically prior to X , will imply X , but it will not, in general, be implied by X . In the language of mathematics, if A is logically prior to B , then A must be a sufficient condition of B or at least one of a sufficient set of conditions; but “sufficient condition” must not be confused with “necessary condition.”

Frequently, there is a concealed argument from the particular to the general in the appeal to “presupposition.” Physics presupposes mathematics in the sense that physics can not be developed without mathematics, while mathematics contains no necessary reference to physics. And in the same sense all the special sciences presuppose logic. But if what is presupposed in this sense be regarded as thereby established or proved necessary, the fallacy involved is easily detected. If I assert that two feet and two feet are four feet, I do not thereby commit myself to the proposition that $2 + 2 = 4$. It is required only that this should be true of linear measure. Gases under pressure or living organisms might—for all that is here in question—be governed by very different mathematical laws. The particular fact does not even require that there should be *any* general laws of mathematics. There can be little doubt that this fallacy has played its part in the traditional *a priori*. Presuppositions, so called, are always general in their import. The facts that presuppose them are particulars. Now A is not a necessary condition of B unless “ A is false” implies “ B is false,” *i.e.*, unless B implies A . *No general principle is a necessary condition of any particular fact or assertion unless the particular fact or assertion implies the general principle.*⁴ And even

⁴ If I am not mistaken, there is such a class of general principles which are genuinely implied by all subsumed particulars—the laws of logic. This depends, however, upon a meaning of “implies” which can not here be taken for granted. Further, the discussion of this class of “necessary presuppositions” would alter nothing which precedes, since these presuppositions can not be *proved* from the fact that they are thus universally implied. The reason is obvious: they would have to be first assumed in order to provide the demonstration itself. They are “presupposed” in exactly the same sense that they are “necessary”—that is, only in the system in which they are *first assumed*.

if this should be the case, it would be the particular and not the general which was, so far, logically prior and the original premise.

If we avoid this fallacy and take "A presupposes B" to mean "A is necessary condition of B," *i.e.*, "B implies A," then we should be so cluttered up with presuppositions that the fine glamour of the word would be wholly lost. Presuppositions would be truly necessary conditions—that is, relatively necessary—but instead of being first facts they would be last facts, or later facts, and would ordinarily rest upon all sorts of assumptions. Their necessity would ordinarily be whatever necessity had already been established for the fact which presupposed them—that and nothing more.

There are two further meanings of "presupposition"⁵—two which differ from the previous ones by affording some ground for the metaphysical respect in which presuppositions have been held. "Presupposition" may be taken in the literal meaning of "earlier assumption." Mathematics truly stands to the laws of physics in this relation, and logic to all the special sciences. So understood, a presupposition is logically prior. But the idea of necessity is given up. Where the body of facts which such a presupposition implies is considerable and well established, and there are no implications of it which are known to be false, the presupposition gains that kind of verification which particulars can give to general principles—that is, the partial and inductive verification of it as an original hypothesis.

The one remaining meaning which has been referred to attaches to "presupposition" a significance which is psychological rather than logical. It may be maintained that certain general laws are required, not in the sense of being logically inescapable, but in the sense that they are *necessarily assumed* by every rational mind. It seems likely that historical rationalism has regarded the fundamental necessities as psychological in precisely this sense. If there are universal presuppositions in this sense, their necessity is simply the necessity which a rational being recognizes in the criteria of his own rationality. So viewed, the crux of the question concerns the existence or non-existence of such universality of rational intent.

The discussion of this question is not strictly required for our point, because what is necessarily assumed is confessedly such that its necessity is incapable of demonstration. But it may be of value

⁵ I omit from consideration a meaning which Mr. Spaulding has given—"p presupposes q when 'p implies q' implies 'q implies p'"—because I have never been able to exemplify it. One comment may be made: if 'p implies q' implies 'q implies p', then p and q are equivalent propositions, and hence *equally* necessary.

to indicate briefly a point of view which is compatible with what precedes, and to suggest some of the reasons for it.

If there are any such universal principles of rational activity, we should certainly expect to find them exemplified in logic, since inference is the very archetype and exemplar of rational action in general. If there is any universality of rational intent, it will most clearly exhibit itself in a common logical sense.

Now whoever enters a discussion, pragmatically assumes that the logical sense of those engaged is the same with his. The pursuit of common enterprises, regarded as rational, rests at bottom upon a similar assumption. But in making this assumption—as we are frequently aware—we take a certain risk. In the interest of our rational enterprise we must take this risk. The principles of rationality—in logic as well as in ethics, jurisprudence, and politics—are not empirical facts but social demands. They are ideals; and ideals are things which do not exist as empirical facts. They do not exist even as universality of intent. The only common ideal is the ideal of unanimity—the demand of each that all shall agree with him. And this is as true in logic as in other matters. The facts of social life evidence a fairly general unanimity about the criteria of valid inference. But precisely where we should hope to find this unanimity complete—that is, amongst students of logic—it is, in fact, most notably and lamentably absent. The ideal of a universal logical sense is one strongly demanded by its importance to all social enterprises, and is more closely approximated in fact than most of our ideals. But sticking to facts, in the spirit of facts, we are obliged to admit that it does not completely exist and probably never will. It is easy to beg the question by defining “rationality” in one’s own terms. But that can lead only to the familiar conclusion, “All the world is strange save thee and me—and thee’s a little strange.” With respect to ideals, we all of us stand in the ego-centric predicament; we can only assert our own and hope for agreement.

The whole development of the last quarter century goes to enforce the fact that no deductive system, logic itself included, can justly claim to be demonstration of certain truth from indispensable first principles. That is not what a deductive system is. Instead, as has been said, it is simply the orderly exhibition of certain important relations *amongst* facts or propositions. Whatever verification it affords extends quite as much and quite as simply to premises or assumptions as to conclusions. Such verification can never be complete or final except for those who are already determined to accept what the system sets forth as absolute truth.

It may seem to some that what the preceding discussion has chiefly demonstrated is the unimportance of deduction in general and the new logic in particular. Such a conclusion would be hasty. What the new logic is, in fact, capable of revealing is the existence of a new method for philosophy—or a new significance for the old deductive procedure—which has not yet been sufficiently recognized and exploited. It offers the deductive procedure, *not as a method of proof but a method of analysis*. Instead of taking the field of arithmetic, or of logic, *etc.*, as one in which indispensable premises are to lead to previously uncertain or undiscovered conclusions by a process of demonstration, it takes the generally accepted facts of arithmetic, or of logic, as a problem for analysis and orderly arrangement. In the process of making such an analysis and reconstructing our facts upon the basis of its results, we may—and most frequently do—come upon previously unsuspected facts or principles which are required by those more commonly recognized. And we may also discover reasons for disarding some conceptions previously accepted. But in general we accept the results of previous experience; the need is not so much to substantiate as to understand those results. For example, long before Dedekind and Cantor, it was sufficiently clear that the *use* of irrationals by mathematicians was a valid one. And the propositions stating their properties in use and their merely functional relations to other numbers were fairly well established. What was *not* clear was the *nature* of the irrationals. The problem was, as Dedekind's title puts it, "*Was sind und was sollen die Zahlen?*"

Similarly, the point of *Principia Mathematica* is not to prove that $m + n = n + m$ and $2 \times 2 = 4$, but to discover the nature of the various types of numbers, to indicate by its orderly development their relation to the more general categories of logic, to investigate the structure of the field of the various mathematical relations, to segregate those propositions which require more than purely logical assumptions, and to state those assumptions most simply and precisely.

Mr. Whitehead's recent book, *Principles of Natural Knowledge*, extends this procedure to the field of fundamental physical concepts. Although this development does not have the character of formal deduction, yet whoever reads it with care and compares it with the earlier study, *Mathematical Concepts of the Physical World*, will discover in it another exemplification of this method of deductive analysis. Here too, we have no *demonstration* of the facts of nature, but an analysis of the real meanings of such familiar terms as "moment," "duration," "point," "motion," "location,"

“coexistent,” and “sequent.” The point is not in the corroboration of proximate physical facts. So viewed, the book might amount to the proof that one and one make two in the physical world, that there are events and things, that the horse can run and the cat can really see. Its significance lies rather in that combination of insight and ingenuity with which proximate facts are analyzed, and the fundamental categories of physical science and our common sense dealings with the external world are cleared of confusion and connected in an orderly way. By such analysis, Mr. Whitehead provides a reasonable basis for accepted fact, but a basis which still is to be regarded as verified by its logical consequences rather than as verifying such consequences.

Whenever our knowledge of a body of facts approaches that completeness which makes it possible, the deductive development of those facts both serves to present them in the most economical way and provides the best possible understanding of their nature. It is by their orderly connection and their common derivation from a few simple ideas that *explanation* of them is afforded. The claim of uniqueness or exclusive truth for such explanation is commonly unwarranted. The same facts may admit of various explanations, from different points of view, *i.e.*, based upon different fundamental categories.

The use of this method has been coupled, most frequently, with a realistic philosophy. But it does not require the more general realistic position. It dictates no metaphysics, and comports also with idealism or pragmatism. The prominence which it gives to such criteria as simplicity and sufficiency, and the emphasis upon plurality of possible developments, are suggestive of pragmatism. The part played by internal consistency, and the verification of particulars through their relation to a systematic whole, emphasize conceptions which are prominent in idealism. It can even be claimed, of course, that the significance here given to the deductive system is essentially the same with that of historic idealism—that the acceptance of the facts of science and common experience and the discovery of more fundamental truths by making of these a problem in explanation, is exactly what Kant and his successors accomplished. The question how far such a claim is warranted, need not here concern us. It is complicated by the fact that the so-called deductions of the post-Kantians are formally defective, that idealism has usually insisted upon a psychological conception of logic, and by the occurrence in some idealistic arguments of the fallacies of presupposition which have been mentioned. Our only concern will be to point out that the claim of indispensability for a single set of first principles, or of exclusive truth for one method

of analysis—the idea of the traditional *a priori*—is a claim which finds no place in the newer method and no justification in the logic which it applies.

To be sure, it is reasonable to suppose that as deductive analysis conquers successively larger and more varied fields of fact and brings these special fields into consonance by explanations of a higher order, the number of possible modes of development will be restricted. Perhaps finally, when human wisdom shall be summed up in an all-embracing and systematic deduction of everything, only one such analysis will be found possible and adequate. But an eventuality so remote does not warrant serious consideration.

It is just in the notion that the most general questions are presently capable of unique solution by a deductive procedure that traditional rationalism commits its glaring error. The fact is, of course, that the method is more applicable to subordinate questions than to such general problems. It is only when our knowledge of proximate facts becomes fairly comprehensive, detailed, and exact, that deductive analysis is capable of rendering valuable service. But it is also just to remark that it is precisely where no such procedure is applicable that the results of philosophic investigation are least subject to logical criteria and, consequently, most liable to error. The most general problems of philosophy are a field for speculation rather than proof. Yet even here, the mental habit which this method enforces—the search for explanation through analysis and open-minded consideration of alternative possibilities—has a value which should not be disregarded.

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THE ESTHETIC HERESY

THE basis of life is natural and hence, or at least at the same time, irrational. The basis I mean quite literally. That is we grow out of a subhuman, subrational matrix, and we are composed of impulses, instincts—whatever they are to be called—which simply are there and work, one of them being that irrational element of our makeup that we call reason—say the instinct of reason. It is the development of this that shows us that not all of our impulses can be gratified at will, or rather as they make themselves felt, as they just occur. For on the one hand they are seen to conflict with each other; and on the other hand our powers of representation put before us gradually a series of ideas that we hold together in the end as ideals—finished-off representations in

the mind of desirable states to be in, desirable activities to be at, desirable conditions to have realized—satisfactory consummations appropriate to human beings living with other human beings in this world. But to realize such consummations we see at once, or at least in time and at length, requires not only technically expert activities possible to our capacities, but the actual control or even repression of many impulses in the interest of others. Thus on two grounds we have to judge and weigh natural impulses, to repress some, to encourage others, and always under the guidance of the rational impulse itself, which by means of science indicates real possibilities and by means of logic and reflection—imagination, that is, or the powers of representation—distinguishes desirable ends. Thus the instinctive life of impulse itself is “rationalized” by one of its own fundamentally irrational, that is unaccountable, impulses or instincts.

Now this makes of life a purely earthly affair to be justified on purely naturalistic principles; life is good if it is humanly satisfactory. There are no other more rational criteria by which to judge its value. The valuable life is just that life which a rational creature values, prefers. And valuing and preference are ultimately irrational and simply given, not at birth, of course, but at any particular time at which a human being *has* a preference.

Nor does this make life any the less noble or beautiful or fine or divine. For all these words have merely the meanings given them by human imaginations. Nor are the values of life less real because they are given to it by man himself. In fact, these man-given values are all that life ever has had or could possibly be meant by us to have. For *all* value is given by man; it is the man-invented name for what men want. Beauty and goodness and truth do not occur in reality as such. Reality is real and out there and independent of us, for we are simply parts of it and no more real than the other parts. But we react instinctively to reality as it comes to us through the senses, and certain sights and sounds for example we like. As we grow more expert at seeing and hearing we like more complex sights and sounds. And so on to esthetic appreciation of the highest type, that is of the most complex sort, involving more intricate co-ordination mentally and quicker and more acute perception.

So too acts and characters are seen to be good as they serve human interests. If there were no interests, one act would be as good as another. And so even of truth. It is a quality of human judgments involving a relation between an actual fact which simply is and the mental recognition of the fact. The facts

are merely; the recognition and the expression of them satisfy us, have the sort of value that we call truth.

But the criterion in all these cases is esthetic; it is direct contemplation satisfactory to the contemplating mind. So that the only source of value is a mind satisfied with a particular object in its contemplation, and the only test of value such satisfaction. All value is thus essentially esthetic in a sound and useful—not to say in the only consistent—meaning of the word *esthetic*.

It would follow from this that the typically happy human activity is the enjoyment of art, both in the making and as completed. More than this, it would follow that artistic activity is the sole satisfying vocation of man, that technical training in the arts is the first human want and the last, that the methods and processes of the arts are the first interest of science, and that the one pressing business of philosophy, now that we may fairly claim to be rid of ghosts and spirits and heavens, is to take seriously this sole desirable occupation of men on earth. As men live but once, so far as we know, they may well ask an honest, straightforward account of life, in which it would appear that the proper employment of intelligence is the attempt to gain happiness.

But this is going beyond our authorities. We began with nothing more than modern naturalism—Santayana's, in the main, with some little support from the realists. But the trail all at once grows dim; for it seems that in philosophy we are really for some reason not to take art seriously, that we are not to seek our happiness as it so clearly lies before us; that after all the sense in which all value is esthetic is a heretical sense, and that the actual content of the liberal life is not the subject matter of orthodox, or say authentic, philosophy.

That we should not mainly seek our happiness seems to be sheer asceticism or even puritanical evasion, characteristically negative and indirect; it is the creed of spirits rendered illiberal by the exhaustion of their forces in a struggle to establish the bare conditions of a happy life, the conditions necessary to merely living on the earth among men. And heretics indeed we are to call value itself esthetic and to make philosophy the servant of art, and at the best one of its forms. Santayana himself is a case in point; the anomaly of his being a New England philosopher is offset by that other anomaly, that he was allowed to escape from the wealthiest and most powerful of New England's universities. Both anomalies are easily explicable in terms of heresy; heretics can appear only where there is an orthodox faith, and heretics are no less eager for their freedom than is an orthodox community to be purged of them. Santayana's very concept and practise of

philosophy is tainted by this esthetic heresy. His calm aloofness in the *Life of Reason*, combined with the last degree of alertness in observation and steady keenness of insight—what is this but the assumption of the esthetic attitude in philosophical criticism?

But there is no need of confusing issues. It is not Santayana's type of thinking that needs defense; all that he lacks is adequate and intelligent, but also inevitable, appreciation. Moreover, so far as possible, I should wish not to defend my case but to give it away. It must win of its own crude and obvious weight. The fact simply is that modern naturalism and modern value-theory put art and the technique of the arts in a new light. For if they make anything clear, they make clear the sense in which all value is esthetic; and more than this, the sense in which the criterion of value is esthetic. For what do we value? That which, to turn Aristotle to our uses, the natural man finds valuable, the natural man acting in accordance, not, as we should put it, with virtue, but in the intelligent prosecution of means, in accordance with the technique of the arts. And how shall we recognize such value? By being properly trained, to use Aristotle again, but esthetically, not morally. Stealing or boasting or lying we shall refrain from in the end because these activities are not objects of satisfied contemplation to the well trained man. And so we should dispose of most of the moralities. They are negatives, ways of acting ruled out of the lives of those who rationally contemplate human activity among men in our condition of enlightenment, ruled out as simply not what we want on earth, not our preference, not what, our human interests at heart, we with delight could contemplate—not, therefore, what we can rationally do. If our faculty of representation has given us ideals, the gift has been accompanied by a painful but sure process of elimination. One does not become sensitive to music without increasing one's sensitiveness to noise; if one finds monogamy a bore, it may easily be rather a sign of early confusion than a case of mature irrationality.

For positive content we turn to the same criterion. What *can* we contemplate with delight? And by what means are we able to contemplate *anything* with delight? The answer to the first question is, Works of art. To the second, it is Aristotle's old answer, By training. But it becomes clear that the training is best described as one in artistic technique, and that is also the only training for esthetic contemplation. Neither as to the nature of this content nor as to the mode of this training do the philosophers help us much. Great effort has been devoted to enlightening us morally; very little to exhibiting the content of the good life. Men have of course had to be absorbed in the mere means to living;

but ethics has been so devoted to a study of these conditions for barely existing side by side with our fellows in the world, that the ends of an earthly existence—except as these have been supposed to be unearthly—are mostly neglected, not to say forgotten altogether.

Even Socrates does not take the matter seriously, for surely a liberal life is more than the most completely honest and the most highly successful inquiry into the nature of ourselves and into our ideas of the good. A liberal life would employ the results of such inquiries to its own ends; and we should construct not states to live in, with Plato, but life in the state. Spinoza too remains, as Santayana says, a Levite in sentiment. He would have us love God with all our hearts or at least with all our intellects, but he would not fashion a God for us to love. He could not even with geometry construct a life very much worth living; he gives us rather a mode of noble death, a dignified and gentle resolution into the All of which we shall continue to be appropriate and perhaps less accidental attributes. Indeed the great satisfying content of his own human life—and this of course was true too of Socrates—was friendship, an art we no longer cultivate. An accidental, happy part of life friendship still is; but the very term we avoid as sentimental, and to call friendship an art suggests the sort of straightforward cultivation of our own happiness that is the very heart of the esthetic heresy. As if to trust to chance were more stalwart, more worthy of success, more likely to succeed, than an intelligent pursuit of ends.

Of course ends beyond our life and nature have been proposed. They are the sort that philosophy has usually found worthy of attention. But we can no longer keep our eyes fixed on supernatural goals. Our visions are not those of the saints. Naturalists and realists are neither visitors on earth nor spectators at a divine comedy in which they also play the parts. Our interest in the physics of this sphere is not casual amusement, nor even intellectual stimulation. We are not tourists about to return to a native land where the laws of mechanical science will be merely curious souvenirs of travel. We live in a few years of time, not in eternity. What life may be *sub specie aeternitatis* seems to us a trivial concern, for we are beginning to know our minds, and what we seek is thirty or forty years of happiness on earth.

Aristotle does indeed take this good life as the subject matter of philosophy; but who does not feel the insidious drought of his happy intellectual contemplation? We do of course find scientists to-day who are alive, active, enthusiastically intent on their investigations; but the very heart of all this activity is a technique.

The logic of science has become an art; mathematics itself is a structure which we build, and if its elements once chosen give us inevitably one structure, still we are free to choose other elements, as architects build of wood or stone or steel varying edifices. As for the laboratory man himself, what is he but a skilful artist, dominated and often disappointed by the exigencies of fact and the nature of what he handles, as every artist is limited by his medium, but happy, if he *is* happy, in the delicate technique of his laboratory art, of his laboratory ritual? It is as science has thus in two directions become art that it has given new life to philosophy and to philosophers. The new logic is still logic, no doubt, but it is the artist-scientist-logician that has given it its fresh vigor; the overwhelming weight of esthetic considerations in modern logic is as clear as the predominance in science of the laboratory method itself.

One more example of the happiness attained in technique, its lasting satisfactoriness even when its achievements are not our conventional objects of art. Where has religion in our times its strength? Not, I think, in Protestant countries. If natural beings are to cling to supernatural ideals, these ideals must at least be present in some satisfying natural form. If men are to hold to myths in days of scientific disillusionment, then the myths must be embodied by a technique itself satisfying in practise. Who is not intrigued by Catholic ritual? Who would not now and then be the priest with his robes—and his rubrics? Or even the acolyte with his censer and his occasional responses? Who has not wished himself trained to a monastic rule, with a divinely ordered life of prayer and contemplation and gardening? If one is not drawn by these fascinations, how else at least are we to account for the satisfaction that men find in the ways of modern Catholicism except by admitting that to human beings such ordered structures as masses and music and monastic rules are perennially satisfying, as mere knowledge, for example, is not? And these structures are both created and appreciated—practised, so to speak—only upon a foundation of the most rigorous technical training.

But here the voice of the objector breaks in, the voice of the moralist, the protestant, the economist, the reformer. The world has work to do; to get the task even organized for doing men must wake from reveries and retreats to their social and economic responsibilities. Human suffering is more widespread than ever before; reactionary politics are upon us so that even our established political liberties are in danger, and if the reactionaries are not successful in their encroachment on our rights, and even more certainly if they are, society itself seems likely to break up and its

institutions to tumble down upon us and bury us in the débris of our own civilization. But philosophy has to do with the defining of ends. A philosopher shows at best his natural and perhaps intelligent human interest when he turns with others to means. At worst he may show himself a fool rushing in where the very political economists fear to tread. As a human being let him be interested; let him play the fool, for that matter, if he chooses. But if he neglect the pressing needs of philosophy he will be neglecting his own particular business. The end of man is neither production nor distribution nor the state; but the end of man is of necessity esthetic.

If the modern soldier has come home demoralized, unfit for offices and department stores and college teaching, it may be that in contrast to so mechanical a life as ours war itself has indicated to him his creative possibilities, creative activity turned in the very worst direction, but after all creative, skilfully constructive of means to an end clearly imagined. In having an end towards which it intelligently and energetically works war is more rational, more adapted to technically expert human activity, than most of our life in peace. And one who has once been dominated by an end and thus had a real criterion of all effort can hardly be content again to work in the dull round of means, where in the very nature of the case there is no value to be found. If peace is to offer a life worth the trouble, it must offer men rational activity governed by the human end which we call happiness, activity rendered expert by training in a technique of accomplishment. If we are not to have men secretly preferring the activities of war we shall have to find them rational activities in peace; we shall have to offer them training in the technique of the arts, where the end is defined in idea. As a matter of fact war can be trusted to pall, for war is not finally rational; it is inhuman, suicidal. But so is much of industry, apparently, and much study and teaching. If we are trying to point out the end of human endeavor, we need not be afraid to turn to art.

That we *are* afraid is obvious. We put what we call moral values always first, and they are for us usually not values at all; we mean by moral ends conformity of one sort or another—at the best, perhaps, conformity to such rules as are themselves means to social life, to the existence of communities, and so, in a populous world, means to any human existence at all. Or we erect the humanitarian motives into ends. Or we pretend that what men most value is what is accessible to most men under present conditions, or what could be made so. As if we were not creatures of a certain sort, our preferences ultimately determined by the capacities of a

given organic structure, and our happiness dependent upon a training in the use of those capacities to the full.

Such distrust of art is justified if art is limited to what is contained in museums or what is given us at concerts; for this is usually not ours at all, and it is, besides, finished. It is not a field for creation; and we are largely incapable of the seeing or hearing that is required to enjoy it. How many of us can follow even the succession of themes in a new symphony? How many of us see the painting in pictures? We roughly see forms more or less familiar or pleasant; we dream ourselves away over unheard harmonies. But we do not see or hear artistic activity or even finished works of art as such; we are not in the alert state of esthetic contemplation. On the whole for most of us art is a very different sort of thing from musical composition or the appreciation of painting. In practise our nearer approach to it is more likely to be the correct "driving" of an automobile in the traffic, the neat rolling of a cigarette, the perfectly correct playing of a hand at bridge or the expert attention to a base-ball game. All of which are either very low forms of art or suitable to very immature minds; but all of which have definite esthetic value, however slight one may think it.

And clearly we do not intend to give up these esthetic elements in our life. How could we be expected to, without a substitute at hand? If they are childish, they have still the elements of art. If American life is anywhere pleasant to dwell on, it is in just these happy, natural, childish phases—at base-ball games, on noisy but sometimes well managed streets, in its commonplace but comfortable houses and apartments, at its crude but after all really enjoyed dances. If college class-rooms are barren places, and the intellectual life at our universities so often a pale sort of farce, there is at least no lack of genuine attention, accurate and expert and absorbed, to be lavished on college sports. And where life is already, there new life is to be sought. Only life breeds life. If we are crude, immature artists, we still are artists whenever we are really awake and happy and our characteristic human selves. If college athletics are good for nothing else, they may serve to indicate that alert, expert contemplation of a technical activity, as well as the devoted prosecution of that activity for its own sake, is as native to human nature in America as we are told that it was to the theatre-going, temple-creating Athenians or to the artists of Medici Florence.

What all these expert activities teach us about art itself seems to me plain enough. Technique is an integral element not only in the creation of works of art but in their enjoyment, and the

critical rigor with which we Americans enjoy base-ball and bridge-playing may show us how stupidly pretended and indirect is our relation to galleries and concerts. If we are indifferent to these the cure is not in pretending interest or even in merely trying to be interested; it is in learning the technique of the arts that we wish to be interested *in*. Not that this will inevitably make us competent artists, but that without it we can not approach anything as art; without it we can not even enjoy contemplation, we can not find life's content valuable, or be happy to live. To be a good carpenter—as Jesus perhaps was—or to be an adequate first-baseman, or say a billiard-player of attainments, as Spenceer was not—any of these is a more likely way to an adult love of great art than is the study of galleries if you have never learned the rudiments of painting. For the one, if at a great distance, lies at least in the right direction—the direction that intelligent technical activity takes towards an intended end. The other leads nowhere, or rather it is the direct road to the senile inanities of critical pretense. It is the sort of procedure that lets men spend whole lives in the respectable and diligent study of verbal renderings of such experience as may and very often does remain entirely outside their acquaintance. It is the sort of cultivation that New Yorkers think native to Boston. But it is—happily for nothing but the making of our point—present wherever there are scholars of the most familiar type. It is that thorough and scrupulous substitution of learning for life, of signs for things, of words for meanings, that finds the translation of ancient poetry into a sort of semi-modern prose more interesting than reading or writing verse. It cultivates the frame of mind that can smile at what it might call the quixotic immaturity of Jane Addams, for example, while it lists obscure evidences of erudition in a bibliography of literary criticism. So devoted is it to the art of literature, whose business, I believe it says, is to render in form the essence of life itself.

In all manner of ways it is clear enough, however, that we are a trifle disaffected towards our typical American forms of life and its enjoyment; we are more and more aware of the meagreness and immaturity of their esthetic content. We find that life is exhausting and somewhat futile in our cities, that our businesses and industries are hardly adequate opportunities for human development. We are cynical even about base-ball. And this was to be expected. We have seen in the Europe of our very disillusion a suggestion of more accomplished and civilized ways. We are reaching a point where we ask some satisfaction for our souls, not in the conquest of a continent—we can talk across it now—nor in the achievement of wealth and the balance of trade—it is hard to see in just whose

favor such a balance lies. Where are we to turn? To rearrangements no doubt of a thousand sorts; to political and economic and engineering remedies; to the worker's share in the control of industry about which we are so often informed of late; to all the complicated ways and means for living in the world with each other. But if we pretend to be philosophers we must see these things as the mere means that they are, and it remains for us to point out ends, to indicate the source of value. Value comes from men's genuine desires; value is esthetic; men are first of all artists. Life when it is lived in fulness and in happiness consists in rational and expert artistic activity.

Our ritual of comfort and luxury, the technique of our sports and our alert critical appreciation of them, these suggest our artistic possibilities. And our dreadful pseudo-appreciation of the higher arts, the arts that have in the history of civilization really satisfied grown men of developed minds or developed crafts—this indicates not indeed the proper way to satisfy our needs, but in its very falseness it shows our genuine craving for satisfaction. If Michelangelo's funeral gave Florence more life and beauty and entertainment than all his works give us, that is not a reason for despair or for blank gazing at the Pietà, or say prints of it or plaster reproductions. Our art will grow from our life or else never be either ours or art at all. We shall have first to turn our energy from one technique to another, from that of ball playing to that of more mature and permanently satisfying activities, activities that produce such things as men ultimately value. Our children can just as well be taught to dance and sing as allowed to play, and our college men might thus some day come to take seriously and admire—even enjoy—the technique of arts that they have practised from childhood, as they now admire the athletic skill that they are familiar with in their own bodies. At least it seems clear that if this does not happen we shall have blundered in the worst of all ways. For misplacing values, not divining what human beings can finally be happy over, not seeing what they really love, not knowing their true interests, is to mistake their ends, to distort for the time their sense of value, and to bring them surely to grief—to cynicism and brutality, if not to actual destruction.

And it is here that a modern theory of value is worth what it has cost in the way of cherished illusions. The theory is indeed little more than an elaborate rendering, somewhat painful and academic, of one of the innumerable insights of New England's heretical philosopher. A few paragraphs of the *Life of Reason* con-

tain the heart of the matter. Not that the academic account is a plagiarism; it has its own scrupulousness and its own niceties, which are no mean achievement. But it ends in the same heresy. It gives us nothing new of course; we are scarcely in search of novelties in value, we could wish the truth. And the truth here is plain. Science and religion as they are happily practised are arts. The creditable and satisfying parts of modern American life are essentially artistic. Men can be happy only as artists, because to be happy men must function at the top of their bent with an end in view. The name for this sort of functioning is artistic creation. We are not all to be sculptors like Michelangelo. We are not even all to be designers of a fitting funeral and biographers of our hero, like Vasari; but we can none of us have genuine human happiness unless we seek our proper human ends. These ends only are valuable; these ends are esthetic as value itself is esthetic; and these ends are achieved only by artists. The esthetic heresy turns out to be the first dogma of a modern philosophy.

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REVIEWS AND ABSTRACTS OF LITERATURE

A Fragment on the Human Mind. JOHN THEODORE MERZ. New York: Charles Scribner's Sons. 1920. Pp. xiv + 309.

A book, despite the modest characterization of it as a "fragment," written by the distinguished author of *A History of European Thought in the Nineteenth Century*, must necessarily command attention. And when such a book announces itself in the preface as voicing the author's doctrinal preferences, it can hardly fail to arouse a sympathetic interest. Yet, despite the historical erudition and the lucid style so characteristic of the author, the present treatise leaves one rather disappointed. Is this, one asks, *der Weisheit letzter Schluss*? Profound indeed are many of the author's reflections, but his general attitude towards the fundamental issues in philosophy is neither novel nor critical.

The thesis of the book is the familiar thesis of subjectivism stated uncompromisingly thus: "All knowledge, of whatever kind it may be, is contained for every individual person within the range of his own consciousness. The horizon of any person's mind contains everything that exists so far as he is concerned. There is nothing in the world for any of us but that which we in some way or other mentally experience—such experience being of various kinds, such as Sensations, Perceptions, Ideas, Emotions, Desires, Volitions or Feelings in general. These all together in their existence within our

consciousness form the only content of our knowledge, and outside of them there is for us no knowledge and no world. Any thing of which we can have neither a Sensation nor an Idea, nor an Image, nor a feeling of any kind, does not exist for us—it does not belong to the world as we know it. Everything that exists for us must be a feature in the stream of thought, must enter into the continuum of mental experience, must have, to use a metaphor, a location at some moment or for some time in the firmament of our thoughts or—to use the popular expression—of our Soul. Any one who nowadays enters upon the study of philosophy must realize this first all-important truth. It is hardly necessary to dwell on this any further” (pp. 39–40). This general conviction the author seems to regard as axiomatic and requiring no proof. And the “all-important truth” of the subjectivistic thesis confers upon the introspective method the distinction of being the philosophic method *par excellence*. Philosophy, in fact, becomes an “introspective region of research”; metaphysics coincides with psychology. But the introspective method advocated by the author differs from the older forms of it in being “synoptic” and “genetic.” The proper study of mind is a study of it as a “stream of consciousness” (William James) or a “continuum of presentations” (James Ward)—our author prefers the expression “Firmament of Thought”—in its total expanse and growth. The “Firmament of Thought” being a “whole” in the twofold sense of comprising all existence and of constituting a “connected totality,” the philosophic problems requiring solution center around the perennial antitheses of subject and object, of “inner” reality and “outer” reality, of the self and other selves, of existence and value, of science and religion. Such antitheses, according to the author, must be interpreted as distinctions *within* the “One Firmament of Thought,” the nature and significance of which a genetic study alone is able to reveal. A genetic account of these distinctions shows, quoting the author’s summary of his enquiry, that in “this continuous flow of undefined and vague sensations, certain complexes stand out from the earliest days of our infancy with more or less clearness, permanence and recurrence, and these form the beginning of our cognisance of an outer world. They acquire an independent existence over and above their purely subjective features in the stream of thought when we learn that other persons share them with us. This additional or higher form of existence we term Reality or the Real, compared with which the fleeting and less definite features of our primordial experience appear to be less real or unreal. We have also learned that this real world has many Orders and various Degrees; and in it again we distinguish a selected number of Sensations, Thoughts, Ideas, and Feelings, which we consider to have a still

higher degree of Reality variously termed Value or the truly Real. We may thus say that the contents of our Consciousness at any moment are made up of three classes or regions of reality, the lowest and largest class consisting of fleeting, undefined, and vague sensations; another class of more or less well-defined objects which we share with other persons; while a third class possesses experiences to which we attach more or less value, constituting the object of our special interest. These regions are not clearly marked off, but are apt to flow into each other; their contents wandering as it were from one class to another" (pp. 245-246). In short, synopsis or intuition reveals the mind to be a "changing whole," containing the totality of existence; while a genetic study shows how the individual mind comes into possession of ideas and ideals constitutive of an objective and social world. The pursuit of introspection both synoptically and genetically culminates for our author—the steps which are rather circuitous can not be reproduced here—in a defense of personal and religious idealism in which all our spiritual values, especially those commonly associated with Christianity, are preserved and vindicated.

Non sequitur—this is the fallacy which a careful and critical reader of this *Fragment*, not sharing the author's bias for subjectivism and its worn arguments, will have no difficulty in detecting. The author follows the widespread opinion in idealistic philosophy that the gateway to a "spiritual" conception of the world lies through an analysis of its contents in "mental" terms. The essence of the universe must first be described in terms of "ideas" before it can be appreciated in terms of "ideals." This is the motive which lies behind the idealism of Berkeley and of all those who accept his tenets. Berkeley and Berkeleyans seem to postulate an identity of meaning in the terms mental and spiritual. A spiritual conception of the world is assumed to follow inevitably from the demonstration that its constitution is mental. Once prove, so the assumption runs, that all those things which compose the world require a "mind" to describe and to account for its nature, then it can be established that all is well with the cosmos, that it is the paragon of goodness, beauty, order, rationality, in short, of all those ideals and values crystallized in the word "spirituality." But this assumption may be challenged. It is within speculative possibility to imagine a world through and through mental but revoltingly unspiritual, a world responsive to our ideas but at variance with our ideals. And it is precisely the recognition of this disparity which gives to pessimism, especially to the type made familiar by Schopenhauer, peculiar relevancy and poignancy.

It is extraordinary that such a possible objection to subjectivism does not occur to our author. And it is still more extraordinary that

recent criticisms of it should be so utterly ignored by him. There is in this *Fragment* no hint even of the modern realistic challenge to philosophic idealism both in Great Britain and America. The complete neglect of an important movement in contemporary thought, a movement directed against the very presuppositions which are here accepted as if they were self-evident, is not easy to understand, especially if one considers the author's well-known learning and acumen. Does he regard, one wonders, the postulates of subjective idealism as so unassailable that one may safely withhold attention from any of their critics? Nor is this want of attention to recent ideas confined to views to which the author is opposed. Ideas very near his own are similarly disregarded. There is, for instance, no reference anywhere to Bergson, although in many places the author's criticism of the analytical method is indistinguishable from that of the French philosopher. And Bergsonian in spirit is his defense of synopsis or intuition and his account of "mental energy" as continually increasing and thus involving both "creation" and "freedom" (Ch. XI). Again, to cite another instance, no mention is made of Royce and Baldwin, yet a theory of self-consciousness as a social contrast effect very similar to that of these two thinkers is the basis of the author's genetic interpretation of our initial and growing knowledge of self and of nature. Of these and other similarities or analogies between his views and those of recent writers the erudite historian of European thought in the preceding century could scarcely have been unconscious.

It is unfair perhaps to be so critical in dealing with a book purporting to be but a "fragment," the aim of which, as mentioned in the preface, is to state explicitly what was but implied in his larger work—the author's own philosophic creed. To have expressed with the courage and the pen of a master the typical creed of religious idealism on a Berkeleyan basis is an achievement for which we must be grateful. This form of idealism is as perennial as philosophy itself of which we can not have too many variations. But it must be confessed that after reading this particular variation of a familiar theme the realistic revolt in recent philosophy appears as singularly pertinent.

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The Child Vision: Being a Study in Mental Development and Expression. DOROTHY TUDOR OWEN. New York: Longmans, Green and Co. Manchester, Eng.: University Press. 1920. Pp. xvi + 180.

Apropos of the numerous writings of children now appearing in print, *Child Vision* is well timed. In it the author has disclosed the secret of their charm, the harmonious expression of the child's inner experiences, in setting forth her new and original method of teaching composition to children. A gifted child does this naturally and the average child can be helped by understanding adults. The principal thesis is that children should compose on subjects of their own choosing, since as a rule their minds are full of images which they would like to express in words if they but had the skill. It is the work of the teacher, therefore, to refrain from giving the child ideas, and "help him to find the right words which truly convey the meaning he wants to express." The author would have the child use his "intuition as well as his intellect." The novelty of the method consists in having one child stand before the class and describe a scene which he has vividly in mind, while the other children of the class draw it with colored chalks. This furnishes an objective test which very young children may use as to the accuracy of expression. Later work of the pupil shows the results of this method in the habits they have formed which enable them to handle more difficult subjects with an unusual degree of originality and logicity not otherwise obtained.

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JOURNALS AND NEW BOOKS

JOURNAL OF EDUCATIONAL PSYCHOLOGY. April, 1921. *Psychology of Drill in Arithmetic: The Amount of Practise* (pp. 183-194): E. L. THORNDIKE. - A volume could be written concerning how much practise a child should give to each bond in each of the types of complex situations in arithmetic where it has to operate. There is need for much experimentation in making sure of effective learning without wasteful overlearning. Some of the facts of importance are: The text book used may give far too little practise on certain bonds; it may divide the practise given in ways that are apparently unjustifiable. By the proper division of practise amongst bonds, the arrangement of learning so that each bond helps the others, the adroit shifting of practise of a bond to each new type of situation requiring it to operate under changed conditions, the elimination of excess practise where nothing substantial is gained, notable improvements over the past hit-and-miss customs may be expected.

Intelligence and its Measurement, A Symposium.

VIII (pp. 195-198) : V. A. C. HENMON. — We need more accurate scaling of the items within the individual tests, the reduction in number or elimination of tests that test similar functions, the application of the method of partial correlations to determine causal relationships and the correct weights to be assigned to the individual tests in the scale as a whole. We also need to determine the importance of various character traits which apart from intellect as such make for success in the tests.

IX (pp. 198-201) : JOSEPH PETERSEN. — Interest is shown in the selection of a battery of tests that measure widely different functions, and in getting better general intelligence tests as well as valuable data on the interrelation of mental functions.

X (pp. 201-207) : L. L. THURSTONE. — Intelligence is the capacity to inhibit instinctive behavior in an unfinished stage of its formation and to modify it at that stage by means of an imaginal stimulus which is relatively remote from that which is immediately and perceptually present. We should draw a sharp line of distinction between service and research in mental test work. No test should ever be used for any kind of service, unless it is known what the test diagnoses. A test may be good for one criterion and poor for another criterion. We should never talk about a "good" test without telling what it is that the test is good for. We need to rationalize our findings in the field of mental tests. Unfortunately there are relatively few mental testers who are interested in deriving psychological fundamentals from mental tests. Another line of mental test work which one would like opened up is the diagnosis of the volitional and emotional characteristics which determine our character traits. Intelligence is only one of the elements in mentality and it has been overworked because it is accessible to measurement. We should investigate the possibility of diagnosing character traits by some new kinds of mental test, self-analysis forms, and other procedures. Many interesting problems are suggested.

XI (pp. 207-210) : HERBERT WOODROW. — Intelligence is the capacity to acquire capacity. More information is needed on every point connected with brightness, or relative intelligence, in distinction from absolute intelligence.

XII (pp. 210-212) : W. F. DEARBORN. — The assumption of fixed variability is open to question.

XIII (pp. 212-216) : M. E. HAGGERTY. — The next steps in research seem directed toward (1) perfection in technique and statistical criteria of verbal tests for the ranges of ability where such verbal tests may be used, (2) the development of non-verbal tests for young children, for illiterate and non-English reading children and adults, and for the examination of those special aspects of intelli-

gence, if they exist, which are not properly measured by verbal tests.

The Relationship between Eye Perception and Voice Response in Reading (pp. 217-227): G. T. BUSWELL. — In oral reading the eye always moves along the line of print in advance of the voice, at times keeping very far in the lead and at other times very little in advance. An immature reader tends to keep the eye and voice very close together. In order to determine more fully and accurately the nature of the eye-voice span an investigation was organized to cover a series of problems which were involved. A brief summary is given. *Prophecy of Learning Progress by Beta* (pp. 228-231): GARRY C. MYERS. — Men in the First Recruit Educational Center at Camp Upton were given the Beta test. The problem was to find out if the low Beta men progress as rapidly as the high Beta men. The figures show that those highest in Beta tend to progress much faster than those rating low in Beta. *Department for Discussion of Research Problems. New Publications in Educational Psychology and Related Fields of Education.*

Aristotelian Society. Proceedings. 1920-21. London: Williams and Norgate. 1921. Pp. 246.

NOTES AND NEWS

DR. F. L. WELLS, of the Boston Psychopathic Hospital, has been appointed instructor in experimental psychopathology at the Harvard Medical School.

DR. JOHN E. COOVER, of Leland Stanford University, has been promoted to the rank of associate professor of psychology.

The Psychopathic Review, a new monthly periodical, has just brought out its first issue, dated September, 1921. It is published by the Psychopathic Clinic of San Diego, Calif., and is described as "a strictly non-technical magazine."

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

AMERICA AND THE LIFE OF REASON¹

FROM his dark and revolutionary beginnings the American has been a puzzle to himself and to his neighbors. It was not the new world of his habitation which caused the puzzlement, nor the old world of his heritage. The former was as the earth is everywhere; the steppes of Russia and the midcontinental plains of North America set men the same task and they performed it with their bare hands in about the same way. The latter he carried with him in his heart, and he uttered his heart in his life for a long time, quite as the European did, generosity for generosity and brutality for brutality, combining loving thoughts with hateful actions, noble professions with mean conduct, law with violence, religion with cruelty, morality with dishonesty after the manner of men everywhere. The Colonial of the United States was merely a European in an un-European setting. He built himself his foreign quarter as Europeans do in China today, and save that the land he built it in was empty of men instead of peopled, he behaved in the same way. The Puritans prayed and persecuted, the Cavaliers drank and dallied, the Scotch-Irish renewed their Ulster, with Indians instead of Southrons to battle against and hunt.

Europe gave no thought to the otherness of America until there had been added to the life there established and the purposes gained a new idea and a new hope, and this hope and idea had been ordained by choice and consent the mark of distinction, the differentia of the species, wherewith white men in America set themselves apart from their blood brothers in Europe. The hope and idea are constituted by what is usually called democracy.

When the Americans elected to give it allegiance and to order—or confuse—their lives by its dogmas and practises it was a new thing in Europe, the challenge of present thought to old institutions, nowhere tested in action or established in conduct. The American revolution was an adventure into the political unknown, as the Russian revolution is today, and its fortunes became a matter of momentous import both to the privileged who were secure in the old

¹ George Santayana: *Character and Opinion in the United States*. New York: Charles Scribner's Sons. 1920. Pp. viii + 233.

order and to the disinherited who hoped for security in a new. It could not be assaulted by its neighbors as were the French Revolution and the Russian; it was too far, and the distances of its domicile were too vast. It could only be watched, and praised or execrated. And because it was thus isolate and unique in an elsewhere crowded and jostling world, it became what later polities, peopled by the same original stocks and undertaking much the same adventure, what Canada and Australia and South Africa and New Zealand did not become, a symbol and a potent of a new turn in the organization of western society, whose fortunes must decide whether life and liberty and the pursuit of happiness are inalienable rights or lucky accidents, whether government should be a device which makes and keeps them secure for all men or takes them away from many men so that they may be assured to some; whether its powers rest on the consent of the governed or the will and cunning of the governors. Having hitched its wagon to the glittering, imaginative luminaries of the Declaration of Independence, the American republic, its institutions, its life and fortune, have undergone scrutiny of a type unparalleled by other states. It has become a puzzle, whose duplexity and contradictions one writer after another has tried to extend or to reconcile—De Toqueville and Bryce, Dickens and Kipling and Wells, to speak of only the most notable of the aliens; Irving and Lowell and Whitman, Howells and Mark Twain, to speak only of the generations gone, in America.

To the list of the most distinguished, domestic and stranger, must now be added Mr. George Santayana, taking his place between them. I say "between" because Mr. Santayana does not feel himself to be an American. "I am not one," he writes, "except by long association." Yet it is apparent that this long association has much affected his own temperament and opinions, blinding him to some things and making him more sensitive to others, in such a way that, if during his forty years in the United States he did not become an American, he certainly ceased to be a European. Perhaps he never was a European of the contemporary mode. Both his method and his manner point to a quality of personality unassimilable to the categorical groupings of the present time, with its passion, its strain, its speed, its hard venturesomeness, its reticulated, yet abandoned realism. Those who remember him in the class-room will remember him as a spirit solemn, and sweet and withdrawn; whose Johannine face by a Renaissance painter held an abstracted eye and a hieratic smile, half mischief, half content; whose rich voice flowed evenly, in cadences smooth and balanced as a liturgy; whose periods had the intricate perfection of a poem and the import of a prophecy; who spoke somehow for his hearers.

and not to them, stirring the depths of their natures and troubling their minds, as an oracle might, to whom pertained mystery and reverence, so compact of remoteness and fascination was he, so moving, and so unmoved. Between him and them there was a bar for which I know no similitude save that which is suggested sometimes by a Chinese painting of the tranquil Enlightened One, the irresistible magnet of his sedulous devotees, filling their vision and drawing them on as he sits, inscrutably smiling, above them. This detachment, which often seemed to me to have a tinge of sadness and insufficiency in it, is a quality of all of Mr. Santayana's works and endows them with something of the passionate impersonality of great music.

At the points where it is personal it is felt as a provocative superiority or a somewhat pitying, somewhat ironical comprehension, like that of a knowing spectator at the play. It suggests a kinship there, in which learning and experience both are mingled. You are led to think of the age of Voltaire, and of Voltaire himself, of Voltaire withdrawn from indignation and with a malice more Olympian. And you are led to think of the age of Emerson, and of Emerson himself, but of an Emerson turned luminous and balanced and articulate, with an understanding more precise and a sympathy more skeptical. In both these periods, the period of Voltaire and the period of Emerson, men of sensibility and insight found themselves in a society whose institutions were surviving without being alive, whose visions had hardened into formulae and whose powers had become privileges. In both, feeling was turning to rebellion and hope to protest. The men of sensibility and insight were those who could find place in neither camp of the dividing society. They stood aside from both authority and rebellion. They converted feeling into understanding and hope into philosophic irony. The perspectives they found turned authority to ridicule and rebellion to pity. This also is what Mr. Santayana, at his most humane, accomplishes, and far more perfectly than his predecessors. He carries over into the twentieth century as a pitying detachment of free intelligence from rebellion, the detachment which free intelligence in nineteenth century New England accomplished from authority. So he stands alone, without party, sect or school, a humanist against all narrower allegiances, and as lonely in his being as his vision is great. Neither James nor Royce, who were his colleagues as well as his teachers at Harvard, have this loneliness. The former was a rebel and founded a school; the latter was an authoritarian and perpetuated one. Emerson does have this loneliness; he moved beyond the range of established authority by being different, not by being opposed,

and it is in the line of Emerson that the spiritual genealogy of Santayana, the American, is to be sought. Of course, there are contributing branches; race, the discipline and forgotten impressions of childhood, the isolation and otherness of the youthful newcomer in a strange community, the richness and refinement of a learning and a culture without parallel among philosophers anywhere, and a pondering of the insight and the glories of Plato and Aristotle, the Greeks, and the austerities and insight of Spinoza the Jew. But the essential assurance of the goodness of life, the recognition of its youth, its spontaneity and its absoluteness, the readiness to excuse, to condone, and to adjust, to seek composition and harmony as against conflict and intransigency, these are of the same spirit as that which Mr. Santayana attributes to America, particularly the America which he knew and grew up in. It is the spirit of Emerson, unstained by the oversoul. Its philosophical garb and expression, which give it so subtle and fascinating a manner and accent, point, while they blur, the figure and sentiment they adorn—and conceal. For in his confrontation with life, Mr. Santayana has himself not escaped the contagion of the genteel tradition. The Jehovah of Calvin has been displaced by the matter of Aristotle and Spinoza and modern science, the predestination of Presbyterianism by the necessities of automatism. Mankind, for him, is what it is, and will be what it must. Its history has only an expressive, not an operative significance; its moral best is beauty rather than goodness; consummation, not achievement. "Every animal has its festive and ceremonious moments, when he poses or plumes himself or thinks; sometimes he even sings and flies aloft in a sort of ecstasy. Somewhat in the same way, when reflection in man becomes dominant, it may become passionate; it may become religion or philosophy—adventures often more thrilling than the humdrum experiences they are supposed to interrupt." For Mr. Santayana conceives life as the heirs of the genteel tradition among whom he lived and with whom he grew up lived it; vertically, not horizontally. "Reflection," he says, "is itself a turn, and the top turn, given to life." He means that we grow into thought as a lily grows into blossom. Its roots reach out into the mud, its stalk stretches upward through slime; but its petals are in the free air, all white and pure and well-ordered. In them the matter or force underneath has come to the limit of its power, has used itself up. They neither toil nor spin, they simply are the topmost turn given to life. So also is reflection in man the passionate but important excellence of a living body whose energies have somewhat exceeded its needs and blossomed in spirit—the topmost turn given to life—as the height

and shape and iridescence and music of a fountain is the topmost turn of the water-pressure whose ultimate expression these are. It is of the essence of reason to live on this topmost turn. It is to make of life a harmony and to find habitation in the ideal, and this is what the heirs of the genteel tradition and its victims had somehow come to when Mr. Santayana knew them and dwelt among them. That he should have escaped their contagion would have argued an insensitiveness altogether contrary to his nature: his very strictures upon them show how deeply they influenced him. What he says of Charles Eliot Norton, who was one of the New England apostles of the "topmost turn," may be said, I think, also of him: "Professor Norton's mind was deeply moralized, discriminating and sad; and these qualities rightly seemed American to the French observer of New England, but they rightly seemed un-American to the politician from Washington." It may be said, with, of course, a difference, but it is not, to my mind, a difference of kind or degree to make of Mr. Santayana a species of another genus or to insulate him from the tradition that pervaded the scene in which he grew up.

II

The duplexity of American life of which Charles Eliot Norton is a concretion and a symbol has its mates in other fields. Of the divinities in the Pantheon which the myth-making public-school histories of the United States have provided for its public men, who could be more diverse and dissonant in temperament and aspiration than Washington, Lincoln and Roosevelt; and which of them is the "true" American? Lincoln, deeply moralized, discriminating and sad, whom also politicians acknowledge as the foremost personification of the type, yet whose life and labor entail everything that is the opposite of Norton's? Roosevelt, the nervous and didactic confutation of Lincoln's tolerance, sadness and quiet? Or Washington, with the broad solidity, the heavy thoroughness of an English squire, in all respects the reverse of Roosevelt's swiftness, shrillness, instability and omnivorous superficiality? Or, to take a living instance—Wilson, with the professions and ideology he took to the Peace Conference and the engagements he brought back from there? Or a symbolic one—the statue made by the sculptor Bartholdi as the gift of the free Republic of France to the sister-republic across the sea—Liberty, enlightening the world, with a jail imputed at its base?

The interpretation of this duplexity which Mr. Santayana offers is the traditional one. Character and opinion in America are, in his regard, the outcome of the impact of an old, rather

overcivilized people upon a new and undeveloped land. The force of the impact loosened, the attrition of the contact frayed, the ancestral hope, habit and custom of life and thought, generating others, more competent for the necessities of the setting, truer to the coercions and more answerable to the requirements of its nature. The generation of these others was a renovation of the youth of the people. Americans are a sort of collective Faust, whose memories of Gretchen and the cloister trouble but do not restrain the conquest of the new empire and, perhaps, the endeavor after Helen. America is a young country with old memories. The duplexity is due to the conflict between this—somewhat magical—joining of crude youthful passions and polite, ancient thoughts and shibboleths in one body-politic. The classes who utter the passions and those who utter the memories are not at one, and the future, of course, belongs to youth.

I am not sure that in restating Mr. Santayana's allusive and varied formulations of this view I have done him justice. His thought is too organic, too integrated with provisos and qualifications to be susceptible of simple, inevitable statement. The essential point seems to me, however, beyond doubt. It is this confrontation of new land and old people, and most of his discussion consists of the delineation and, in the light of the harmonies of the life of reason, which is his measure of all things human and divine, of the interpretation, of the changes in the people brought about by the contact with the land.

How profound these changes are, what they signify, how lasting they are likely to be, is not clear. Sometimes he suggests that they are altogether external, and that the inwardness of human existence is a thing inalterably young: "nothing lasts forever; but the elasticity of life is wonderful, and even if the world lose its memory, it could not lose its youth;" so that America is exemplifying anew an immemorial cycle of destruction and restoration that life forever undergoes. At other times there is a hint that the changes he speaks of are constitutive, and that the species *homo Americanus* is compact really of these and nothing else, so that persons of whatever stock suffer a sea-change and indifferently become American: "young America was originally composed of all the prodigals, truants, and adventurous spirits that the colonial families produced: it was fed continually by the younger generation, born in a spacious, half-empty world, tending to forget the old, straitened morality and to replace it by another, quite jovially human. This truly native America was reinforced by the miscellany of Europe arriving later, not in the hope of founding a godly commonwealth, but only of prospering in an untrammelled one. The horde of im-

migrants accepts the external arrangements and social spirit of American life, but it never hears of its original austere principles, or it relegates them to the same willing oblivion as it does the constraints which it has just escaped—Jewish, Irish, German, Italian, or whatever else they be.”

But, internal or external, these changes are not, we are asked to believe, so discontinuous as this passage implies. The English stock which first settled the country brought with it and preserved unchanged and caused to prosper, the spirit of “English liberty.” It is by virtue of this spirit and its supremacy in America that the miscellany of Europe could become the solidarity of the United States, Americans all, regardless of origin or trend. Its manifestation is free cooperation, based on free individuality. It requires plasticity and a willingness to consult, to compromise, to decide by majority vote. It can not prevail where minorities are unable loyally to acquiesce in the decision of the majority. And in practise its essence is this acquiescence. Where it does not prevail, the liberty desired or hoped for is “absolute or revolutionary liberty,” which is unyielding, intransigent, violent and selfish, capable of inspired vision and relentless martyrdom, but not of organized, harmonious living. Absolute liberty is a goal; English liberty is a method or technique which men may use in adapting themselves to one another and to the world at large. It is blind, illogical, piecemeal, for its principle is simply that of “live and let live.” The organization it effects presents like the British Empire the motley pattern of a crazy-quilt; the institutions it generates are clumsy, “jumbled and limping.” It always leaves a residue, unsocialized and unordered. Resting on respect for individuality, the contacts it involves are external and there remains room in it for growth. Its sign here in America is the triviality or technicality of legislative measures, the fact that government has so long “been carried on in the shade, by persons of no name or dignity.” For “free government works well in proportion as it is superfluous,” and the notorious superfluity of government in the United States is a sign “that cooperative liberty is working well and rendering overt government unnecessary.”

Is it, however, such a sign? The observation goes deep to signalize how American is Mr. Santayana’s opinion about America. For America is not yet, and never so far has been, the crowded country that England always was, where different stocks of ancient root have been pressed one against the other to live together as best they might—together, and yet free. America has been an empty land, where diverse liberties could cooperate because they had ample space and did not need to touch or crowd. Nor because,

for the most part, government in the United States was so long weak and far-removed, was its rigor absent. The rigor came, however, not through its officers, by due process of law, but through law's violators, at the hands of Judge Lynch. And that symbol of the spirit of cooperative liberty is still prominently with us, as it was in the beginning, and seems like to be in days to come, one hundred per cent. American. Nor does Judge Lynch live alone, nor is he without children in the house, from the Ku Klux to the industrial spy. It is a question whether the young America of prodigals and truants who fled the boredom or tyranny of the theocratic communities, carrying the seeds of what is America now, possessed the spirit of English or of absolute liberty. They fared abroad, perhaps, not only because the land and its promise lured them, but because they would not live at home. Such cooperation as they learned, consequently, they learned because the land exacted it, on the penalty of death. Where the land was kinder, or had been conquered, they were as dogmatic, as imperious, as intolerant as their fathers. Even if America were "all one prairie, swept by a universal tornado," it is not the prairie which compels uniformities, nor the tornado that fixes the grammar of assent in which is parsed the modern American mind. Prairie and tornado, when they cease to be mere material environment that must be tamed and humanized and become circumstances of life that may be understood and expressed, liberate and diversify. Main Street is not of their making but of man's.

For the secularization of Calvinism merely shifted the seat of authority from the revealed word of God in the Bible to the no less sacred word of the Fathers in the Constitution. The pattern of government which this provided reproduced itself like Royce's maps from nation to state, from state to city, with a uniform rigidity over which the communism and Catholicism that Mr. Santayana contrasts with English liberty have no advantage. The dogmas of the Constitution acquired a holiness no less sinister than Mr. Santayana calls Jehovah's—after, that is, the southern minority, which now composes "the solid south," had been coerced into a surrender of its own type of absolutism; and the Negroes, a dissimilar race compelled to live in an inferior and degraded state both North and South, were endowed with the privilege of a freedom which rendered this state secure for them.

There is a polarity rather than an interaction between the sanctity of the political dogma, with its correlates in the sameness and rigidity of the political pattern, and those compulsions of the mass and coercions of business which in America are observed to snuff out personality by the shaping of men according to the

“national orthodoxy of work and progress.” The former is as absolute as ever any churchly dogma was, and becomes more so with the thinning and attrition of churchly differences. The latter is relative, flexible, varying from area to area, and within the framework of industrial organization from industry to industry. It is in the latter, not the former, that cooperative liberty sometimes occurs, occurs because in the latter lies the impact and concentration of diverse liberties which are like to be equal in power and need, and must therefore adjust themselves to one another or die, both. There exists, it is true, within the latter, a caste that is consecrated to the infallibility of the political dogma and the political forms which utter it. The caste has always been their beneficiaries, whether through the public land grants of the beginning or the tariff of these latter days. They naturally seek to maintain this benefaction in a country which industry has converted from a nation of individuals into a nation of classes, by invoking, as in the war upon the labor union, the dogma of absolute individual liberty where it can no longer exist, where it must become cooperative liberty if it is to be liberty at all. Notwithstanding, industry compels cooperation and it is doubtful whether this class can have its way. Its way is not the way of English liberty and never was, yet it has given the pitch to the religion of God while that mattered, and set the key to the religion of the State which began to matter from the moment when the English Colonials agreed to conceive themselves as a sovereign state dedicated to life, liberty and the pursuit of happiness.

III

The corporate personality which was defined by the philosophy of natural rights of the Declaration of Independence and was embodied in the form of federal government established by the Constitution, is essentially an artificial thing. It rests on no foundation of immemorial custom or consanguineous tradition. It is a thing made, not grown, and it is that by virtue of whose existence the American most specifically distinguishes himself from other human associations, regardless of what other qualities compose and designate him, or how profoundly. Englishmen or Frenchmen think of themselves in their natures rather than their political institutions; Americans think of themselves in their political institutions. The consequences are inestimable. For it is a trick of the mind that its inventions, which serve like names in this differentiating fashion, shall become centers for the accretion of values which turn them from engines of service into objects of adoration. They get trans-

formed, instruments hypostatized, idols of the forum, market-place and cave. The moving life of the nation may glide from under them, carrying their worshipers into new and unexpected relations and responsibilities. But the idols will then grow more precious as they are felt to recede, and the urge to make their adoration universal will become more imperative with their remoteness. The "Americanism" with which self-conscious, polite America is challenging the worship of the world is an idol of this nature and status. It is not the expression of present needs and future satisfactions. It is the concretion of satisfactions and privileges remembered, when the land was wilder than it is, and its people needier, cheerier and more gainful.

This, I think, is the Americanism Mr. Santayana best knew and now interprets. If the liberty which he attributes to it is in his regard an inheritance, the most precious America possesses from the English ancestor, the intense idealism about matter of the descendant is an endowment or an imposition from the American soil. Mr. Santayana's characterization of this soil is rather simple, rather scanty. He sees it as all one prairie, monotonous, uniform, empty, the chief natural features continentally spaced, so that the land does not invite one to take root, but to wander. The differences between North and South and East and West, between what is intrinsic in New England and what is intrinsic in Kansas, or Virginia, or California, or Wisconsin, are ignored; the diversification of identical stocks by river and hill, by table-land and plain, are ignored or regarded as trivial and indifferent beside the vast monotony and overruling emptiness of the midland spaces. These are the determinants of the American character. They "bring a sort of freedom to both soul and body." They induce in the soul a moral emptiness to mate the material one, for space is freedom to move, and where life has failed to take root, "where men and houses are easily moved about, and no one, almost, lives where he was born or believes what he has been taught," no tradition can continue, no customs sustain a community, no past compel with authority. These things slip away from men even as they move. They face bare nature, unassisted but also untrammelled by the past. She becomes a challenge and a task, the material for any experiment, evoking and strengthening initiative, originality, efficiency, directness and imagination. The conquest, exploitation and use of nature becomes the chief, the only deep, preoccupation of the American. He faces her present starkness in the hope of her future bounty. He becomes "an idealist working on matter," a moral materialist, hence, by force of circumstances, practical, worldly, helpful, efficient; full of vitality; obsessed by the optimistic assump-

tion that "the more existence the better;" measuring life and the values of life, like a fisherman his haul, in terms of quantity and indifferent as to quality. It is these traits that the soil has evoked and fixed in him and in these it has made him young, for it has required him to be "chiefly occupied with his immediate environment in terms of reactions . . . inwardly prompted, spontaneous and full of vivacity and self-trust." Experience has not yet brought on the sobriety of recollected failure and the chastening of emotions from which maturity and age eventuate; and in whose harmony and self-restraint is the joy of a true moral idealism. Only these can determine whether the American will remain forever an "idealist working on matter" or shall become a lover of the life of reason.

The argument is plausible, and seductive. I can not, however, state it without disturbing monitions from all the unmentioned attributes of the American scene and the unregarded diversities of the American peoples. Even the imperturbable, stoic Indians had not this unity of culture and type which Mr. Santayana assigns to transplanted Europeans and their descendants, and the period of the Indian's sojourn upon the American continent was to the Indian's advantage. Why should its emptiness and monotony not have evoked from them the same qualities it elicited from the Europeans? Why should North and South have become so different in speech, in memories, and if you please, in hope, even before the Civil War? May it not be that the America which Mr. Santayana has in mind is a very narrow America, an America of only a single one of its many types? He had seen America so far as I know, from only three centers, along a narrow latitude—from Boston, from Chicago, from San Francisco. The men and women with whom he could have had anything more than very superficial contact at these centers are prevailing of the same stock, the same class, the same interest and hope. They are the builders of the west, whose money or parentage was of the east, the pioneers of the frontier, the heirs and the bearers of the genteel tradition across the continent. It is a tradition that has relaxed along the westward way, so that in a progress from Boston to San Francisco one moves from the place of agonized conscience to a place where civilization is on a holiday. But I doubt whether this relaxation is the effect of the land alone and not far more the effect of its mastery. There are Flagellantes and devout Calvinists in California also. The bitterness of a cult and the poverty of a culture are alike dispelled by prosperity and abundance. Whether in Europe or America, pioneering, hardship and insecurity of life in the wilderness are ever accompanied by intense faith and proportionate intolerance. Leisure, ease, and freedom of a wilderness subdued and a community safeguarded are

accompanied by a relaxation of faith and a secular tolerance. What has Americanized Catholicism in the United States may as well be the prosperity of the average Catholics as the irrelevance of its doctrine to the necessities of the frontier. Catholicism was strongest when Europe was most barbarous. Intolerance is still an attribute of the country and tolerance of the city.

Boston also has enjoyed, or suffered, the relaxation of the genteel tradition. But that the relaxation was due to an irrelevance and a forgetting, under the impact and compulsion of a wild nature needing to be tamed, has not the indubitability with which Mr. Santayana states it. It may be that the relaxation was the effect of a compenetration and enrichment of the traditional Calvinism with the economic abundances and secular refinement of a life thereby set free from drudgery and fear, and rising hence into that enjoyment of happy and ordered living of which this is the prerequisite and condition. For I do not observe anywhere in America the passing of Puritanism by displacement and forgetting. On the contrary, Mr. Mencken and Mr. Sherman remind us that it is everywhere compellingly present, challenged, invoked, rebelled against, compromised with, lived, renounced, undergoing such a transformation as before the Reformation Catholicism was undergoing at the hands of the humanists, and for much the same reason. Its case is not that of a memory fading before the iridescence of a welling life, and not from it springs the duplexity and essential contradiction of the American scene, "the curious alternation and irrelevance as between week-days and Sabbaths, between American ways and American opinions." These are born of the strain between its mobile expanding economy and its rigid political pattern, compelling it to develop new organs and instrumentalities of government instead of adapting old ones. But I do not discern in the cultural background of the United States anything discontinuous with its cultural present, like a new species springing from a new soil. There is a change in the accent, but no diminution of the content, of the past. An increase, rather. The fashion, hence, which Mr. Santayana follows of treating the intellectual efflorescence of New England, about the middle of the nineteenth century, as a conclusion rather than a beginning, seems to me very dubious. "New England," he writes, "had an Indian Summer of the mind; and an agreeable reflective literature showed how brilliant that russet and yellow season could be. There were poets, historians, orators, preachers, most of whom had studied foreign literatures and had travelled; they demurely kept up with the times; they were universal humanists. But it was all a harvest of leaves; these worthies had an expurgated and barren conception of life; theirs

was the purity of sweet old age. Sometimes they made attempts to rejuvenate their minds by broaching native subjects; they wished to prove how much matter for poetry the new world supplied, and they wrote 'Rip Van Winkle,' 'Hiawatha', or 'Evangeline'; but the inspiration did not seem much more American than that of Swift or Ossian or Chateaubriand. These cultivated writers lacked native roots and fresh sap because the American intellect itself lacked them. Their culture was half a pious survival, half an intentional acquirement; it was not the inevitable flowering of a fresh experience. Later there have been admirable analytic novelists who have depicted American life as it is, but rather bitterly, rather sadly; as if the joy and the illusion of it did not inspire them, but only an abstract interest in their own art. If anyone, like Walt Whitman, penetrated to the feelings and images which the American scene was able to breed out of itself, and filled them with a frank and broad afflatus of his own, there is no doubt that he misrepresented the conscious minds of cultivated Americans; in them the head as yet did not belong to the trunk."

Replace in this passage New England by Italy or Poland, or Bohemia, or Greece, or Ireland, or Jewry, and you have, item for item, the literary anatomy of resurgent and awakened nationalism everywhere in Europe—the translation and romantic imitation of foreign thought and foreign manners; the superiority to the formal tradition at home; the conscious, learned closet literature on native themes; the turn toward a didactic realism regarding the native scene; the emergence of masters of the people's idiom like Whitman, and their repudiation by the cultivated; the multiplication of such masters, the babel of themes and interests, until the national life gets steadily set in direction and intent and literature takes on expressive pertinency.

This is the very springtide adventure of the national mind, freed and made self-conscious by prosperity—or sorrow—and seeking first to show that it is as good, as competent and as refined as its longer established neighbors, and secondly, to search out, among the many forms established in excellence and authority which the world offers, the form of communication and self-utterance most congenial to its own nature. It has ever begun by adventuring abroad for its silken garmenting, spurning its homespun, whether in Chaucer's day or in Longfellow's. And it seems ever to have ended by improving the native weave through admixture and combination of the foreign. So it was in New England. The national consciousness long absorbed by the rejuvenating immediacies of nature, had finally, by mastering them, established itself in a degree of unwonted security and leisure. Looking about, it beheld new

and unsuspected perspectives, and to the fascination of the foreign, the old and elaborated and tried, it succumbed. Like every *nouveau riche* it was bound to adorn itself with the traditional trappings of cultural excellency and to surround itself with the goods traditionally established in approval. At the same time it would not abate a jot or tittle of its own claim to dignity and power. It surveyed its world and found it good and approved itself as the good world's maker, like little Jack Horner in the nursery corner proclaiming his moral superiority with every plum he extracted from the Christmas pie. Such was the spirit of New England about the middle of the nineteenth century, such is the spirit of whole of America today. On the western corner of the Boston Public Garden, facing the church of which he was long the pastor, there is a statue of William Ellery Channing, set up not many years ago. The inscription, taken from his sermons is superlative, and it fits Gopher Prairie, Minnesota, or Madison, Wisconsin, as closely as it fits Boston. "I see," it announces "the marks of God in the heaven and in the earth, but how much more in a liberal intellect, in magnanimity, in unconquerable rectitude, in a philanthropy which forgives every wrong and which never despairs of the cause of Christ and human virtue. I do and must reverence human nature. I bless it for its kind affections. I honor it for its achievements in science and in art and still more for its examples of heroic and saintly virtue. These are marks of divine origin and the pledges of a celestial inheritance. I thank God that my own lot is bound up with that of the human race."

Mr. Santayana has firmly understood and perfectly expressed the public sentiment which this inscription utters. He has observed that it is "the traditional orthodoxy, the belief, namely that the universe exists and is governed for the sake of man or of the human spirit." The liberalism that came with leisure and knowledge and prosperity has, he considers, left the orthodoxy untouched. He would not conceive that stated, as Channing stated it, so innocently, naively, ridiculously arrogant, it breathes itself the very breath of liberalism. For illiberalism does not reside in illusion regarding the importance of mankind, but in illusion regarding the importance of a particular class of men; liberalism does not consist in the surrender of the pathetic fallacy, but of its narrow or intolerant implications. Calvinism, like other forms of salvational religion, like Judaism, is through its doctrine of special selection at the core illiberal. It separates mankind forever into the damned and the saved, and it rewards the self-abasement which is the prerequisite to salvation with a predestined eternal supremacy. Its progression from Edwards to Channing, or for that matter, to Royce, has not been a

process of displacement or attrition so much as a process of expansion and assimilation. This inscription from the back of Channing's niche is Calvinism without the self-abasement and without the exclusiveness. It is the doctrine of predestination and election, extended to the whole of mankind, with some reservations, inevitable in the nature of the case, and altogether unconscious, in favor of New England as a vantage point: "I thank God that my own lot is bound up with that of the human race!"

This sentiment is not unnatural to a people who, mastering Nature swiftly and effectively, were looking upon their work and finding it good. Past achievement, present effort and future hope all argued election and predestination. Isolation, and detachment from the problems and perplexities of Europe made Europe a scene and America a spectator who might and did thank God that he was not as other men. But Europe mattered to America also significantly; significantly as a collection of cultural results, not a political and economic process. In comparison with the latter, the associations of men engaged in continental economic enterprise and bound together and distinguished as a nation by one peculiar idea and organization known as the United States of America felt themselves to be the wards of a superior and manifest destiny. Persons of so fortunate and victorious a history could not fail to be impervious to the starkness of materialism, or most expressive in the pathetic fallacies of idealism, which Mr. Santayana aptly calls the "higher superstition." But the peoples of Europe, although they had been long disciplined by suffering and sobered by disillusion, were in no better case. If the nineteenth century was not the time and America not a place where "pure truth" could be sought, neither do any other time and place seem to have been. At least the nineteenth century attained fully, without the promptings of need and the urge of faith, in America as well as in Europe, such a knowledge of nature and man as is without precedent and without parallel in the laborious and dreamful history of the human mind. That this knowledge was put to social uses, and set in a hopeful vision of all things whose source and center was the heart of man rather than the heart of things, can hardly be made a reproach by a thinker who realizes so profoundly as does Mr. Santayana that "even under the most favorable circumstances no mortal can be asked to seize the truth in its wholeness or at its center." Should it not suffice that, after millennia of subjectivity and anthropocentric bias, men were able anywhere to approach Nature and their own foregone conclusions with a question? Could they have done it, any more than the Greeks could, without the freedom which prosperity established, and the animal assurance that a world interrogated would not reply with an insult or a blow?

IV

The academic environment, where alone this question was conspicuously raised, was the meeting place, and remains the meeting place the world over, of the old and the new. Mr. Santayana's account of its limitations, its prepossessions and perversities is undoubtedly correct, but I can not believe that they are important or especially American. For better or for worse, philosophers are professors, and if "the tendency to gather and to breed them in universities does not belong to ages of free and humane reflection," if "it is scholastic and proper to the middle ages and to Germany," it must be remembered that this tendency crystallized into an institution in the age of free and humane reflection which Mr. Santayana most admires and that the regimentation of thinkers into schools is the work of the very Plato and Aristotle whose "charming myths and civilized ethics" he would have the philosopher who must teach for a living expound to his pupils. It is not the gathering of philosophers in schools that betrays philosophy: it is the regimentation of opinion when they are gathered, the prostitution of free thought to religious dogma and political expediency, the subjection of the spirit of free enquiry to the vested interests of the mind. These convert the thinker into the lay priest, the lover of truth into the lackey of prejudice. And even that danger it is better for the philosopher to live with, than to live alone. If his thinking is only a soliloquy and never a communication, he may be a god, but never a man, and the chances are all against the likelihood that, wandering "alone like the rhinoceros," he can escape becoming one.

In Harvard College the secularization of Calvinism came to pass earlier, more easily and more gracefully than in New England as a whole, and far more radically and honestly than the secularization of the evangelical Christianisms that dominated the various colleges of the protestant countries of Europe. The same compulsions of a wilderness needing to be mastered or submitted to which converted Calvinism from a doctrine of election through self-abasement to a doctrine of election through self-assertion converted the traditional architects of educational discipline in the colleges into a sort of educational town meeting, where every subject had one vote and no privileges and the student might elect it according to his inertia, need or taste. It is this, and not, as Mr. Santayana thinks, the exigencies of the teacher's task that generated that peculiarity of mind and temper which pervaded the Harvard of his riper years and which he so well describes. The teacher's task is the same everywhere, in Oxford or Berlin or Paris as in Cambridge.

But its background in Cambridge was a new kind of academic life in the making, which demanded courage, experiment and faith in the prosperous outcome of an adventure without precedent, a game with rules as yet unenacted. Against these concrete uncertainties of daily life, the cosmic certainties of the comfortable ideals of the compensatory tradition were security and insurance. They gave the animal darkness of living enterprise such light of thought as it could endure, and the one was as natural to the picture as to the other. The world which an American student was preparing for was a world in which everything was in process, a world without traditions, standards, conventions or hereditary classes. It was a world all frontier. Everywhere in the cities of the east as well as the plains of the west, there were the confrontation, impact and consequent crumbling of all the racial groupings, all the national and religious associations of Europe. Men and women, fixed in the habit of thought and action by the smooth customs and intimate conventions of ancient place and long forgotten time of the homeland, found themselves one day, thinking and acting all irrelevantly, as in a vacuum, their own society dissolved and lost, and no community present or formed in which they felt at home. America thus became in the heart of its population a congeries of individuals, living each on his own, somewhat distrustful, tense, alert, but hopeful. Against this process of comminution, and imposed upon it somehow from above, rather than growing out of it, there were the uniform pattern of the political institution and the rigidity of the political dogma, there was the free public school, which had replaced the church as the transmitter of tradition and the custodian and teacher of true doctrine, and there was the ultimate and inescapable coercion of the automatic machine and the new industrial and financial economy which, with the machine's coming, began to displace the old. The academic world was the barometer of this situation. In a society so atomized as the American, communities and companies formed and faded like smoke clouds in the sky; nothing was fixed, nothing inevitable; only the common, the formal can be cleaved to, as a foothold against the universal atomizing flux. One element of this common doctrine has been, for all the peoples, the "higher superstition" and its vogue in the universities is a true reflection of the needs and will of American life. The other element, and a far more important one, has been the democratic dogma, with its institutional rigidity, its agrarian and legalistic individualism and the remaining items of its implication rendered false or irrelevant by the shifting of the economic base and technique of the national life. Outside of these certainties there was no telling what bit of curious knowledge or apparently irrelevant lore might not become

the saving item in the life and death struggle of the valiant young soul set out to win the world. The university, hence, must supply everything, from the proprieties of philosophy and politics, to the eccentricities of philology or the superfluities of the fine arts. It must prepare its young men not to fill a station which awaits them, ready-made, but to make themselves a station which they could fill. This is what Harvard only aspired to when Santayana was a student there. This, I think, is what Harvard thought it was accomplishing when he had become a teacher there.

It was inevitable that an academy so inspired should be wide rather than deep, and that formal education should be activist, technical and unordered, a challenge and evocation of powers rather than "the transmission of a particular moral and intellectual tradition." The tradition was too reassuring and too pervasive to require intentional transmitting; its pertinent living realities, moreover, were the orthodoxies of the historical and political "sciences," and in them it was transmitted and transmitted intact. The philosophers, hence, were in a position much freer and more daring than either the historians or the political economists. If "their sense of social responsibility was acute, because they were consciously teaching and guiding the community," and if "it made no less acute their moral loneliness, isolation, and forced self-reliance" it was precisely not because "they were like clergymen without a church, and not only had no common philosophic doctrine to transmit but were expected not to have one," but because in the character which American society then owned and does still to some degree own, the philosopher was as foot-loose as everyone else, and had like every one else to justify his being by the competency of his doing; he had to "make good." Nor at the time does he seem to have desired anything different. That he could, like Santayana or James or Royce, be at one and the same time a genuine philosopher and a popular professor is the sign that the incompatibility of these two rôles of which Mr. Santayana complains, is more adventitious than necessary: the progenitor of the species was after all the Socrates of Mr. Santayana's admiration. The result was that excellence of the Harvard school of philosophy which in spite of his modest deprecations Mr. Santayana signalizes. It was "a vital unit and cooperative in its freedom. There was a general momentum in it, half institutional, half moral, a single troubled, noble, exciting life. Everyone was laboring with the contradiction he felt in things, and perhaps in himself; all were determined to find some honest way out of it, or at least to bear it bravely. It was a fresh morning in the life of reason, cloudy but brightening."

It is good to recall how, of this vital unit, cooperative in its freedom, of personalities so unique and insights so noble and so contrary, Santayana was one, and the peer of any.

(*To be continued*)

H. M. KALLEN.

THE NEW SCHOOL FOR SOCIAL RESEARCH.

ON THE LOCUS OF TELEOLOGY: A REJOINDER

PROFESSOR L. J. HENDERSON'S reply¹ to my criticism² of his argument for teleology leaves open, it seems to me, several points which are worthy of further consideration. He deems my remarks on the locus of concepts not altogether germane to his teleological argument; they are, rather, a "criticism of the structure of knowledge," and anything of relevance that I advanced "can be met without passing beyond the field of science." On this ground he neglects to consider several of my arguments, and these I will leave, as he has left them, to the judgment of the reader. Nevertheless they concern not so much "the structure of knowledge," as the correct *versus* an incorrect use of certain concepts *within* "the field of science," and of some others in the field of philosophy.

The first point which Professor Henderson makes (p. 431) is that, contrary to my contention, he uses the term "unique" in a perfectly definite sense. "The heat of formation of water is the highest heat of formation of any compound from the elements, the solubility of carbon dioxide is such that it distributes itself equally between a liquid water phase and a gas phase," and so on for the other properties of carbon, hydrogen, and oxygen and of their compounds. "In general the properties of these three elements and of their compounds very often fall at singular points (maxima, minima, points of inflection, *etc.*)" and "it is a significant and useful approximation to a description of all the elements to say that the properties of these three are unique." And "the word unique here in question is fully defined by illustrations of every sense in which it is employed, and . . . it is never in my writings used to imply anything but its clearly stated content." It thus appears that the generic predicate "unique" does not refer to some property possessed by each member of the genus, but to a different property in each member. I still submit, as in my earlier paper, that the word "unique" here means nothing; and

¹ Cf. this JOURNAL, 1920, Vol. XVII, pp. 430-436.

² *Ibid.*, pp. 365-381.

this the more since Professor Henderson admits that "of course all elements are unique." The following would be an effort at generalization of exactly the same type:— The rose is red, the hippopotamus is clumsy, the politician is mendacious. Rose, hippopotamus, and politician are unique, and the word "unique is here fully defined" as the redness of the rose, the clumsiness of the hippopotamus, and the mendacity of the politician. I trust that this is not the type of generalization most familiar to "men of science."

Or if, since the properties in question "often fall at singular points," *singularity* is that which is supposed to be common to the genus, then precisely the same criticism applies to the predicate "singular." Every element and every property is as "singular" as it is "unique."

Secondly, I had previously asserted (pp. 367-8) that "Professor Henderson has surveyed the elements and their compounds and *selected out* for further consideration those whose properties do play this important part in life and evolution, that is, those which are fit for this purpose and 'fitted' to this end. He has thus slipped in the teleology, at the very outset, which he later brings forth and presents for our respectful admiration." To this Professor Henderson replies (p. 432): "For the moment it will suffice to deny this criticism and to insist that my statement is a valid approximation taking account of all elements," and that Holt's criticism is "due solely to a misinterpretation of the scientific evidence." This reply seems hardly to articulate with my criticism. I did not impugn the "scientific evidence." I merely said that if Professor Henderson selects for study the most important elements, he need not be surprised on discovering that they are indeed important; or, in my words (p. 378) "are the chief bearers of the process of evolution."

A third point³ in Professor Henderson's reply is introduced for reasons unknown to me. Though apparently irrelevant, it is interesting. "The variables of Gibbs's mathematical analysis—phases, components, temperature, pressure, concentrations, *etc.*—are the necessary and sufficient variables for the exact characterization of any physico-chemical system, absolutely without regard to the specific properties of whatever substances may make up the system. Of course the particular values of the variables in any case will depend upon the specific properties." It is interesting, surely, if Willard Gibbs has discovered the necessary and sufficient variables for the exact characterization of any physico-chemical system, absolutely without regard to the particular values of the variables.

³ Professor Henderson's "second point," p. 432.

Fourthly,⁴ Professor Henderson correctly points out (p. 433) that his "whole description of the relation of the properties of the three elements to the characteristics of systems is an illustration of the coöperation of factors in a manner so intricate and so varied, involving not merely individual properties that are maxima or minima, but also combinations of properties not themselves maxima or minima, yet nevertheless so related that maxima and minima result, and then combinations of these combinations." My criticism had been (pp. 369-375) that from these considerations Professor Henderson had leaped in the dark to the conclusion that just this, the actual, distribution of the properties of the elements is the most favorable possible to their maximal coöperation in the evolution of the universe. In his words, "This environment is indeed the *fittest*." He finds it (p. 433) "a cause of amazement . . . that Holt should ever have ventured such a criticism at all." It is equally a cause of amazement to me that Professor Henderson should have totally missed the import of my criticism. His consideration of maxima and minima in elements and in their compounds shows, doubtless, that what does happen can happen. But the next step, the conclusion that therefore this is the fittest of all possible environments, is an utter *non sequitur*. One could, no less legitimately, conclude that of all possible environments it is the worst.

Fifthly, Professor Henderson explicitly declines (p. 435) to meet my all too "familiar" strictures on the theory of probability, and on his use of it; and feels under no obligation to meet it because, for him, "probability is still, as Laplace once said, '*le bon sens réduit au calcul*'." My argument was aimed to show that "probability" is in part nonsense reduced to a calculus (pp. 371-5). In spite of such familiar objections, however, the scientist is in the habit of calculating probabilities, and (p. 435) "this habit of the scientist is universal and successful." That the scientist calculates probabilities, and that the scientist is often successful I quite grant. That his success is due to his use of the probability theory, I still venture, for the reasons previously set forth which Professor Henderson does not choose to consider, to disbelieve. His illustration is quite to the point (p. 434): "Laplace calculated the probability that, as a chance occurrence, the planes of the orbits of all the members of the solar system should be as nearly coincident as they are, and that all the planets and their satellites (so far as they were then known) should rotate and revolve in the same direction and approximately in the same plane. His calculation . . . led him to the conclusion that there must be some explanation of coinci-

⁴ Professor Henderson's "third and final point," p. 432.

dences so improbable." But if Laplace was concerned to learn why the planets and their satellites rotate and revolve as they actually do, it is a pity that he wasted his time with any such idle, preliminary calculation. What should we think of a physiologist who should preface his study of the knee-jerk by a calculation of "the chances" that a tap on the tendon below the patella would produce a contraction of the extensor muscle of the knee? Happily Laplace concluded that there must be "some explanation" of the lie of the planetary orbits and, even more fortunately, "such a conclusion is entirely acceptable to the man of science." Thus the scientific utility of the theory of probability is vindicated!

Meanwhile, I would refer the reader once more to my previous argument (pp. 371-5) against the theory of probability (and against Professor Henderson's attempted application of it), which rested on an examination of the concepts of chance, probability, and possibility (potentiality concepts, all, and a snare to clear thinking on the teleological problem), in order to determine their locus and legitimate use.

Professor Henderson's next, and practically his final, point overshadows all the others, and will bring us, I think, face to face with the real crux of his "teleology." And here I gladly acknowledge a previous error on my part. I had asserted (p. 365) that Professor Henderson believed his data to "argue a relation between past phenomena and present that is not mechanical, but is, in some sort or other, teleological." In this, it appears, I was altogether wrong. Professor Henderson (p. 436) is "aware of no such data and can not imagine such an argument." And (p. 435) "the properties of the elements and the characteristics of systems, like the properties of triangles, are changeless in time." It is "the *connection* between the properties of the three elements and the characteristics of systems" which is "teleological."

I was wrong then in supposing, as I venture to believe that Professor Henderson's audience at large has always supposed⁵, that in his argument for teleology he was *still* referring to the properties of real chemical elements, real systems, real processes, and

⁵ Misled, rather inevitably, by such statements as the following: "If changeless in time it [the "*connection*" just mentioned] must be in a justifiable sense of the term an absolute property of the universe" (*ibid.*, p. 435); or, "the connection between the properties of the three elements and the *evolutionary process* is teleological and non-mechanical" (my italics) (*Phil. Rev.*, 1916, XXV, p. 278); or, "biological organization consists in a teleological and non-mechanical *relationship* between mechanical things and processes" (*ibidem*).

to real evolution; in short, to the concrete physical universe. It now appears that this is not at all the case.

Such a revelation, for it seems to me nothing less, clears the situation at a stroke. For Professor Henderson's argument for teleology is now seen to be of the following type (to revert to the "time dishonored example of a watch"). The relation of the wheels and cogs of a watch to the watch as a whole and to the time that it keeps is a strictly mechanical and non-teleological relation. But the relation of the abstract, timeless and changeless properties of wheels and cogs to the abstract, timeless and changeless properties of watch-designs and of the time-keeping function is purely rational and non-mechanical, *i.e.*, is a "teleological" relation.⁶ However it may seem to a "man of science," it is hardly necessary to point out to any philosopher that no "relation" or "connection" subsists between two abstract entities which does not likewise exist between the concrete embodiments of those entities. On this fact rests the sole utility, and indeed the sole significance, of reasoning in terms of abstractions. Now in any case Professor Henderson's teleology is *not* a relation between past phenomena and present. He is "aware of no such data and can not imagine such an argument."⁷ Here-with for any mechanist Professor Henderson's argument for teleology ceases to exist.

What Professor Henderson may do with his teleology in the abstract, timeless, changeless realm, after he has made sure of its *being* even there, is no concern of the mechanist. But I would beg him first to devote some little study to the process or, may I say, the locus, of abstraction itself. This too has its special kinks. That Professor Henderson is not fully cognizant of these may be gathered from his avowal, concerning an argument which crucially turns on the strictly philosophical issue of abstract universals, that "the small amount of philosophical argument" which he has used is "almost though not quite entirely of secondary importance" (*ibid.*, pp. 430-431). An excellent point of departure for the more intimate study of abstract universals is to be found in *An Essay Concerning Human Understanding*. "That such abstract ideas with names to them," says Locke in the nineteenth

⁶ Cf. "the relationship is rational and non-mechanical, the things related mechanical and non-rational" (*ibid.*, p. 278); and "because it is merely a relationship and in no sense a mechanical connection, because it is unmodified by the evolutionary process and changeless in time [the 'connection' between the properties and evolution] is to be described as teleological" (*ibid.*, p. 279). I have hitherto not taken these remarks at their full value, because I was reluctant to impute to Professor Henderson a contention so extraordinary.

⁷ This JOURNAL, 1920, XVII, p. 436.

Section of the third Chapter of the third Book, "as we have been speaking of, are essences, may further appear by what we are told concerning essences; *viz.*, that they are all ingenerable and incorruptible. Which can not be true of the real constitutions of things, which begin and perish with them. . . . Thus that which was grass today, is tomorrow the flesh of a sheep; and, within a few days after, becomes part of a man; in all which and the like changes, it is evident their real essence, *i.e.*, that constitution whereon the properties of these several things depended, is destroyed, and perishes with them. But essences being taken for ideas established in the mind, with names annexed to them, they are supposed to remain steadily the same, whatever mutations the particular substances are liable to. . . . By this means the essence of a species rests safe and entire, without the existence of so much as one individual of that kind. . . . From what has been said, it is evident, that the doctrine of the immutability of essences proves them to be only abstract ideas, and is founded on the relation established between them, and certain sounds as signs of them; and will always be true, as long as the same name can have the same signification."⁸

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REVIEWS AND ABSTRACTS OF LITERATURE

The Idea of Progress. J. B. BURY. London and New York: Macmillan Co. 1920. Pp. xi + 377.

In spite of the profound influence which the idea of progress has exerted upon modern thought, there has been in English no adequate account of its development. Professor Bury's volume attempts with considerable success to fill this need. He has included little in the way of original theory, but has traced an important development in the history of ideas with lucidity and critical insight.

The scope of the narrative is broader than its title would indicate, for in showing the growth of this particular concept, the author has outlined as well the general trend of the philosophy of history from its origin until the idea of progress came to assume a central position. This trend is shown to approach by a necessary sequence of steps

⁸ If it is true, as Professor Henderson asserts (*ibid.*, p. 436), that I have attributed to his writings statements which they do not contain, I greatly regret the fact, and shall be glad if he will correct any such errors. I have endeavored rather meticulously to substantiate every ascription which I have made, by a direct quotation from his writings.

the eighteenth century's enthusiastic affirmation of belief in general human improvement, not achieving this conclusion until after the destruction of each obstacle in its way—the lack of historical knowledge, the belief in an arbitrary Providence and in Golden Ages of the past, and the long delay in appreciating the promise of natural science. Bacon, it is held, lacked the vision of indefinite future improvement, and Fontenelle's hope extended only to the growth of knowledge. To the Abbé de St. Pierre, therefore, is credited the first complete expression of the doctrine of progress.

The history of the idea since Condorcet forms a less continuous development, turning into the devious paths of the social sciences in their quest for objective laws of social change. For this reason, perhaps, the second half of Professor Bury's account is less systematic and less comprehensive than the first. The subject is not followed beyond Spencer, and the bearing of the evolutionary philosophy itself is very briefly told.

The effects which different standards of value have produced in the philosophy of history are scarcely mentioned, in spite of their intimate connection with theories of progress. The author himself appears to be content with the word "happiness" as a sufficient criterion of improvement, and nowhere suggests the problems that have arisen in attempts to define and defend it. The idea of progress, he writes in the introduction, "means that civilization has moved, is moving, and will move in a desirable direction. . . . To the minds of most people the desirable outcome of human development would be a condition of society in which all the inhabitants of the planet would enjoy a perfectly happy existence." In later chapters, among other details, one may find occasional reference to certain ethical ideas: to Helvetius' theory of utility, Kant's moral imperative, eudemonism, natural and ultra-natural sanctions of conduct. But beyond such casual mention, there is slight indication of the existence of any problem regarding ethical criteria, or of the variety of past and present opinions on the meaning of human improvement. Such under-emphasis upon the ethical aspect is not uncommon in considerations of progress, and leads, as in the present work, to an obscuring of one of the dominant factors in every verdict upon human events as progress or degeneration.

The book as a whole invites especial comparison with two others in the same field: Robert Flint's *History of the Philosophy of History in France*, and Jules Delvaille's *Histoire de l'idée de progrès jusqu'à la fin du XVIII^e siècle*. Both of these works are larger, and contain a profusion of details which Professor Bury has chosen to omit, yet which the special student may still find significant. Both

lack important sections of the field, however. Delvaille, stopping with Condoreet, omits the nineteenth century writers whom Bury includes. Flint, though carrying the narrative farther along than Delvaille, confines it largely to French writers, and thus leaves out several important figures in Germany and England. On the whole, then, the scope of Bury's work is larger, while it gains in clarity as well through economy of detail, sharp contrast of views, and systematic development.

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JOURNALS AND NEW BOOKS

THE JOURNAL OF EDUCATIONAL PSYCHOLOGY. May, 1921. *A Survey of the First Three Grades of the Horace Mann School by Means of Psychological Tests and Teachers' Estimates, and a Statistical Evaluation of the Methods Employed* (pp. 243-252) (Part I published in the Feb. issue): CLARA F. CHASELL and LAURA M. CHASELL. — This continues the report, recording the correlations obtained between various measures, evaluating these measures by comparing them with a composite of all the measures utilized, and giving a detailed account of the statistical methods employed in the conversion of these measures into mental ages. The highest correlation between the Stanford revision test and any other measure was .72 (60 cases) in the case of teachers' estimates. *Scientific Evidence on Handwriting Movements* (pp. 253-270): FRANK N. FREEMAN. — The teaching of handwriting is dominated by a very widespread dogma concerning the best way to write and the best way to teach writing. The dogma is the opinion that the so-called museular arm movement is a superior method of writing and that writing should be taught by emphasizing this arm movement, by giving exercises which develop it. Scientific evidence refutes it almost completely. The evidence indicates the following items of position have some relationship to excellence in writing: The pronation of the hand to such a degree that the wrist is not tilted more than 45 degrees from the horizontal; the position of the forearm at an angle of about 90 degrees with the line of writing; the support of the hand upon the third and fourth fingers rather than the side or the base of the hand; a position of the thumb and forefinger on the penholder which is produced by slightly bending the joints. In this position the forefinger rests nearer the point than the thumb. *Intelligence and its Measurement, A Symposium, XIV* (pp. 271-275): B. R. BUCKINGHAM. —

Whatever definition we may give to intelligence in the abstract, we are justified from an educational point of view in regarding it as ability to learn, and as measured by the extent to which learning has taken place or may take place. Eight steps which are next in research are given. *True-False Test as a Measure of Achievement in College Courses* (pp. 276-287): ARTHUR I. GATES.—The true-false examinations save an enormous amount of time of the teacher. They are preferred by 90% of the students. By their use it is possible to develop standards of achievement by which one class may be compared with others. Students report the true-false examination is conducive to more effective methods of study. Correlations with other tests of the same type average .54; with essay examination .33 which is as high as intercorrelations of essay examination. Correlations with intelligence tests are: the true-false .406, for essay examination .344. *Transmutation of Values on the Thorndike and Ayres Handwriting Scales: A Correction* (p. 288): T. L. KELLEY.—Statement in the December number corrected. Correct statement: The average variation of the estimate (of handwriting) upon the Ayres scale is 7.40 and upon the Thorndike scale when reduced to comparable units 7.85, which gives a difference of .44 in favor of the Ayres scale. The probable error of this difference is unknown, but is greater than .372. *Department for discussion of Research Problems: Some Things I Want to Do or See Others Do*: WILLIAM A. MCCALL. *Notes on articles in Educational Psychology in Current Issues of Other Magazines. New Publications.*

Heath, Arthur George. *The Moral and Social Significance of the Conception of Personality*. Oxford University Press. 1921. Pp. viii + 158.

Heidingsfelder, Georg. Albert von Sachsen. *Sein Lebensgang und sein Kommentar zur Nikomachischen Ethik des Aristoteles*. (Beiträge zu Geschichte der Philosophie des Mittelalters, Band XXVI, Heft, 3-4). Münster: Aschendorff. 1921.

Loisy, Alfred. *Essai historique sur le sacrifice*. Paris: Émile Nourry. 1920. Pp. 552.

NOTES AND NEWS

The French Philosophical Society, true to its promise at the meeting at Oxford in October, 1920, has decided to hold an extra session and invite to it the philosophical associations of England, Italy and the United States. This session will take place in Paris from the 27th to the 31st of December, 1921. The French society

plans to organize for this reunion a series of sessions analogous to its regular ones, in which papers sent in advance to members of the society will be read and discussed.

There will be four sections:

- I. Logic and the Philosophy of Science.
- II. Metaphysics and Psychology.
- III. History of Philosophy.
- IV. Ethics and Sociology.

The honorary president will be Professor E. Boutroux, who will open the session. The presidents of each division are respectively Professors P. Painlevé, H. Bergson, L. Lévy-Bruhl and C. Bouglé.

Each section will have eight sessions for papers and discussion. Each in its turn will be seated once in the general assembly.

The following subjects have been recommended for discussion:

SECTION I

- (a) The Nature and Function of the Concept.
- (b) Either, The Axioms of the Calculus of Probabilities or, The Most Recent Forms of the Theory of Relativity.

SECTION II

- (a) The Nature of Truth.
- (b) The Functioning of Intelligence.

SECTION III

- (a) Socratism and Platonism.
- (b) The Relation between Philosophy and the Physical and Biological Sciences since the Beginning of the Eighteenth Century.

SECTION IV

- (a) The Philosophy of Values and the Moral Life.
- (b) The Concept of the State and Contemporary Experiences.

These titles are meant only as very general indications and visitors are free to treat their subjects in any manner they please. It is hoped that in each section all the participating nations will be represented.

We learn from *Science* that the University of Vienna has created an honorary title to express its gratitude to those who have aided in relieving the material distress of the university during the last few years. This title has been conferred on Dr. Ferrière, the president of the International Red Cross; Dr. Franz Boas of Columbia University; the ambassadors of Great Britain and Sweden; the president and ambassador of Argentina; Mr. Herbert Hoover; and an English woman, Lady Mary Murray.

The title of emeritus professor of philosophy and comparative psychology in the University of London has been conferred on Mr. Carveth Read.

THE JOURNAL OF PHILOSOPHY

INSTINCT AND CAPACITY—I

THE INSTINCT OF BELIEF-IN-INSTINCTS

IN 1897 Alfred Russell Wallace began a review of Lloyd Morgan's *Habit and Instinct* with the following words: "There is probably no subject in the whole range of biology the study of which has been so universally neglected as Instinct." Those words could not be written now; since then it has rained instinct.

This prolific and varied instinct-literature, hopelessly confused and confusing to many readers, has one great virtue: it is largely self-refuting. It exhibits instincts of the most contrariwise characters, and an indefinite number of them, and consequently it is rapidly disposing of instinct as something that is to be taken seriously in human behavior. When instincts fall out, institutions get their due.

However, the process need not be left wholly to the passage of time and the increase of confusion; it may be possible that some principle of selection is at work that can be detected and exhibited. For instance, it is to be presumed that instinct, like every other principle of explanation, has been devised for a purpose, to the service of which it may or may not have been adequately well adapted. In the case of animal behavior the purpose was to indicate the character of a series of complex acts which to the casual observer appear to embody the detailed application of a plan to achieve a certain end. Yet no such plan is possible any more than the constant pursuit of a preconceived end. In such a case "instinct" means a definite series of complex acts that look ultra-rational but can be proved to be otherwise. These activities are stereotyped reaction patterns, intelligible to us only through their resemblance to our infinitely simpler and more generalized reflexes. They uniformly occur in the presence of the specific stimulus; they vary only infinitesimally from one individual of a species to another; species can be identified by their characteristic instinct activities.

The purpose which instinct has been invoked to serve in man is a totally different one. This purpose is to "be of service to students of the social sciences, by providing them with the minimum

of psychological doctrine that is an indispensable part of the equipment for work in any of these sciences";¹ in short to assist in the explanation of the social behavior of civilized man.

It is quite patent to everybody at the very outset, of course, that human behavior is multiform and heterogeneous to a unique degree. From one part of the world to another and from one period of time to another men conduct their various affairs by methods so different that our grandfathers were led to conclude that certain among them were not men at all in the sense of behaving like "men," and possessing "souls." Some fundamental resemblances there are—enough to make biological identification possible: the members of the species characteristically walk on the hind legs, standing erect; grasp objects with the prehensile fore-paws; eat by the digital introduction of food into the mouth, and so on. These are type activities of universal appearance, characteristic of the species, distinguishing it from other species. They are demonstrably not the effect of training acquired by each in his own life time; they can be shown to resemble more closely than any any other human activity the more complex reaction patterns of animal instincts. They are not susceptible to "modification" and "guidance" any more than their correlative animal instincts.

But these activities (groups of reflexes) because they are few and elementary in human behavior, but more just because they are genuine animal instincts spread evenly over the whole species and so do not afford the slightest clue to the cause of the multiformity and heterogeneity of social behavior, are therefore regarded by the social scientist with considerable dissatisfaction. Consequently he has set them aside. As a social scientist he is not interested in the peculiarities of the species as a species and therefore he has failed to note that while the instinct-reflexes which dictate the use of the feet, the hands, and especially the throat and tongue, are not sufficiently specialized to account for the peculiarities of social behavior, they do characterize the human economy as a whole. Ours is a feet, hands and throat economy.

Still further, in setting reflexes aside the social scientist has lost sight of the vastly more important functional capacities of the species. As the British anatomist, Wood Jones, has demonstrated,

¹ These words of the writer who has recently been called the "William James of social psychology" were intended to refer to his entire book; but since the instincts occupy by far the most important place in the work the statement seems not wholly malapropos when referred directly to instinct. Certainly no one would care to deny that this is the connotation in which instinct has come into vogue. See Carleton Parker, Ordway Tead, and others too numerous to mention.

ours is not a specialized structure with specialized (stereotyped) functions; its most conspicuous characteristic is its generalization. It is adapted to an immense variety of activities. Human physical coordinations are not so quick as those of most mammals; but they show a much wider range of adaptation. We do nothing well; but we can do almost anything. This opens up a tremendous number of questions of primary importance to the social scientist. Is there a limit to man's capacity for complex adaptation, as there is to his strength and speed? Does the exercise of one sort of capacity inhibit other varieties of adaptation? What requirements (oxygen; vitamins; sleep; leisure for muscular recuperation and nervous "let-down") are made by the different sorts of activities? Such questions are of unrivalled importance to those who wish to know the fate of civilized man.

But neither the study of functional generalization nor the isolation of hand and throat reflexes accounts for social behavior. The reflexes do not even account for the few basic uniformities—language, tool-and-machine technique; the capacities account for everything and nothing. If instinct is to serve the purpose of explaining social behavior it must equip man with a set of dispositions which steer him into his various civilized activities, as animal instincts do. Yet obviously they can not be stereotyped reaction patterns, as animal instincts are. Each instinct must be defined loosely as a vague sort of urge to do, not some particular act, but any one of the immense range of things which can be identified as belonging to the same sphere, so that symbolic fasting and ritualistic gluttony may both be equally the "expression" of the same "instinct of devotion." Perhaps in the background there might even be a basic "instinct of multiform mental and physical activity"—an instinct, one might even say, of metabolism.

Accordingly instinct in man has been defined in terms as remote as possible from those that delineate the stereotyped reaction patterns of animals. "Instinctive impulses" determine not the character of the behavior but "the ends of all activities, and supply the driving power by which all mental activities are sustained." This emphasis upon the general character of the "end" of the activity rather than upon the form of the act suggests as its accompaniment the definition of instinct as a "disposition which determines its possessor to perceive and pay attention to objects of a certain class," and not to them only but to "ideas of such objects, and . . . perceptions and ideas of objects of other kinds." In short, instinct in man is his disposition to behave whatever way he may behave.

Now "end" is a highly sophisticated word; one hesitates to dogmatize about the end of an activity. Any particular activity may be assigned an end, more or less remote, in terms of the human interests it serves; and it is possible to classify activities according as their presumed ends seem to be social or unsocial, economic, or religious, or familial, or national—or something else. And it is perfectly evident to everyone who has ever tried to invent a new instinct that this classification of human instincts—which is by definition only another way of classifying "ends" or spheres of interest—is very ancient, quite indispensable, and absolutely arbitrary. If you conceive the end of urban life to be sociability, then you can class it as "gregarious"; if you conceive it to be economic, then it is "acquisitive," or "proprietary" (or due to an instinct for unearned increment). In this sense the most solidly based of the human instincts is Mr. Kantor's "instinct to die"; for, as he points out, death is the "end of all activity."²

Naturally no one wishes to cavil over the classification of human activities; classification has its value, and is inevitable in any case. But classification and causation are two very different things. Because human activity may be grouped according to a prearranged scheme of "interests"—the initial postulate of which is that it shall be flexible enough to fit all manner of human behavior—it does not follow that anything has been "explained." It does not explain human behavior to say that human beings do all sorts of different things, but that a scheme of classification can be made so general that it will fit any cultural variety whatever. Some constant dynamic element must be assumed. It must be shown that there is a specific urge in man's nature that makes him do precisely thus and so. The word "instinct" implies such a constant and dynamic element; that is its connotation in animal psychology. Yet that element is avowedly lacking in the "instincts" with which the social sciences are advised to equip themselves.

And since there is nothing of the sort in human behavior—except the complex reflexes which are generally ignored because they have no social implications—what cause is served by implying that there is? Certainly not that of classification. The classification of human activities into appropriate departments could be carried out much more intelligently and intelligibly if it were entirely freed from the dogging suggestion of the word "instinct"

² Indeed Mr. Kantor is to some extent responsible for the whole conception of instinct which is exhibited here, since the writer was for some time a member of his anti-instinct cult at the University of Chicago. Possibly Mr. Kantor may some time be induced to publish a roster of the cult with the instincts for the invention of which the members were admitted.

that it must tie up somehow to the "primary" activities that spring from within, released by the aboriginal stimuli—or at least by "ideas of such objects and perceptions and ideas of objects of other kinds." It could then be made to serve whatever useful purpose might call for classification and could be modified to suit the purpose in view, as good classification always should be.

There still remains the purpose for which the instincts have been invoked—to be of service to students of all the social sciences. It is true that the students of the social sciences not only want clear classification, they also want certainty. They want "primary" activities. They want to know that property rests on an instinct of acquisitiveness; war on an instinct of hostility; family (European plan) on the parental instinct. In short, they are human and they want to be deceived. The instinct of belief-in-instincts is strong in their breasts. They do not want to be told that *homo sapiens* has an instinct of suckling, of walking on the hind legs, of grasping and clinging. They want an instinct to vote; even an instinct to strike!

This is not all, of course. The social scientist knows better than anyone how spontaneously and unrationally civilized men go through with the most complicated social acts; how thoroughly their ideas and beliefs are a part of their "natures." In the end human nature and social institutions seem to be a part of each other. The instincts seem a way out of a very confused situation. To say that a given line of conduct is a part of human nature is after all only a device of the social scientist's for saying that it is conspicuously common, uncritically accepted, almost automatic—that it is indigenous in a given people.

Yet no one has demonstrated more conclusively than the scientists in this very field³ that the human nature so developed is not an organic nature but a social nature; that the social behavior of the civilized adult is a matter of institutions and traditions, of the price system and the patriotic animus. It is a field wholly apart from animal behavior; it is the behavior of civilization. Its technique of analysis invokes not organic tropisms (unimportant in the life of societies) but beliefs and superstitions, crafts and arts, human associations worked into the whole cultural-emotional life of a people by the practise of generations.⁴

The social scientist has no need of instincts; he has institutions.

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³ Veblen. Cooley.

⁴ Of this sort is Veblen's "instinct of workmanship," as its author most carefully specifies. The later exotic development of the instinct literature has made it a misnomer.

A DILEMMA ABOUT DILEMMAS

THE recent article on "The Complex Dilemma" by Professor Theodore de Laguna has aroused in me such extreme disagreement that the following criticisms were written. The article¹ accuses the complex dilemma of being fallacious both in its constructive and in its destructive forms. A traditional definition of the dilemma in one of its forms is cited. "The complex constructive dilemma is described as a form of syllogism, in which the major premise is compound, consisting of two (or more) hypothetical propositions; while the minor is a disjunctive proposition, the members of which are the antecedents of the major; and the conclusion is a disjunctive proposition, the members of which are the consequents of the major."² The article then points out that if the disjunctive propositions in the minor and the conclusion are interpreted as exclusive alternatives, the argument is fallacious.³ If the disjunctive proposition in the conclusion alone is treated as non-exclusive, then the argument is redundant, because the minor premise need not be exclusive.⁴

The argument of the article so far may be stated as the following dilemma.

If the minor and the conclusion are exclusive alternatives, the argument is fallacious; and if the minor is exclusive and the conclusion is non-exclusive then the argument is redundant.

But either the minor and the conclusion are exclusive, or the minor is exclusive and the conclusion is non-exclusive.

Therefore the argument is fallacious or redundant.

This is the exact meaning of the criticism of the dilemma. It is perfectly obvious that the minor premise here is false, because it overlooks the possibility that both the minor and the conclusion may be treated as being formally non-exclusive alternatives. If this treatment is given, the complex dilemma is neither fallacious nor redundant.

The present writer is one of those who regard as pre-scientific all of the formal or deductive logic which fills our text-books. But perhaps many of the older logicians were more accurate than Professor de Laguna supposes. The most accurate of the older logicians was J. N. Keynes. In the fourth edition of his *Formal*

¹ This JOURNAL, Vol. XVIII, pp. 244-246.

² Page 244.

³ Page 245.

⁴ Page 245, bottom.

Logic he specifically limits the meaning of "or" to the non-exclusive interpretation.⁵ He repeats this in his treatment of disjunctive syllogisms and obviously intends it to apply to the dilemma.⁶ So the most careful of formal logicians can plead not guilty to Professor de Laguna's accusation.

The only logicians mentioned by Professor de Laguna are Whately and Jevons, from whom is quoted an example of a "hoary sinner." "Thousands of students have been called upon to look upon it as an exemplar of rationality."⁷ Professor de Laguna gives the impression that both Whately and Jevons were guilty of a serious break. But as a matter of fact the dilemma quoted from these writers is entirely valid formally, provided that the "or" in the minor and in the conclusion is interpreted non-exclusively. It so happens that both Whately⁸ and Jevons⁹ carefully and explicitly defended the non-exclusive interpretation of "or." Consequently the thousands of students, so pitied by Professor de Laguna, have been in no manner misled.

The root of all these troubles is the fact that "or" is normally non-exclusive in its strict meaning, but so frequently the meaning of the alternatives indicates that they are exclusive as a matter of fact. The meaning of "or" in logic should be defined non-exclusively. "P is true or Q is true" means "it is not true that P and Q are both false." In some but not all of the cases, P and Q will be exclusive, but this is an additional fact.

If Professor de Laguna had confined himself to pointing out the fact that certain widely used text-books in logic¹⁰ are guilty of the error of combining the complex dilemma with the exclusive interpretation of disjunction, his article would have been useful. Certainly the non-exclusive interpretation of disjunction is required for the complex dilemma.

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⁵ Section 191.

⁶ Sections 317-318.

⁷ This JOURNAL, Vol. XVIII, 246.

⁸ R. Whately, *Elements of Logic*, book 2, chapter 4, sections 4 and 5. I have the Boston edition of 1845, pages 110-115.

⁹ W. S. Jevons, *Lessons in Logic* (London, 1882), pages 166-168. Compare *Principles of Science* (London, 1913), pages 68-71; also the little primer *Logic*, pages 72-73.

¹⁰ For example, J. E. Creighton, *Introductory Logic* (third and fourth editions), pages 154-163.

AMERICA AND THE LIFE OF REASON. II

V

The discussion of James and Royce by the last survivor of the great school brings together in a fashion vivid and touching and beautiful the diversified spirit of its oneness, the uncompromised singularity of each member of that high fellowship. There is neither need nor service here to expound and review the differences between Mr. Santayana and his colleagues, and to resume his criticisms, profound or wise or mischievous or uncomprehending, of idealism and pragmatism, or his harder, less urbane, somewhat contemptuous judgment of the new realism. These have been often stated and are well known, but the perfection of their form adds an esthetic, not a logical, value to their content. Nor is anything added to the method. Mr. Santayana still restates the alien doctrine in the light, not of its own premise and the signification of its own terms, but of his own view as critic. He still makes the same assumption that such a shift of the premises does not put the argument beside the point, that it does not, like the "higher superstition," convert inquiry into an exercise in assurance, that it is not in its own turn the arguing of a foregone conclusion. Take as an instance, the discussion of James's ideas regarding the will to believe: "In some cases," Mr. Santayana interprets, "faith in success could nerve us to bring success about, and so justify itself by its own operation. This is thought typical of James at his worst—a worst in which there is always a good side. Here again psychological observation is used with the best intentions to hearten oneself and other people; but the fact observed is not at all understood, and a moral twirl is given to it which (besides being morally questionable) almost amounts to falsifying the fact itself. Why does the belief that you can jump a ditch help you to jump it? Because it is symptom of the fact that you *could* jump it, that your legs were fit and that the ditch was two yards wide and not twenty. A rapid and just appreciation of these facts has given you your confidence, or at least has made it reasonable, manly and prophetic; otherwise you would have been a fool and got a ducking for it. Assurance is contemptible and fatal unless it is self-knowledge. If you had been rattled you might have failed, because that would have been a symptom of the fact that you were out of gear; you would have been afraid because you trembled, as James at his best proclaimed. You would never have quailed if your system had

been reacting smoothly to its opportunities, any more than you would titter and see double if you were not intoxicated. . . . Nor is the moral suggestion here less unsound. What is good is not the presumption of power but the possession of it: a clear head, aware of its resources, not a fuddled optimism, calling up spirits from the vasty deep. Courage is not a virtue, said Socrates, unless it is also wisdom. Could anything be truer both of courage in doing and of courage in believing? But it takes tenacity, it takes *reasonable* courage, to stick to scientific insights such as this of Socrates or that of James about the emotions; it is easier to lapse into the traditional manner, to search natural philosophy for miracles and moral lessons, and in morals prefer, in the reasoned expression of preference, to splash about without a philosophy."

Those who recall the passage in "The Sentiment of Rationality" on which these sentences are commentary will perceive at once how it is parodied, and—the observation is unavoidable—degraded. An unwonted and momentous situation is made over into a commonplace one; an issue of life and death into one of walking or getting a ducking; an abyss is converted into a ditch, a terrible leap into an ordinary jump. The propulsive emotional crisis, the absence or impossibility of any basis competent for inference are converted into their opposites. The *process* of the self-confirmation of the act of faith that creates its own verification is displaced by the prior guarantee in observation of this verification. Prospect and change are declared to be really retrospect and fixity; you *have* jumped the ditch because you *could*. The whole premise of the argument has been shifted and the contrary conclusion drawn from the contrary premise. The risk, on which courage is postulated, the conception of faith as the willingness, in James's words, "to act in a cause the prosperous issue of which is *not* certified to us in advance," or as the "courage weighted with responsibility—such courage as the Nelsons and Washingtons never failed to show after they had taken everything into account that might tell against their success and made every provision to minimize disaster," these are ruled out. After much brave protestation, the game is made a game with loaded dice after all, made just what in James's hypothesis it absolutely was not. In effect, the argument does not refute, it contradicts. Mr. Santayana's philosophy runs parallel with those of his colleagues but does not meet them. The same heaven arches over them, whose shifting iridescence they alike give back; they are fed by the same springs and they water the same lands and are by them muddied, and that is all. They touch sometimes, but mingle never, and perhaps never could.

It is this mingling of the same earth and sky in their separate streams that renders them alike American. Neither could Santayana escape the bondage of the "two different responsibilities," that of "describing things as they are, and that of finding them propitious to certain preconceived human desires." For the life of reason is no less such a desire, and for all its obscurity no less pervasive, and for all its urbanity no less capable of becoming a dogma and generating a religion than the "higher superstition." The adventure after the "good life" was undertaken by all three alike, under a similar impulsion and in a similar atmosphere. That what each found should have been different is not without its implication of the nature of things, or of the condition of the intellectual life in the United States. And that one kind of life only should be called a good life, and that of a fashion arising not from the soil of present life, but from a memory and estimate of life long gone, that perhaps is most romantic and American of all.

Of the relations of James and James's thought to this America, Mr. Santayana says very little. He remarks how essentially different and other James appeared to the academic and social community in which he dwelt, how he was a liberal—"one of those elder Americans still disquieted by the ghost of tyranny, social and ecclesiastical," but nothing more. He ignores his militant love of peace, so essentially American, his reformist spirit, so characteristic of New England. His preoccupation is entirely with James's temperament and philosophy. These he sums up as "a romantic mind soaked in agnosticism, conscious of its own habits and assuming an environment the exact structure of which can never be observed;" the conception of radical empiricism and pragmatism as methods, the analysis of belief, the notion of pure experience, the analysis of truth, and the other spokes in the wheel of James's thought are really treated as radiations from this central hub. Consequently, James's greatness accrues to him as a psychologist, not as a philosopher. Philosophy was to him, in Mr. Santayana's estimation, not a "consolation and a sanctuary in life which would have been unsatisfying without it," but "a maze in which he found himself wandering," and he was trying to find his way out of the maze. But this philosophy, Mr. Santayana fails to recognize, was the verbiage of the schools; it was not the way out or the brave seeing of the contradiction in things and in oneself which he as bravely celebrated in his description of the Harvard school.

Yet, to the American aspect of this contradiction in things and men James was a philosopher most sensitive. In his training and contacts he was essentially more cosmopolitan than either of his colleagues; his philosophy was nevertheless an insight into the eternal

springs of this contradiction, flowing so much more freely, into channels so much less artificial in America than in Europe. He had a greater natural kinship with America's spontaneous life and he envisaged in a pertinent metaphysical premise the whole unbalanced and shifting structure of the changing American economy; the atomism and fluidity of American society; the democratic dogma; and, most famously and influentially, the tenacious experimentalism, the swift courage, the stark faith of men to put life and property and opinion to the proof of adventure into the unknown wilderness toward whatever "good life" nature suggested or calculation advised.

In Royce's thinking the same influences are present, but not freely. Between them and his vision there is interposed the veil of the genteel tradition, and its unity and texture imparts to them a false solidity. He is not, like James, looking at the tradition as well as the thing, and evaluating the tradition also. He is looking at the thing, certainly, persistently, and looking at it *through* the tradition. Hence a certain liturgical unction and obscurity which pervades Royce's thought. He viewed everything, Mr. Santayana says, in relation to something else, and this something contained invariably an element sad and troublesome, out of which the thing under view, if good, arises by a sort of Hegelian implication. His proof of the existence of God is his demonstration of the reality of error; his assurance of the reality of the good was his experience of the power of evil. He argued, in effect, in his own special way the foregone conclusions of the "higher superstition." His philosophy was all compensatory. By translating Calvinism into epistemological terms, by imparting to the dialectic method of Hegel the earnestness, eloquence and voluble passion of his own temperament and scene, he gave the genteel tradition a new pattern and an added content. This was not logical. He had, it is true, a reputation for logic and loved the intricacies of logistics; he could, on occasion, eye to eye with Spinoza, see things under the aspect of eternity. But "there was no clearness in his heart." In him the intellect, which Mr. Santayana regards as the "faculty of seeing things as they are," was dimmed and distorted by the passion for seeing things as we want them to be. Nevertheless, the hardness of the nature of things, its pang and poison, troubled Royce. He had a reverence for what hurts: "in so far as God was the devil . . . devil worship was true religion." Life and the good of life are the struggle between good and evil, and the struggle can not be unless evil exists the peer of good. The proof of this was evident in daily routine as well as Hegelian logic. Royce "had always experienced and seen about him a groping, burdened, mediocre life; he had observed how fortune is

continually lying in ambush for us, in order to bring good out of evil and evil out of good. In his age and country all was change, preparation, hurry, material achievement; nothing was an old and sufficient possession. . . . The whole scene was filled with acts and virtues which were merely useful or remedial. The most pressing arts, like war and forced labour, presuppose evil, work immense havoc, and take the place of greater possible goods. The most indispensable virtues, like courage and industry, do likewise. But these seemed in Royce's world the only honorable things." Thus the grappling with nature of which so much of American life consists was converted into a standard of life, and given such grace and distinction as clothing it in the decent garment of the genteel tradition might impart. In this lay Royce's personal conscience, and it carried him beyond his Hegelian ethics, as his protest against the sinking of the *Lusitania* showed. By training and technique a Hegelian, by implication a solipsist, this conscience of his, which "added a deep, almost remorseful unrest to his hard life," carried him beyond Hegelism, making his God real, and begging the gratuity of another life in the immortal society of his friends. All in all, Royce "resembled some great-hearted mediaeval peasant visited by mystical promptings, whom the monks should have adopted and allowed to browse among their theological folios. . . . His was a gothic and scholastic spirit, intent on honoring God in systematic works, like the coral insect or the spider; eventually creating a fabric that in its homely intricacy and fulness arrested and moved the heart, the web of it was so vast, and so full of mystery and yearning."

It may be inferred from Mr. Santayana's treatment of both James and Royce that the fulness of the new world influence was not manifest in them. To him their insight was a mingling of tradition and actualities, with tradition more than a little dominant. In the later contemporary movements of philosophy in America the relationships are, however, reversed. Tradition is either passing or forgotten. He sees the younger professors of philosophy as more like engineers or doctors or social reformers than clergymen or schoolmasters. Religion has ceased to signify anything momentous for them. They are no longer so eloquent and apostolic as professors of philosophy used to be; instead, "very professional in tone and conscious of the *Fach*," a special craft in the academic industry. The younger American professor of philosophy is a person with an education "more pretentious than thorough; his style is deplorable; social pressure and his own great eagerness have condemned him to overwork, committee meetings, early marriage, premature authorship and lecturing two or three times a week under forced draught. He has no peace in himself, no window open to a calm horizon, and in his heart per-

haps little taste for mere scholarship or pure speculation. Yet, like the plain soldier staggering under his clumsy equipment, he is cheerful; he keeps his faith in himself and his allotted work, puts up with being toasted only on one side, remains open-minded, whole-hearted, appreciative, helpful, confident of the future of goodness and of science. In a word, he is a cell in that teeming democratic body; he draws from its warm, contagious activities the sanctions of his own life, and less consciously the spirit of his philosophy."

The marching front of this spirit is to be found in pragmatism and new realism. The former is a confusion of mind which converts truth, the vision of all things under the form of eternity, ever beyond the reach of psychology, into the psychological doctrine of the relation of signs to things signified, interpreting this relation in terms of contiguity and succession. The latter is a standing on its head of the traditional German idealism. This replaced things by consciousness; the new realism replaces consciousness by things. It relieves "an overtaxed and self-infected generation" by "abolishing a prerequisite to the obvious, and leaving the obvious to stand alone." It democratizes reality by reducing everything to the same status and making it equally accessible to everybody. "The young American is thus reassured: his joy in living and learning is no longer chilled by the contempt which idealism used to cast on nature for being imaginary and on science for being intellectual." Both the contemporary schools thus reflect the atmosphere of America, and in two ways. First, in that "it has accelerated and rendered fearless the disintegration of conventional categories. . . . In the second place, the younger cosmopolitan America has favoured the impartial assemblage and mutual confrontation of all sorts of ideas. It has produced, in intellectual matters, a sort of happy watchfulness and insecurity." And this is how migration to the new world has affected philosophical ideas.

Which may be so. But I doubt whether even those pragmatists and new realists who have been curious about just such matters and have reflected on them will recognize the features of their ancestry or themselves in the portrait. "The disintegration of conventional categories," they will concede, but the new realists will insist, I think, that so far as they are concerned it is a conventional and not an American disintegration, and that the forces which operate it in America do not differ in kind, intensity or range from those in Europe. The pragmatists will concede the total implication of the description, but will declare that Mr. Santayana has altogether failed to grasp its character and import. This failure is perhaps at base emotional rather than intellectual. Mr. Santayana has always manifested a certain blindness to the ideas of change and

time and flux in their intrinsicity and inwardness, and a certain imperviousness to the meaning of the categories and concepts which have grown out of them, and the new philosophic technique which they have generated. Preoccupied with the eternal, the static, the immutable, as Plato and Aristotle and Spinoza have formulated these in ethics and physics and psychology, he has invariably translated the studies of the temporalists into the language of the eternalists, substituting these incommensurables for one another, with beautiful but not cogent results. With the new realists, on the other hand, he is more at home. He and they have the same devotion and speak the same language. They also are eternalists, preoccupied with the unchanging structure of things. They are, however, so preoccupied, not because they recognize change and acquiesce in insecurity, but because they deny change and, fearing, resent insecurity. That they have "abolished the prerequisite to the obvious" is a sign of this denial and resentment. This abolition is not a simplification which frees the new realist's "joy in living and learning . . . from the contempt which idealism used to cast on nature for being imaginary and on science for being didactic." On the contrary, there appears to be no joy in the neo-realist. He is as Calvinistic as his forebears. Only the incidence of the cosmic compulsion has been shifted for him. It resides no longer in the immutable decrees of a transcendental God, but in the immutable architectonic of a nature whose laws operate by logistical implication and whose providence is didactic without being altogether personal. Thus, together with the denial of a prerequisite to the obvious goes the establishment and cultivation of security, the relaxation of watchfulness. It is an attenuation of the "higher superstition," but it is the higher superstition still. It is the modern scholasticism, the scholasticism of science converted from a method of inquiry into a process of affirmation, from the logic of experiment to the logic of assertion. Its social inspiration is to be sought in financial industrialism, with the regimentation, precision, inevitability of the automatic machine in shop and factory, and in the similar qualities more refined in the mathematics of accounting in bank and office. It is unrelated to the sentiment, experience and aspiration of the migration to the new world. That has still not reached expression in philosophy. It is as yet vocal in poetry alone.

VI

So much, then, for Mr. Santayana's resolution of the puzzle of America. It is complementary rather than parallel to those of his predecessors and fellows in the field, dealing with an inward aspect of American character and opinion too withdrawn and elusive for

any but a familiar friend to touch without distorting or to interpret without misunderstanding. It has the same narrowness and oversimplification as these others, but if it is blind to what they have seen, it is keenly sensitive to what they are blind to. Mr. Santayana is himself perhaps too deeply absorbed by the ardors and glories of the topmost turn given to life to have much sympathy for its soil or roots or branches. His study has failed to take note of the political character of the American being, of the overwhelming influence of the rigid identities of political pattern of state, nation and city, or the power of the public school as the transmitter of the national tradition and the perpetuator of the democratic dogma, or the relation of these to the stratifying influence of the automatic machine, or the interaction of these with the diversities of soil and climate, race and culture which are constitutive of the land, and the additional diversities which are added by "the miscellany of Europe." These seem to me at the present time to have been adjusted to one another as a tensive and unstable equilibrium of forces rather than a cooperation of spirits; the various movements in art or philosophy appear more truly as negations of them or compensations for them than as their expression. What the America of the new time will be depends altogether on how soon and how completely the unstable equilibrium of forces is converted into the cooperation of spirits, and the negations and compensations become affirmations and expressions.

H. M. KALLEN

THE NEW SCHOOL FOR SOCIAL RESEARCH

REVIEWS AND ABSTRACTS OF LITERATURE

Psychopathology. EDWARD J. KEMPF. St. Louis: C. V. Mosby Co. 1920. Pp. 762.

Dr. Kempf has given us in this work not only the closest approximation to a treatise on psychopathology that has yet appeared, but also offers us a volume replete with suggestions—valuable both to the student of normal and of abnormal human conduct—concerning the development of human reaction systems. The psychopathological studies of which this book is an example not only mark a definite advance in the attempt of psychopathologists to understand unadaptable persons and their variant behavior, but they also add materially to the debt which psychology has been owing to students of abnormal phenomena since the days of Charcot and Liébault. How great this debt is which psychology owes to the psychopathologist may easily be ascertained by observing the changes both in viewpoint and in factual material which recent psychological

writings manifest, changes which are traceable to the influence of the students of psychopathic phenomena.

But let us turn to the field of abnormal behavior. It is a distinct contribution to psychopathology to rid itself of the useless and meaningless impedimenta commonly called mental symptomatology and to attempt to describe abnormal phenomena on the basis of conduct mechanisms. Obnoxious is the traditional psychiatric chapter on symptomatology, not only because it is based upon a false psychological conception, but also because, as Kempf amply indicates, from a practical point of view it offers no help in classifying cases, since delirium as a symptom, for example, may be a factor in many totally different types of pathological conditions. This is not to imply, of course, that the psychopathology which is designed to seek for mechanisms is without its difficulties of classification. Such difficulties are entirely to be expected in a domain where the facts are so complex and so difficult to seize upon.

Kempf starts with a Freudian foundation; and upon a conflict basis which he states as a clash between the ego and an ungratifiable segmental craving or wish, he classifies the mechanisms of abnormalities into five distinct but not mutually exclusive types, as follows: suppression, repression, compensation, regression, and dissociation neuroses. The term neurosis is preferred to psychosis because, after all, thoughts and wishes Kempf thinks of as integrated physiological processes. The mechanistic difference between these neuroses may be communicated best in Kempf's own words.

Suppression Neuroses: clear to vague consciousness of the nature and effect of the ungratifiable cravings.

Repression Neuroses: vague consciousness to total unconsciousness of the nature and influence of the ungratifiable affective cravings.

Compensation Neuroses: persistent striving to develop potent functions and win social esteem initiated by fear of impotence or loss of control of asocial cravings.

Regression Neuroses: failure to compensate but regression to a preceding more comfortable, irresponsible level, permitting wish-fulfilling fancies, postures, and indulgences.

Dissociation Neuroses: the uncontrollable cravings dominate the personality despite the efforts of the ego to prevent it.

Just why Kempf uses the term "affective cravings" when he really means and almost everywhere says sexual cravings, is not entirely clear. Remembering the author's persistent tirades against prudishness, can it be that those declamations are compensation mechanisms for the excessive modesty here displayed?

Or is the absence here of the term sexual a manifestation of Kempf's Unconscious attempting to mitigate his excessive use of the Freudian symbol?

The fifteen chapters of the volume divide themselves into five different groups, not all of which fit in smoothly with all the others. Chapter I, entitled "The Physiological Foundation of the Personality," constitutes a reprint of material from the author's *The Autonomic Function and the Personality*. In this and the three following chapters are stated the more technical principles of behavior which the author unwisely assumes to be applied later. As a matter of fact there appears to be no special connection between the psychological theory of the book and the later case studies. In Kempf's acceptance of the Freudian principle concerning the sexual basis for all human behavior is found the motive for reducing the foundations of personality to the operation of the neural apparatus. This extreme simplification and generalization of human reaction Kempf believes to be supported by recent studies on the autonomic nervous system.

In brief, the author assumes that behavior is initiated by stimulation of the autonomic nervous apparatus and the visceral organs connected therewith. This is Kempf's means for doing justice to the principle of the peripheral origin of the psychological processes. Now certainly one might readily see a very close connection between the autonomic apparatus and physiological sex functioning, but extremely far is the cry from the visceral functions of sex to the complex and intricate behavior of men and women in relation to each other, to say nothing about all the other behavior influenced very little or not at all by sexual conditions.

The author feels a distinct need to overemphasize the functions of the autonomic apparatus, which he considers to such an extent as primary in development and function that the cerebrospinal system is presumed to develop and to operate merely to carry out the "wishes" of the autonomic apparatus. Let not the reader here misplace the responsibility for the personalization of the autonomic nervous system. It is Kempf's explicit idea that the autonomic activities constitute what is generally thought of as the soul or will and the unconscious, although it is true that with respect to this doctrine as with others, there is a good deal of irresoluteness in our author.

Both the attempt to substitute the activity of the autonomic apparatus for such a tabooed entity as the soul, and his vacillation concerning the actual transmutations, indicate sufficiently Kempf's amateurish position with respect to the problems of psychology. Suffice it to point out the crass substitution of the "affect" and

"ego" for the vigorously rejected "soul," and the hopeless confusion of the autonomic activities with mental states or awareness, as exemplified by indifferently making hunger, shame, pity and grief into segmental cravings. What meaning and power he puts into the term integration when he makes "consciousness," in the good old-fashioned sense, the integration of physiological actions.

Kempf is floundering here in hopeless confusion. He starts out with the prejudice that all behavior is due to some internal craving and thus he finds the autonomic apparatus the basis for all action. But the obvious difference between implicit reactions, such as the wishes, which frequently precede physiological activity in the form of overt responses, makes him take over bodily the old mentalistic machinery. As we might expect, the result is a chaotic mixture of incongruous elements. The reader will of course appreciate what is here transpiring. Just as in the early days of Darwinism psychologists seized upon the central nervous system as the tangible basis for their intellectualistic psychology, so here, when feelings and emotions come into their own, a seat and basis is supplied them. We must look upon Kempf's emphasis of the autonomic apparatus as a just tribute to the victories of the affective consciousness.

In Chapter II, entitled the "Psychology of the Family," Kempf leaves room for so many easily recognizable facts concerning human reactions aside from sex that the chapter hardly comports with the rest of the book. Of primary importance in the opinion of the present writer are the suggestions in this chapter of the mechanisms for the development of personality which the family affords. Especially noteworthy is Kempf's convincing remark concerning the ascription by psychologists of functional disorders to "hereditary taint," "constitutional inferiority" and "defective heredity," when as a matter of fact these fundamental difficulties are really the development of faulty reactions through stimulating conditions within the family group. Unfortunately we must add that our author attempts to be persistently consistent, and consequently strives to overemphasize whatever material on sexual conduct he treats of. And thus he perverts the fair promise of the chapter into a continuous illustration of the supreme influence of the parents' sexual characteristics and difficulties upon the development of children.

As a basis for the person's numerous conflicts and resulting abnormalities Kempf expands the simple biological functions of the autonomic apparatus to include activities which he describes as "The Universal Struggle for Virility, Goodness and Happiness." Accordingly, the third chapter carrying this phrase as a title is devoted to a description of how the conventions of society mould and condition the autonomic cravings of the individual. Should the auto-

nomie cravings prove stronger than the controlling forces of custom, and need expressions which are tabooed by society, then neuroses are developed to give relief. Our author defines virility as the "capacity of the autonomic apparatus to compensate, when environmental resistances tend to prevent the fulfillment of its wishes and needs." Goodness is a state of feeling that is roused when the act or sequence of acts gratifies those wishes of the individual which promote his own career as well as the wishes that promote the interests of the race." "Happiness is felt as the autonomic tensions which becoming gratified, permit the striving postural tensions to change to comfortable tensions." In spite of the author's obtrusive "postural tensions" designed to keep his materials on a simple biological plane, in this as in the preceding chapter there is presented with admirable insight facts concerning the general development of the person among his social surroundings. Because the Freudian psychopathologists are dealing with actual human beings and their behavior, they are fortunately defeated in their aim to make of man an exclusively sexual organism and to make all of his behavior center around sexual activities.

In Chapter IV, which is entitled "The Influence of Organic and Functional Inferiorities upon the Personality," Kempf prepares the way for the elaborate case studies which he presents. An inferior organ or function produces in the person a "fear of failure" in the various competitions with other people, and unless this fear of failure is compensated for the result is an anxious neurotic individual. Although Kempf apparently allows for inferiorities of all sorts including lack of vocational skill, physical means or social opportunities, he believes that the most serious are the marked organic inferiorities such as "girlish physique, hairless skin and soprano voice in a male, or a mannish physique, facial hypertrichosis and baritone voice in a female," and the functional defects of the autonomic functions resulting in irresistible cravings which can not be satisfied without the severe censure of society. In making place for the abnormalities of behavior which are due to the necessities of compensating for all sorts of social and economic inferiorities the author paves the way to keen insight into the mechanism of normal as well as psychopathic conduct, but unfortunately very little is made of such suggestions. As we have so frequently been forced to say, the Freudian serpent, which winds its libidinous trail throughout the volume, influences Kempf to account for practically all psychopathic conditions as failures of sexual compensations. And so his reference to social esteem as providing a stimulus for compensation and the various casual references in the volume to other than sexual difficulties may be justly

considered as attempts to overcome the scientific inferiority implied in the effort exclusively to account for normal or abnormal behavior by personal factors and especially when those factors are assumed to be purely physiological mechanisms.

Following the section on principles just reviewed, we find in the fifth chapter a discussion of the author's classification of neuroses which we have already described. Here the distinction is made between benign and pernicious neuroses. In the former the patient accepts the personal source of the wishes or cravings, while in the latter cases the individual opposes and does not accept the segmental cravings as his own. The latter cases are therefore the more difficult to handle. This chapter precedes the eight chapters which we have grouped into the second part of the book.

Part two of *Psychopathology* consists of a series of case studies, of which there are in all 96 cases, including a few used for illustration in part one. These cases, all but a few of which are from St. Elizabeth's hospital, receive in some instances brief descriptions, and in others very long discussions. All, however, are presented with a clear view to illustrate the author's classification, and as a consequence they frequently appear forced and exceedingly overemphasized in the matter of erotic details. Especially clear is this prurustean adaptation of cases and the accentuation of erotic particulars illustrated in the first of the eight case study chapters (Ch. VI) entitled "The Mechanism of the Suppression or Anxiety Neuroses." Here two cases are described, that of Charles Darwin and another scientist, both of whom unquestionably had many anxiety experiences but not necessarily because they had sexual segmental craving suppressions. When sexual details are present they may serve as stimuli to anxiety in exactly the same way as the inability to receive a certain appointment or the undergoing of any other financial or social failure of expectation.

As one might expect, Kempf includes among his sexual suppressions subtle interests in the parents of opposite sex, and thus he presumes to trace back any sexual factor that he requires to early family influences. Obviously he is here leaning upon an easily recognizable Freudian support. It is undoubtedly true that Darwin's early life was full of doubts and conflicts and that he suffered much from an inability to adapt himself to his surroundings. The latter fact is absolutely demonstrated by Darwin's indifference to school learning because his interests were not in accord with the methods and materials of schools, and by the lack of agreement between his inclinations and his father's desires concerning his career. But unless one is to take sexual affective cravings as the absolutely indifferent causes for everything that happens, Darwin's life merely exemplifies

the ordinary difficulties which any highly organized personality experiences. The absence in all this of a definite sexual factor is compensated for by Kempf's statement that certainly Darwin must have been interested in sex, for this is clearly indicated by the titles of his books, which the author quotes. As if Darwin's investigations in heredity meant nothing in themselves!

Under the caption of "Repression or Psychoneuroses" (Chap. VII), Kempf enunciates the principle that compulsions and obsessions arise from the fear of yielding to a repressed wish by concentrating upon a substitute. The substitution is the troublesome thing, for it may result in the elimination of some necessary function as is the case in functional anesthesia or paralysis. Here again it seems that by injecting the wish which soon takes a libidinous form we find the author barring the way to an unbiased understanding of the mechanisms of an important and common form of abnormal behavior. Of course there are sexual psychoneuroses but does this exclude the existence of many other kinds? How strong is Kempf's affective craving for the sexual factors may be judged from his repression of the suggestions he himself makes of other bases for psychoneurotic behavior.

In the chapter on "Manic Depressive Compensation Psychoses" (Chap. VIII), the manic phases are considered as due to fear of loss of sexual potency and the fear of domination by perverse cravings, while the depression phases are presumed to represent regressions to a more primitive stage of existence because of autoerotic cravings.

Follows then a chapter on "The Psychopathology of Paranoia" (Chap. IX), in which cases are unconvincingly presented to illustrate the principle that paranoid individuals attempt to compensate for sexual inferiority by striving to attain to heterosexual virility. Most strikingly does this chapter illustrate the inadequacies and the distortions of the sexual psychopathologists.

The last four chapters of case studies are devoted to cases of Pernicious Dissociation Neuroses. "The Psychology of the Acute Homosexual Panic" (Chap. IX) is a description of how the uncontrollable perverted segmental cravings (sexual) struggle with the socialized affective cravings. Three types of chronic pernicious dissociations are then described: those with eccentric paranoid (paranoid dementia praecox, Chap. XI); those with catatonic adaptations or repressions (catatonic dementia praecox, Chap. XII), who submit to the repressed sexual cravings; and finally those with hebephrenic adaptations (hebephrenic dementia praecox, Chap. XIII). This last type is characterized by an indulgence in pre-adolescent and infantile forms of play. In these chapters the sexual motif is played up to the utmost power of the author, although the

descriptions of the cases, much as they may show sexual difficulties, do not confirm in the slightest the general theory concerning the sexual etiology of these psychopathological conditions. Because of the sexual foundations of Kempf's psychopathology one does not expect to find such abnormalities treated as general paresis, but the author does include nevertheless two brief descriptions of such cases and one of arteriosclerosis in the chapter on paranoia. Since obviously there are no sexual mechanisms in these cases their inclusion (for the sake of completeness?) gives Kempf's classification the appearance of a new form of symptomatology, in that he makes the sexual factors symptoms of all psychopathic conditions.

The third part of the book, consisting of Chapter XIV, is devoted to a reconsideration of the determinants of abnormal behavior. Here is set down in summary fashion the correlation of sexual cravings with the various forms of abnormal behavior.

As the fourth part of the book, the last chapter is devoted to a brief discussion of psychotherapeutic principles. The psychoanalytic method is naturally recommended as the most valuable of all and in no uncertain terms.

The writer is not of those who accept the convention that the business of a reviewer is to take liberties with another man's work. It is for this reason that he wishes to be understood not as primarily interested in pointing out the shortcomings of this particular book, but rather as using this work as a touchstone to indicate what in his opinion needs yet to be done in the field of psychopathology. Students of human behavior are sorely in need of the comparative data which the psychopathologists can furnish. But such data must be an unprejudiced insight into human nature as Kempf declares, and not a partisan conviction that there is a sexual basis for all human behavior, as Kempf's writings imply. That Kempf does believe that all human activities are sexual responses or the manifestations of a sexual urge is evidenced by his statements that a scientist's researches, an artist's paintings and a housekeeper's choice and arrangement of furniture are all satisfactions of autonomic-affective cravings. The evidence of the synonymy of affective and sexual cravings for Kempf is found in his fantastic art interpretations, which add a touch of airiness if not levity to the volume.

How short Kempf falls from an unprejudiced insight into abnormal reactions is illustrated in his remarks upon delusions. He denies that the explanation attributed to Southard and Franz, that a pleural adhesion found upon autopsy is sufficient to account for the delusion of a pistol wound in the chest, because the explanation in his opinion only accounts for the localization, but not why a gun wound rather than a knife wound or pleurisy is specified. Observe

now that Kempf is not interested in such facts as the person's familiarity or unfamiliarity with the existence of such a condition as pleurisy, or in the fact that in America the pistol is the conventional means of inflicting wounds. No, Kempf must find the delusional specification of a pistol shot in the ungratified affective cravings.

As a matter of fact, were we to admit that all of Kempf's cases actually involve sexual mechanisms and even if we further admit that there are other types of sexual mechanisms, we still could not agree in the least that paranoia, dementia praecox or the psychoneuroses, all are exclusively due to sexual mechanisms. It is no doubt true that we do not generally recognize how large a part sexual reactions play in our normal and abnormal behavior, but even so we can no more hope to build a psychopathology out of sexual behavior than we can build a house out of a single sort of material. With his insistence upon the sexual craving as a *sine qua non* of pathologic behavior Kempf makes definite entities of the classes of behavior which he discusses. This fact absolutely excludes the psychopathologist from making a specific individual study of each psychopathic person. Kempf's suggestions of the need to study psychopaths individually can refer only to the general psychoanalytic procedure of discovering what specific sexual mechanism is involved in any given case.

In general, most psychopathologists are far from adequately understanding the nature of a behavior mechanism. This fact is clearly indicated in their attempt to make human behavior into an operation of primarily physiological activities. Thus Kempf is tremendously fond of repeating that man is nothing but a somewhat evolved ape. From Kempf's position two distinct steps are necessary before behavior mechanisms can be understood and manipulated. In the first place, we must get away from the idea that a behavior mechanism is the exclusive operation of a neural apparatus. Such an idea always results in the pernicious dissociation of reactions. Even reaction systems of the simplest sort include besides the neural apparatus, both autonomic and central, also muscular and glandular mechanisms, and finally discrimination, attention and feeling factors, in fact a total adjustment. In this connection we must commend Kempf's efforts to demonstrate the importance of the autonomic nervous apparatus in reactions, a fact not sufficiently observed, although he has permitted his zeal greatly to outrun his sense of balance and factual equipment.

More important still is it to notice that a behavior mechanism includes the operation of a stimulus object or situation. Because any present action is the reciprocal operation of a response system and the stimulus in connection with which the reaction was originally acquired, no description is complete without the specification of the

stimulus involved. When the complete mechanism is considered the utter absurdity of placing any limit upon the number and variety of actions normal and abnormal is clearly manifest. While maintaining the sexual craving hypothesis Kempf can only consider stimulating circumstances as interferences with the carrying out of the segmental craving. "Man, as a descendant of the ape-man, and the ape has inherited the polymorphous sexual cravings of the ape, and the greatest problem of modern man is to establish social ideals, conventions, religions and laws which will direct these primitive affections so that they will have a constructive value for society and yet will not be destroyed by being prudishly refined." It is almost pathetic the way Kempf's psychopathology must, because of its faulty theoretical foundation, let such valuable opportunities slip by as are made available through the handling of actual persons and their behavior.

It is very interesting to observe Kempf's rationalization of his own behavior in interpreting abnormal reactions. He justifies his segmental craving theory on the basis that he is thus arriving at a fixed and definite principle of psychopathology. And so he rejects Meyer's teaching that the psychiatrist must study his patient as a unity and not merely his hallucination or the physiological function of a segment (p. 7). The unimpassioned reader will notice that if Meyer includes besides the unity of the reaction also the stimulating situation, which no doubt he does, his view must lead to or at least allow for a study of each abnormal situation as a definite concrete phenomenon. Not so with Kempf; he is constantly seeking, though he may not know it, for a universal principle of behavior. He seems to us to lack the scientific wisdom which would prevent him from being essentially a seeker after causes in the fashion of the physical scientist. This fact is emphasized by his clinging to physiological facts which, as compared to psychological activities, are static and universal. Now can any one be in doubt as to which method of handling human behavior is the more efficacious? And as to Kempf's emphasis of the sexual character of the cravings, this he defends on the ground that only sex cravings are taboo (p. 718). But here Kempf overlooks a fact which many of his own cases suggest, namely, that the sexual reactions may themselves be compensations for and results of failures of non-sexual maladjustments, rather than being themselves the mechanisms of abnormal behavior. Let the reader observe, however, that Kempf has already fortified himself against all critics. If you can not accept his psychoanalytic theories you must either be impervious to new ideas or you must yourself be suffering from some affective discomfort.

To sum up our appraisal of Kempf's book, we might say that the attempt to add the physiological factors to Freud's mentalistic theory of behavior mechanisms is a distinctly meritorious enterprise. The result of carrying out this intention would be to study any behavior as a total reaction system or systems of reaction. Unfortunately, however, Kempf's insistence upon definite physiological functions as the causes of behavior make him carry out his psychopathology in such a constricted fashion that his system can not tolerate the total complex reactions which the fortunate lapses from the strictest interpretation of the Freudian position allowed. It is no small merit of the present work to be the means of clarifying some of the needs of psychopathology, even if it does not itself represent a wholly successful programme of meeting them.

J. R. KANTOR.

INDIANA UNIVERSITY.

JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. April, 1921, *Wilhelm Wundt* (pp. 161-178): E. B. TITCHENER.—This biographical sketch deals with Wundt's influence on psychology. He is honored as the founder of psychology. *The Child Mind* (pp. 179-195): HENRY JONES MULFORD.—The child mind can be understood by finding the structure of the child brain. The study of child brains and child minds will reveal the nature of primitive minds. The development of the child mind must follow through the reflex or through motor centers. *On the Relevancy of Imagery to the Processes of Thought* (pp. 196-230): CLAIR COMSTOCK.—As the result of a series of experiments it is concluded that there is no irrelevant imagery. *An Objective Interpretation of Meanings* (pp. 231-248): J. R. KANTOR.—Meaning can easily be described in objective terms. Meaning responses are parts of reaction patterns including all types of reactions. *A Qualitative Investigation of the Effect of Mode of Presentation upon the Process of Learning* (pp. 249-283): FRANCIS J. O'BRIEN.—Learning is always interfered with if there is an attempt to eliminate the imagery. The imagery is usually in one line depending on the ideational type. The most efficient mode of presentation depends upon the particular subject. *Studies from the Psychological Laboratory of Vassar College. Voluntary Control of Likes and Dislikes; The Effects of an Attempt Voluntarily to Change the Affective Value of Colors* (pp. 284-289): MARGARET FLOY WASHBURN and SARAH LOUISE GROSE.—The experimental data showed that the suggestions had a very mild effect on the affective quality of colors. Book Reviews. Hans

Henning, *Der Geruch*: E. A. McC. GAMBLE. Book Notes: Sigmund Freud and Ernest Jones, *The International Journal of Psychoanalysis*. Sigmund Freud, *A General Introduction of Psychoanalysis*. Edward J. Kempf, *Psychopathology*. Paul Bousfield, *The Elements of Practical Psychoanalysis*. Knight Dunlap, *Mysticism, Freudianism, and Scientific Psychology*. Phyllis Blanchard, *The Adolescent Girl*. H. Silberer, *Problem Der Mystik und Ihrer Symbolik*. Wilfred Lay, *Man's Unconscious Passion*. Elida Evans, *The Problem of the Nervous Child*. W. F. Robie, *Sex and Life*. Isador Coriat, *Repressed Emotions*. Barbara Low, *Psychoanalysis, A Brief Account of the Freudian Theory*. Isador Sadger, Friedrich Hebbel, *Ein Psychoanalytischer Versuch*. Notes: *The Road to En-Dor*: E. B. T. *Journal de Psychologie*. *Archivio Italiano di Psicologia*. *Subcutaneous Sensations*: DONALD A. LAIRD. *The Institute of Psychology at Paris*.

MIND. April, 1921. *Prof. Alexander's Gifford Lectures* (pp. 129-150): C. D. BROAD.—Second and final part. *Hume's Ethical Theory and Its Critics* (pp. 151-171): F. C. SHARP.—Concluding article. *The Ethical and Aesthetic Implications of Realism* (pp. 172-184): W. P. MONTAGUE and H. H. PARKHURST.—“Modern realism is cosmocentric in its outlook rather than anthropocentric or egocentric, with regard to the Platonic world of subsistence no less than with regard to the existential world of common sense and science. It would deny to the individual the pseudo-creativity attributed to him by the philosophy of idealism and pragmatism. . . . But in depriving the individual of these illusory powers . . . realism gives back to him the increased responsibility of membership in the independent and self-existent order of nature.” *Discussions. The Meaning of "Meaning"*: F. C. S. SCHILLER. *The Basis of Bosanquet's Logic*: B. BOSANQUET. *Do We Know Other Minds Mediateley or Immediately?*: N. A. DUDDINGTON. *Critical Notices*. W. H. R. Rivers, *Instinct and the Unconscious*: J. W. SCOTT. N. R. Campbell, *Physics: The Elements*: A. D. RITCHIE. A. Levi, *Sulle Interpretazioni Immanentistiche della Filosofia di Platone*, and *Il Concetto del Tempo nei suoi Rapporti coi Problemi del Divenire e dell' Essere nella Filosofia di Platone*: A. E. TAYLOR. *Proceedings of the Aristotelian Society, 1919-1920*: H. BARKER. *New Books*. The following books are reviewed: J. Royce, *Lectures on Modern Idealism*. R. Mueller Freienfels, *Das Denken und die Phantasie*. C. Read, *The Origin of Man and of his Superstitions*. H. Wildon Carr, *The General Principle of Relativity in its Philosophical and Historical Aspect*: Ernst Casirer, *Zur Einstein'schen Relativitaetstheorie*. A. Carlini, *La*

Filosofia di Giovanni Locke. E. J. Urwick, *The Message of Plato.* W. B. Pillsbury, *The Psychology of Nationality and Internationalism.* G. T. Ladd, *Knowledge, Life, and Reality.* Université de Louvain, *Annales de l'Institut Supérieur de Philosophie, Tome IV.* J. J. Findlay, *An Introduction to Sociology for Social Workers and General Readers.* W. Macpherson, *The Psychology of Persuasion.* A. Guzzo, *I Primi Scritti di Kant.* E. Boirac, *The Psychology of the Future.* René Kremer, *Le Néo-Réalisme Américain.* J. A. Leighton, *The Field of Philosophy.* J. E. Turner, *An Examination of William James's Philosophy.* M. Schlick, *Space and Time in Contemporary Physics.* H. K. Schjelderup, *Hauptlinien der Entwicklung der Philosophie von Mitte des 19 Jahrh. bis zur Gegenwart.* G. Dwelshauvers, *La Psychologie Française Contemporaine.* M. Culpin, *Spiritualism and the New Psychology.*

Balfour, Arthur James. *A Defence of Philosophic Doubt: Being an Essay on the Foundations of Belief.* A new edition. London: Hodder and Stoughton. New York: George H. Doran Co. 1921. Pp. x + 355. \$5.

Briggs, Isaac G. *Epilepsy, Hysteria and Neurasthenia: Their Causes, Symptoms and Treatment.* London: Methuen & Co. 1921. Pp. x + 141. 5/-.

Ross, W. D. (Editor). *The Works of Aristotle, translated into English.* Vol. X. *Politica*, by Benjamin Jowett; *Oeconomica*, by E. S. Forster; *Atheniensium Respublica*, by Sir Frederic G. Kenyon. Oxford: Clarendon Press. 1921.

Woodworth, Robert S. *Psychology: A Study of Mental Life.* New York: Henry Holt & Co. 1921. Pp. x + 580.

NOTES AND NEWS

To the Editors of the JOURNAL OF PHILOSOPHY:

In an article by Wm. E. Ritter, "The Need of a New English Word to Express Relation in Living Nature," Part I, this JOURNAL, 1921, p. 451, we read: "Now the word intergration has grown, as one readily sees, from another root than that from which differentiation takes its origin. The Latin *gradior*, upon which integration is founded. . . ." The derivation will probably be novel to most readers. As I am really interested, may I ask Mr. Ritter for the evidence in support of his opinion?

WILMON HENRY SHELDON.

ANNOUNCEMENT OF THE ANNUAL MEETING OF THE EASTERN DIVISION OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

The annual meeting of the Association will be held on Wednesday, Thursday, and Friday, December 28, 29, and 30, at Vassar College, Poughkeepsie, N. Y. The meeting will open with an informal smoker on Wednesday evening. On Thursday morning and afternoon and Friday morning the sessions will be devoted to the reading and discussion of papers. The annual dinner, followed by the address of the President, will be held on Thursday evening. If there is to be a session on Friday afternoon, this fact will be announced later.

The Executive Committee, which was empowered by the Association to make up the program, has decided to hold no pre-arranged discussion, but to devote the morning and afternoon sessions to the reading and discussion of papers furnished by members. Members are urged to send to the Secretary, not later than November 1, the titles of papers which they wish to read, together with a brief abstract of their contents. From the papers so offered, which should be limited to twenty minutes in reading, the Executive Committee will select such as shall make up a suitable program.

Pleasant rooms in the Main Building of the College will be placed at the disposal of members at a moderate price, probably \$1.25 per night. Any one wishing to reserve a room may do so by writing Mr. Durant Drake. Meals will be served in the Main Building, probably at the following prices: breakfast and luncheon \$.75 each, dinner, excepting the annual dinner, \$1.00. In view of the fact that lodging and meals may be had under the same roof, where also lounging and conference rooms will be available, the prospect for informal discussion and acquaintance is unusually promising. Rooms may also be obtained at the Wagner Inn, near the College, or at the Nelson House, or the Windsor Hotel, in Poughkeepsie.

Membership blanks will be supplied by the Secretary on request.

As announced in the May 26th issue of the *JOURNAL OF PHILOSOPHY* an effort was made by the Committees of the Eastern and Western Divisions to arrange for a joint meeting this summer. but, owing to circumstances there referred to, it was decided to postpone such a meeting until a later date.

A. H. JONES,
Secretary.

BROWN UNIVERSITY
PROVIDENCE, R. I.

THE JOURNAL OF PHILOSOPHY

IS THE CONSERVATION OF ENERGY PROVED OF THE HUMAN BODY?

THE philosopher, learning nature's laws at second hand from the scientist, labors under a disadvantage. He is accustomed to make sweeping statements; his discipline approves nothing short of universal judgments such as "consciousness is coordinated behavior" "all events are caused," etc. Accordingly when he finds, or thinks that he finds, in certain of the sciences some very widely attested law, or some all but universal habit of mind or of method, he leaps to an absolute principle and attributes to the law, the habit, or the method, an authority brooking no exceptions. He forgets that in the history of science results apparently final have been superseded. Chemical atoms have been analyzed; gravitation may become a residual electrical phenomenon; the ideal of mechanical explanation by impact and recoil, which received from the kinetic theory of gases an appearance of well-nigh universal truth and so long dominated the scientific imagination, now admits a rival if not a conqueror in the electrical theory of matter. We are no longer invited to view the world as a vast, intricate pattern of billiard-balls, but rather as a collection of charged corpuscles, streaming, oscillating, or grouped in systems. And the uniform time and space which Kant so confidently assumed may have to be given up, at the challenge of the doctrine of relativity. It is also well to remember that Darwin's theory of the origin of species has never met the demands of the palæontologists, who feel compelled to postulate an orthogenesis which the biologist has not been able to explain. In fact, the argument for the evolution of species, however strong it may be, proceeds by circumstantial evidence¹ and thereby lacks the demonstrative force of an experiment in physics, or a mathematical calculation. Yet these considerations have not prevented the pragmatist from building a philosophy upon the Darwinian scheme, or the mechanist from framing another upon the billiard-ball ideal, or either of them from assuming as a final truth that every event has a cause and that the physical energy of the universe remains constant. In particular, the latter assertion

¹ Cf. Morgan, *A Critique of the Theory of Evolution*, p. 9, p. 14 ff.

has been used by philosophers as a ground for denying the efficacy of mind, *viz.*, its initiation of change in the bodily processes of man. Some twenty years ago Münsterberg was wont to anathematize the interactionist as one who doubted that surest result of science, the conservation of energy. With an instant generalization from the sciences of the inorganic, and in the true Prussian spirit of system at any cost, he extended the application of this law to the whole visible universe, living and non-living alike. And the majority of philosophers and of psychologists—so far as the latter are willing to study the interesting problem of the relation between mind and body—have followed his example. Few are willing to lend an ear to the suggestions of animism or vitalism; few take the trouble to inquire how far the doctrine of conservation has been shown to hold of life or mind. Nor is the fault all on one side. If Münsterberg and the mechanists, imbued with fear of being considered unscientific, gave to a scientific law more than it ever claimed, a vitalist like M. Bergson roundly declares that that law has never been proved, and does *not* hold, of life and mind.² The French professor, whose statement was published in English in 1920, took no notice of careful experiments on the subject printed in 1903, which we shall presently consider and which seem to contradict his assertion. Even McDougall, who mentions³ a brief report of these experiments without examination of their argument, summarily insists that the law can never be proved to hold of processes so delicate and complex as those of the nervous system: "The few experiments which go to show that the energy given out by an organism is equal in amount to the energy taken in, are far too few and too rough to rule out the possibility that psychical effort may involve increment of energy to the organism; for increments far too small to be detected might effect very important changes in the course of the organic processes."⁴ The original record of the experiments in question Professor McDougall does not mention, and without analysis of them to see just what they do prove such general denials and affirmations are of little value.

The law of conservation of energy, so far as proved, is an empirical induction. In inorganic nature this indication seems to leave no room for reasonable doubt. The energy of closed systems of many sorts has been measured, with the utmost minuteness, at the beginning and end of some process and has been found constant within the limits of error in observation. It is no *a priori* matter; the measurements might have shown increase or diminu-

² *Mind-Energy*, pp. 43-45.

³ *Body and Mind*, p. 93.

⁴ *Op. cit.*, p. 220.

tion. Now life is *prima facie* different from the inorganic. It may not really be different in kind, but it looks so; and this renders the extension of the law problematic. However much a philosopher or biologist may attempt with the broom of the inorganic law to sweep the universe clean of mental energy and of other animistic "superstitions," the simple fact is that we do not know, without experiment, whether or not mind contributes energy to the organism. And it is of some interest to find out.

To be sure, there are systematists who believe the issue to have been exploded—pragmatists, idealists, behaviorists, *etc.* Differing on many points, they agree that the dualism of mind and body is an opposition of unreal abstractions, and therefore there is no question of the relation between them. It would be like asking whether the color of an orange affects its shape. Perhaps the illustration is an unhappy one, for just that can be asked and answered. It has been proved that light is a measurable energy. But it is easy to see that no such epistemological analysis of experience in general can settle problems of real interest; all that they do is to recast our phraseology. We are now to ask whether the law that holds of the abstractions called inorganic processes holds also of other abstractions called living processes, or between these two abstractions, *etc.* Again, the question might be stated thus: does the coordination of responses in living things have a measurable effect on the particular responses, and conversely? Or it might be put in quite materialistic fashion: does the energy taken into the living organism of man remain constant in amount during redistribution in the organism and return to the outer world?

Upon the question of fact we find a series of experiments of which most philosophers and even psychologists seem unaware. McDougall, as was said above, refers to these, but only to a very brief statement of their result in the Reports of the British Association for 1904. He has not given his readers an opportunity to estimate the validity of the arguments employed; and in virtue of the extraordinary care of the experiments and the crucial issue which they discuss, this is unfortunate. Accordingly it seems a plain duty to give some account of the investigation, in order that we may see just where the latest scientific evidence leaves us in the whole question. The experiments were performed by Drs. W. O. Atwater and F. G. Benedict and are recorded as Bulletin No. 136, U. S. Department of Agriculture, Office of Experiment Stations, under the title *Experiments on the Metabolism of Matter and Energy in the Human Body* (Washington, 1903). It may be that there are later experi-

ments; the author speaks of their desirability indeed; but I find no record of them in later Bulletins or elsewhere.

In an earlier research, conducted by Atwater and Rosa (same series, Bulletin 63, 1899, p. 11) the experimenters had said: "The views of specialists as to whether the law of the conservation of energy actually applies in the living organism are somewhat conflicting. So far as the writers can judge, the larger number of chemists, physicists, and physiologists who have at all carefully considered the subject assume that the law does obtain; basing that supposition on the *a priori* ground that there is every reason to believe that it must hold in the organic world, as it has already been demonstrated to hold in the inorganic world. Not a few regard the experiments already made, notably those of Rubner just referred to, as implying very strongly, even if they do not strictly demonstrate, the application of the law in the animal body. Others, however, question this demonstration, and there are some physiologists who, knowing from long experience the difficulties inherent in this kind of experimenting, the many sources of uncertainty and error, and the great amount of labor which is needed for reliable results, frankly avow their belief in the impracticability of any satisfactory proof that the law of the conservation of energy holds in the living organism."

In another Bulletin of this series (No. 45) a summary of previous experiments by other scientists is given; but we confine ourselves to Bulletin 136, which is by far the most thorough work done on the problem. The object of the labors here recorded was not simply to seek confirmation of the law of energy, but also to investigate the nutritive value of certain foods; and pp. 1-193 are mainly concerned with the bearing of the results of the latter question, while pp. 193-357 take up more directly the question of conservation. Though many experiments had been performed already on that subject, the authors thus testify to the need of further work: "The investigations of Rubner in Germany and of Laulanie in France had brought results fully in accordance with the law of the conservation of energy, but their experiments were made with small animals, dogs and rabbits, and were comparatively few in number; the experimental periods were rather short; the analyses of food, drink, and excreta were not carried out in great detail, and no experiments were made in which external muscular work was involved" (p. 193).

The experiments before us were made upon five men separately, placed in a specially constructed chamber, 7.5 by 4 by 6.5 feet, which was so designed as to determine the income and outgo of air, heat, moisture, etc. to and from the subject. "The total number of ex-

periments with measurements of income and outgo of energy in the body is 51, and the time covered by them is 150 days" (p. 99). They extended from May, 1897, to May, 1902. The chamber was called the "respiration calorimeter" because it determined the income and outgo of respiration, perspiration, and their products, and registered the heat given off from the subject's body. In each experiment the subject lived in the chamber, eating and sleeping there for a few days. The series was "divided into two classes: (1) Those in which the subjects were practically at rest, *i.e.*, had no more exercise than was involved in dressing and undressing, and care of furniture, food, and excreta; and (2) those in which they were engaged in more or less severe muscular work" (p. 99). "Of the 26 rest experiments, covering 72 days, several were with special diets, and four, covering a total of 5 days, were with the subject J. C. W. fasting" (*ibid.*). "The 25 work experiments, covering a total of 78 days, were all made with special diets . . ." (*ibid.*). "The larger number of rest experiments were made with E. O. [subject], and J. C. W. was the subject of the larger number of work experiments" (*ibid.*). The latter was a college athlete (cyclist) in prime condition; the work consisted in riding a stationary bicycle connected with an ergometer. All subjects were in excellent health during the experiments. The authors suggest indeed that "important results could be obtained also in studies of nutrition in disease . . . and other conditions more or less abnormal" (p. 10), but no results were sought under such conditions.

In order to test the conservation of energy, the income of energy in each experiment must be balanced against the outgo of substance, heat and motion. The income depends on the potential energy of the food and drink. Samples of these were analyzed and from the amount of them consumed and their equivalent in calories the energy of food and drink was determined. Subtracting from this the energy of the material which passed out in faeces and urine, we have the available store of potential energy laid up in the body. Not all of this is used, however—*i.e.*, oxidized and turned into kinetic energy (heat and movement) within the body; we wish to know just how much is used, in order to see if the amount can be equated with the energy given off from the body in the shape of heat or mechanical work. This energy of substance actually oxidized the authors' term "energy of net income." It is "represented by the available energy of the nutrients of the food (*i.e.*, potential energy of total food less that of the urine and faeces) minus the potential energy of the material gained" during the experiment. That is to say, if the subject gained so much of protein and fat, the energy residing in these

is stored in the body and takes no part in the transformation of energy which the experiment is studying. The gain of the body in protein and fat is estimated from the amounts of nitrogen and carbon given off in excreta, together with the increase in weight of the subject. If on the other hand the subject loses in body-material, the bodily reserve in protein and fat is drawn upon for energy of oxidation, and the amount lost must not be subtracted from, but added to, the potential energy of the food-substance retained in the organism. Thus we obtain the "energy of the material actually oxidized in the body" which is to constitute one side of the equation. The other side, the outgo, "consists of the heat given off and the external muscular work done" (p. 195). In the rest-experiments, the slight external muscular work "would naturally be converted into heat, as, for instance, in the impact of the foot upon the floor in stepping. . . . Roughly speaking, we may say that all the potential energy made kinetic in the body by the oxidation of food and body material left the body as heat, and that this made the net outgo of energy" (p. 194). And we must add that "so delicate were the measurements of temperature that . . . if the man inside [the calorimeter] rises to move about, the increase in the heat given off from his body with this muscular work shows itself in a rise of temperature which may be immediately detected" (pp. 11-12).

"In the work experiments a certain amount of energy is given off as external muscular work, and this added to the heat given off from the body makes the net outgo" (p. 194). It must also be mentioned that the quality and composition of air inhaled and exhaled, as well as of perspiration, were taken into account. In fact, as one peruses the report, it appears that few if any sources of error which ingenuity could suggest were unconsidered. We have given as much of the method as seems necessary, and may let this suffice for description of the conduct of the investigation. We now turn to the results.

"If the law of the conservation of energy obtains in the living organism, the net income and the net outgo of energy should be the same. In such physiological experimenting, however, it would be hardly fair to expect the figures for the two to agree for each day of a given experiment or for each experiment as a whole. . . . There may be errors in the estimates of the amounts and heats of combustion of the materials actually oxidized. Variations due to irregularities of the physiological processes of the body are unavoidable, and may materially affect the results. But . . . these errors would tend to counterbalance one another in a series of experiments, and . . . in the average of a sufficiently large number of

experiments . . . the income and outgo would be very nearly the same" (pp. 196-197).

"Exactly this is the case in the data here reported. The variations for individual days, and even those for the individual experiments . . . are not inconsiderable, but considering the average of all the experiments the agreement is very close" (p. 197). In the 25 days of 7 rest-experiments we find extreme variations ranging from -6.5 to $+9.1$ per cent. of income in the energy given off. In the average of 14 experiments, however, as given on p. 123 (in Table 79) we find that the subject gave out per day 5135 calories, and oxidized within his body 5143 calories—a difference of less than one fifth of one per cent.

Now the question is, how do these experiments (the most careful, we may fairly say, hitherto conducted) show that the law of conservation holds throughout the field of organic process? Let us see if anything was taken for granted in the method which from an empirical point of view needs proof. First, it was assumed that the heat of combustion of a substance, already ascertained by combustion *outside* the body, will be the same when combustion occurs *within* the body. But surely, one says, this is permissible, else we can make no calculations of energy here. We grant it; we wish merely to point out that this *sort* of assumption—of a sameness of process between inorganic and organic—must not be carried beyond necessity. Just that, however, seems to be done in the second assumption we notice, *viz.*, that the potential energy actually oxidized in the body is the potential energy of the food taken in and kept, minus the stored tissue (or plus lost tissue). The assumption is equivalent to saying that the more of a given income is laid up as tissue, the less remains to be burned, and the more is burned, the less remains as potential energy of tissue. This implies that the energy of a given amount of food-substance taken in remains a definite and constant sum during its redistribution in the organism. How do we know this? Is it not assuming that the conservation of energy holds in the body? In short, are we not basing our measurement of the energy due to oxidation which is to give one side of the desired equation on the supposition that what we want to prove is true? It may be urged that there is no other way of estimating the "net energy of income." If that is so, it only means that there is no way of demonstrating the conservation of energy in the living body.

As far as the observations of fact go, we do not know but that some of the energy taken in and kept as food, and not stored as protein or fat, is not oxidized at all, but goes into some form of energy of a non-physical sort—mental energy perhaps, or what

you will. It might even be lost, or increased in amount. These suggestions may be dismissed as absurd; but all we here urge is that the present experiments make no decision about them. Their validity must be settled on other grounds than the results presented by Drs. Atwater and Benedict. Or we might suppose that some of the energy stored as protein and fat disappeared into an unknown form, or was even lost. There is no direct measurement of this stored energy; we do not know by plain observation whether it remains constant until drawn upon for oxidation. In inorganic nature, to be sure, it would be quite groundless to allege any change of amount without some knowable physical reason. But the conservation of energy has been proved of inorganic nature, and if we could argue from that to organic, there would have been no demand for experiments on animals.

There is however no need of straining our credulity on the matter. The easy alternative is to suppose that some of the income of energy is transmuted through the agency of the nervous system into certain mental states, such as sensation, perception and other recipient psychoses, and that some of this is translated back into bodily movements through the conative and active psychoses. This is the familiar hypothesis of interaction, and it is quite consistent with the experiments before us. We may not be able to define or measure the energy of mental states, but that does not make transformation impossible. And it might even be the case that on the whole as much energy went into the recipient states—sensation, *etc.*—as came out in the active states; so that the conservation of energy would still hold true. But whatever supposition we make on that head we do seem to find that the results of these very conscientious experiments do not render unlikely the transfer of energy from body to mind or vice versa; and the fulminations of Münsterberg and other “parallelists” appear to have no just warrant from science. And the transfer need not be of a very minute amount, as some interactionists have felt that it must be. It is not that the conservation is *nearly* proved; it is not proved at all—having been assumed in the measurements. Nor shall we be compelled to imagine some device by which mind may intervene and switch off a nerve-current or release a potency, without doing physical work. The experiments do not rule out mind from doing or suffering a very considerable amount of work.

But while we conclude that the conservation of energy has not been proved, or even approximately proved, of the living body, we believe the experiments have a very great and positive philosophic value. This may be brought out by an objection to our conclusion. For it might be urged that even though conservation is not proved

throughout the process of redistribution in the body, still it is proved that the quantum of energy that comes into the body and is retained, minus what is known to be stored, is equal to the quantum that comes out. This equality between beginning and end of the whole process is striking. If some of the energy given out comes *from*, say, the mind, and some of the energy taken in goes *to* that same, why is it that there is always found at the end just the amount present at the beginning? There must be some explanation of this equality, and surely the law of conservation, without recourse to a mysterious mental energy, is the natural one. Without that law, equality would hardly be so invariable. Unless, then, we can find some other reason to account for it, conservation would still be in order. To this objection we answer that such a reason can be found in the shape of a certain general law or tendency holding between organic and inorganic, as well as between various forms of life. This law can be shown on independent grounds, and has in one form or another long been recognized. It is the merit of the experiments before us to confirm it by measurements.

It is very probable that living beings would develop the habit of giving out a quantum of energy as great as that which they take in. It is, in fact, a necessity that they do so; else the store of energy in the environment, upon which they draw for subsistence, would gradually be depleted, and life must perish. Energy passes through a cycle, going from the outer world into living matter and out again; and the balance must be kept even. The energy which passes out from animals in the form of excreta goes into the soil and atmosphere, and serves to sustain the plants; the energy which the plants store in their tissues serves as the food of animals. This energy, if it diminished in amount in its passage through the cycle, would become less and less in the course of years, until finally it would not suffice for the maintenance of life. The kinetic energy given off by an animal body—heat and movement—which does not directly assume a form available for animal food, is conserved, as the law of conservation holds for all inorganic processes; and it is used by animal life when the latter obtains its food. The animal profits by energy of position, of meteorological processes, of elasticity, and other natural forces, in order to get his food; and fortunate it is for him that these are maintained at a relatively constant amount. To be sure, the amount is only relatively constant, for the heat-energy is being radiated away and lost. All the greater is the need for his returning undiminished the stock of energy which has passed through his own organism. The same reasoning holds, *mutatis mutandis*, of plant life and the bacteria. All living things must maintain the level of energy

in the material world; they would otherwise not survive. And when we consider the enormous numbers of living things, from the millions upon millions of bacteria through the nearly ubiquitous green plants and the ten phyla of animals up to man, we see how even a slight loss of energy by each individual would be magnified and would check the vital sustenance. Life itself, we infer, must early have become the kind of process that pays back what it borrows, almost to the last farthing; the least habitual failure to pay its debts, multiplied by the uncountable mass of life, would ere long be fatal. As in commerce so in life the balance must be kept. It would not matter whether the conservation of energy held in the passage through organisms; the physical energy taken in might be partly lost or transmuted into some psychical mode. Nevertheless the living being would, on pain of extinction, have to see that an equal amount of energy was restored, whether from the body or from some other reservoir or *ex nihilo*. Putting the thing in non-teleological terms, we may say that a kind of life which did not give out at least as much energy as it took in would become extinct. Natural selection, if we may use the phrase here, would weed it out.

It might be thought that though this would be true on the whole, yet individual cases might show a falling away from the law—as they do in the commercial world. But remembering that the tendency to repay, in order to be so general, must be deeply implanted in the nature of life, we find less reason for variations. Nevertheless we might well expect, in particular cases, some deviation; though it would diminish as we took averages. This is, in fact, just what we do find. The experiments showed individual departures from equality of income and outgo as great as -6.5 or $+9.1$ per cent., and we can not say that this is wholly due to errors in estimation.

But why should organisms not give out *more* energy than they take in (minus storage)? If they did so, the stock of available energy in the environment would be increased, and on the whole living matter would thereby profit. The animal and plant kingdoms would give more and more sustenance to each other; heat-energy, which is favorable to life, and other forms of energy which are used by organisms in food-gathering, would grow greater, and as a result life would thrive and multiply. But by that very fact the income of energy to organisms would be increased; for vigorous organisms take more sustenance. The balance between the two poles, life and environment, would continually tend to become even. And sooner or later a limit of increase must be reached. The available space and matter would in the end put up a bar; but long before these were exhausted other conditions would interfere. The physical properties of C, O, H, and N would not permit them to receive and pass on more

than a certain amount of energy without injury to the organism. If life were the sort of process which resulted in excess of outgo over income, it would almost certainly in the long course of its history have reached that limit, and then the balance would be speedily restored—else life would be destroyed. By this time, then, life must have acquired the habit of equilibrium between income and outgo.

Nevertheless the conditions are not quite the same as regards excess and deficit of outgo. Both tend to disappear, but excess would do so more slowly than deficit. The former does not, like the latter, work toward a decrease of food-supply; natural selection will not so soon prevent it. Restriction of excess of outgo will thus probably be a later acquired habit of life—less deep-seated, more subject to variation. And if variations from the habit occur, they are more likely to occur, evidently, in creatures possessing a highly developed nervous system. For two reasons, then, we may expect that occasionally an organism like that of man would display more energy than its income from the external world would amount to, namely (1) because the habit of giving out *no* more energy than it takes in, being more tardily acquired, would command less implicit obedience than the contrasted habit and (2) because deviations from the rule are more to be expected in highly developed and complicated nervous systems than in simpler ones. Even so, however, the exceptional output of energy would hardly take place in such automatic processes as nutrition, excretion and the like. These, which are controlled from the cerebellum, are as a rule not accompanied by consciousness. This attribute of organisms is called into play when a conflict of impulses inhibits the customary reaction of stimulus; a novelty, a response which departs from the habitual, is the occasion of it. The special sort of nervous process which goes with consciousness is therefore the most likely to be the scene of a departure from the usual balance of income and outgo. We should actually look for increased output of energy over income in cases when an idea, an ideal, a conscious effort against opposing motives or bodily inertia, seems to govern the behavior of the organism. In such instances there might well be displayed in the body and as outgo from it, an amount of energy which would very considerably exceed that of intaken food. We do not now assert that this happens; only that it is possible or likely, and that the scientific measurements of energy in the human body do nothing to remove the possibility. Such examples as James detailed in his well-known theory that men may occasionally tap higher reservoirs of energy than those customarily used, would fit the hypothesis. The many cases of cure of disease by faith, prayer, suggestion, or other mental processes would illustrate the same. What prevents the

sophisticated thinker of today from taking these cases at their face-value is the fear of being thought unscientific; whereas, if our argument is correct, science has nothing to say against them.

But in any case, interaction between conscious process and bodily process would seem to be more credible than a parallelism with its closed circle of physical energy. While of course the normal equality between income and outgo might be due to the conservation of that energy alone, it might also be due to the action of natural selection, destroying in the end a kind of life that did not by interaction keep the balance even. The facts established by the experiments before us give no ground for preferring the one explanation to the other; and accordingly the view natural to experience and common sense, the view of interaction, seems the more reasonable. The philosopher and psychologist, overawed by what they hastily assumed to be a dictum of science, seem to have renounced what science had not asked them to give up, and fled when no foe pursued.

Finally, we repeat that is not a question of finding some device by which mind may influence a nerve-current without doing work—as by a switch or a releasing of potential energy. We need not content ourselves with so feeble a prerogative; the experiments have shown no reason why mind may not do a great deal of physical work. Normally, to be sure, the amount of that work would be such as to keep the equilibrium between inflow and output of energy; but in exceptional cases mind might send forth an amount which would far exceed the volume taken in through the usual physical channels.

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INSTINCT AND CAPACITY—II

HOMO DOMESTICUS

MAN has been dignified by science with the title *Homo sapiens*; but his wisdom is the wisdom of his traditions. To the anatomist the cerebrum looms large; to the anthropologist—institutions.

History “records the transfer of power from one mystically sanctified source of authority to another, from a church to a book, from a book to a state, or to an intangible public opinion. But with unflinching tenacity every society from the simplest to the most complex has adhered to the principle that the one unpardonable sin consists in setting up one’s private judgment against the recognized tribal authority, in perpetrating an infraction of tribal taboos.”¹ If the name of the species were based on its behavior man would be called *Homo domesticus*.

¹ Lowie, *Primitive Society*, p. 440.

The significant fact of human anatomy, indeed, is not the brain but the unique generalization of the whole structure—a generalization of which the highly developed brain is but one element. To be sure, this has been overlooked almost completely by scientists who are not interested in behavior, even though they have recognized the human species as unspecialized. The British anatomist, Wood Jones, however, has made it abundantly evident that structural generalization is the reverse side of functional generalization. Functionally, man is conspicuously free of instinct compulsions to particular set acts. Biological scientists generally class his behavior as non-instinctive. And according to Wood Jones the similarly conspicuous absence of highly specialized structures from the human make-up is the anatomical statement of the same fact of human adaptability and docility. He has even hazarded a generalization: the “law of successful minimal adaptive specialization.” This means that “a complete, early, and all-absorbing specialization is almost synonymous with specific senility.” “It is the distinction of the human stock that it never became the slave of its arboreal environment for it became adapted to tree life in a strictly tempered manner, and it specialized to the successful minimum degree.”²

Homo sapiens is a creature whose sense impressions are not confined to his nose; whose forelegs and paws are specialized neither to clinging nor swimming nor digging nor flying—nor even to walking. Similarly on the functional side he is equally responsive to an incalculable variety of stimuli instead of reacting to a particular and narrow range of perceptions with typical and invariable behavior. He has cut loose from all dietary dogmas,³ and has avoided all fatal facilities.⁴ He is an arboreal post-graduate, with a sound phylogenetic education.

And the process has left him correspondingly docile. This is the important fact for students of behavior. Obviously man like

² *Arboreal Man*, pp. 212 and 214. Of course the author does not claim any particular originality for this theory in its general form. It has been quite variously held. Watson, for instance, makes the remark, “Instinct and capacity to form habits, while related functions, are present in any animal in inverse ratio.” *Psychology from the Standpoint of a Behaviorist*, p. 254.

³ “The educational possibilities that the arboreal habit offers to a sloth are extremely limited; even the range of its diet becomes restricted, and an animal that has become an arboreal clinger is an animal entering upon specific senility.” *Arboreal Man*, p. 215.

⁴ Their fore-limbs (flying mammals) have become purely specialized as wings; they are no longer useful for grasping, for touch, for examination and for all the other functions which we have seen are so essential to the final education of the neopallium which makes for real evolutionary progress. *Ibid.*, p. 220.

any other creature is a compound of an indefinite number of special traits and characters, each one important enough in its own field. But around and about and above them all is the net effect of them all together: unique freedom from special (and therefore limiting) propensities—in a word, his docility.

Man has lived in every climate; he has eaten everything; he has gone off by himself in splendid isolation, and he has packed himself layer above layer into the congeries of city life; he has got along with sticks and stones, and he has altered the whole face of the earth. The attempt to enumerate his activities is hopeless; but the matter can be got at in another way.

No records have ever revealed a time when the different races and classes of men have not looked on each other's ways of life with incomprehension, wonder and disgust. To others, the life of the serf is one of squalid and malodorous futility. At the other extreme in the most rarefied atmosphere of social elevation men are encompassed by an elegant and decorative, though scarcely less pointless and sordid, futility. Between the two there is the life of assiduous calculation of the means to the end of further calculation of the means. So, in each case, it seems to the others. Civilizations stand at the cross-roads and scrutinize each other, and ask themselves that stock question of all vernaculars: "How do they do it?"

And the only adequate answer is the biological fact that man is the meekest of the domestic animals. His congenital susceptibility to domestication is stronger than that of any other barnyard creature. It is so strong that of all the species known to anatomy this one alone has never been captured in the wild state. However far down you dig he always turns up with a fancy funereal pose and a barrow-full of flints. A wild-man is a contradiction in terms.

At once a caution must be sounded against the notion that this means that man is the only species that carries on complex community activities. Of course many species, particularly insects, do that. But there is no scrap of evidence to indicate that the individuals of those species are house-broken in infancy to the systems of domestication which are to be theirs. That process—the process of domestication—is the unique distinction of man. Not only has the generalization of the human structure left man peculiarly adaptable; it has left him almost wholly without the means of carrying on except by the development of behavior complexes which he receives through domestication. He is like a person who has developed a high degree of tolerance to a poison, say cocaine: not only can

he take it in stupendous quantities; but he can not live without it. In his economy there are two indispensable elements—himself, and the drug.

Similarly, in human behavior there are two main elements: the species and its cultures. A professor, perhaps, should call this the law of tolerance to domestication. To speak of the "normal" behavior of man, as one would speak of the normal behavior of even orang-outangs, is ridiculous. The dictionary compresses the characteristic activity of the orang into four lines; what, could it say, are the normal acts of man? There is a normal structure, characteristic of the species, unaffected to any great degree by domestication. Normal behavior must needs be just what normal structure is—a species uniformity. But the only normal behavior of *Homo sapiens* is domestication; beyond that every act depends on the culture. Human behavior is the behavior of institutions.

In one further respect, perhaps, the behavior of man is as uniform and invariable and generally characteristic of a species as his culture-tolerance, to wit, his contempt and loathing for other systems of domestication than his own. Possibly this is the same law of tolerance to domestication stated in negatives as the law of alter-cultural intolerance.

Everyone recognizes as a matter of course that a scheme of behavior is necessarily a scheme of rigid taboo. The traditions of others are necessarily wrong. Intolerance is the essence of every strong tradition. And this means not mere emotional disaffection, but physiological intolerance—incapacity to assimilate the foreign material without great pain and the risk of total collapse. In infancy the vocal organs of every structurally normal human child can compass the whole range of vowels and consonants of all the jargons of Babel. An infant forms sounds which have become totally impossible for his parents through long habituation to the narrow range of modulations of one articulate language. As its palate is gradually trained to the intonations of its tradition it not only finds those sounds becoming increasingly "natural," but all others increasingly awkward, and in the end impossible. The same is true of those things which have the most awful significance—the highest reaches of religion and morality. Every religion has its heathen, and every rule of life its unrighteous. Civilization is the determination of behavior by prescription and taboo.

And the taboo pertains not so much to the exercise of judgment as to the existence of infidelism. Civilization is not primarily a conspiracy against intelligence; in each manifestation it is a necessarily exclusive mode of behavior. "The folkways are the 'right' ways

to satisfy all interests, because they are traditional, and exist in fact. . . . The right way is the way which the ancestors used and which has been handed down. The tradition is its own warrant. . . . When we come to the folkways we are at the end of our analysis." The child is meek; but he is also errant. The folkways make a man of him.

It is only to summarize these obvious and, I should think, universally admitted facts that I have used the somewhat academic generalization: the law of tolerance to domestication and its corollary of alter-cultural intolerance. The words are unimportant, but it seems quite unescapable (1) that the human species is not wild; (2) that in each of its many domestic states its behavior is guided by a system of traditions which have been assumed as easily as clothes by an essentially unspecialized creature with a natural aptitude for learning; (3) that the domesticating process does away with the immature tolerance of its subjects, leaving them cultur-bound just as other species are structure-bound and instinct-bound. Such a description seems to be demanded by the facts; it neither falls short of the facts nor exceeds them.

So much for the facts. There remains the problem of justifying invidious distinctions. After all a scientific theory must not only state the truth but accomplish some laudable practical purpose. And the most laudable purpose, in the case of the sciences that deal with human affairs, is generally taken to be the preservation of those things which seem sacred and profitable to the preservers. Consequently a great deal of the best anthropological scholarship has found its *sine qua non* in the special incapacities of sex and class and race which recommend themselves to the prejudices of well-domesticated Europeans. Women lack the faculty of ratiocination; the lower orders that of enterprise. Hindus have an incapacity for work; Chinese for change; Africans for anything "above the level of a child"; and the dolicho-blond has his famous incapacity for war and predation which has set him at the forefront of a practical world with the white man's burden on his shoulders. The intention of such hypotheses is to account not only for the fact of cultural differentiation, but for the mating of each people with its culture—and for the superiority of the superior.

At first glance it seems remarkably simple and obvious to equate cultural and phylogenetic peculiarities. But the argument is handicapped by the notorious failure of the slight anatomical differences between the races to sustain any theory of behavior-limitation. However, the facts of anatomy are usually circumvented by the following device.

1. Assume that the special capacities (incapacities) of race strains are deducible from their behavior in their native cultural habitats.

2. Observe that there are wide differences between the capacities (behavior) of the different strains: this proves that the races differ in hereditary "capacity for civilization."

3. Observe the distribution over the earth of the peoples whose various capacities have just been demonstrated: it will be found that low capacity is associated with low culture and high capacity with high culture.

4. It follows that racial incapacities are the cause of culture-limitations, each culture representing the full development of its race.⁵

In the remarkably restrained chapter on race in his *Anthropology* Marett writes: "Mere prejudices, bad as they are, are hardly worse guides to action than premature exploitations of science." He might have added that to *Petitio Principii* all things are possible.

The argument for special limitations seems of no particular value, however, not so much on account of its luxuriance of logic, as because it is not needed. The principle of economy of hypothesis stands against it. The intolerance of Africans and Asiatics to European civilization and the reverse intolerance of Europeans to "heathendom" are all perfectly explicable on the basis of the acknowledged facts and the obvious inference of alter-cultural intolerance. Furthermore—and of far greater weight—the culture theory of behavior is an incomparably more fertile source of principles affecting the whole field of behavior. If it can once be recognized clearly that the content of behavior is a culture content and not an instinct content, it will be possible to make rapid progress in the development of such categories as may be necessary for the analysis of the genesis and evolution of cultural behavior-systems.

Indeed, beginnings already exist. For instance, there is the cross-fertilization theory of cultural evolution. "Cultures develop mainly through the borrowings due to chance contact. Our own civilization is even more largely than the rest a complex of borrowed traits."⁶ It may seem a bit paradoxical at first to say that

⁵ No reader will need a citation for this argument. Perhaps its most recent employment is in McDougall's *Is America Safe for Democracy?*

⁶ Lowie: *Primitive Society*, p. 441. If I had written this I would have said: ". . . even more obviously than the rest. . . ." In *Imperial Germany and the Industrial Revolution* Veblen has made a detailed case study of this phenomenon. See especially Chapter II, "On the Merits of Borrowing."

cultures develop by taking in each other's washing; but call it by a biological name and you have a strict analogy to the process by which a variety of individuals are produced through a hybridized heredity. It is not unreasonable to expect from this principle the growth of a science of culture-genetics.

And lest the theory of cultures become hyper-individualized, the social multiverse idea will need to be dispelled—or psycho-analyzed away. On the basis of Cooley's truism that "a separate individual is an abstraction unknown to experience,"⁷ which seems commonplace until you study it a bit, some hypotheses may be built of the identity between the linking of traditions in a culture and the development of behavior-complexes in an individual. After all, a "complex" is only a system of cultural influences provoked into action by a culturally appropriate social situation. The analysis of character is the analysis of culture-complexes.

It may even appear in the end that *Homo sapiens* meant *Homo domesticus*.

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THE GROUP SPIRIT AND THE FEAR OF THE DEAD

THOUGHT, like all history, frequently appears to repeat itself. Sir Thomas Browne began his essay on "Dreams" by writing: "The day supplieth us with truths, the night with pictures and falsehoods, which uncomfortably divide the natural account of our beings"; Owen Feltham, a contemporary of Browne's, began his essay on "Dreams" by writing: "Dreams are very notable means of discovering our own inclinations" and he added that the naked and natural thoughts of our minds visit us during sleep. Feltham's view has returned, with a vigorous swing, into favor. A dominant estimate of the dream supposes the "pictures and falsehoods" to be disguised versions of "our own inclinations" and the "natural thoughts of our souls" to appear in dreaming, though their nakedness may be covered by a cloak of symbolism. The modern Freudian interpretation of dreaming is not, of course, a mere repetition of Feltham: it is elaboration of a hint. Thought often seems to return upon itself, to veer backwards, when it is accepting a hint from the past. One aspect of the history of thought consists in the elaboration, during one epoch, of ideas which had been realized before but left incompletely developed as hints for future generations.

The shepherd Gyges discovered a magic ring which, when

⁷ *Human Nature and the Social Order*, p. 1.

turned on his finger, made him invisible. His invisibility gave him opportunity to act wickedly and he made full use of it. In this myth Plato expressed the influence of the group, of society, upon the individual; the turning of the ring released Gyges from this influence and the shepherd's changed conduct revealed how great the pressure upon him of his fellows' opinion and coercion had been. This influence of the social group upon its members has always been realized, but it has never been so systematically explored as it is being explored today. The moment has come for the elaboration of the hint dropped by Plato in the story of Gyges.

Every new principle for resolving problems, whether new absolutely or freshly endowed with power, is a temptation to depend explanation too much upon it. It is true, for example, or probably true, that the dog's place in human society is determined by the social habits of his ancestors and the cat's place by the unsocial habits of hers. The dog is a member of the family; the cat is simply a lodger. Trotter is perhaps also right when he refers the dog's preliminary growl on sighting another dog to an enduring instinct, derived from the days when he hunted with the pack, to notify the herd. He probably rightly connects the dog's gluttony with the scrambles among his ancestors when the pack had brought down its quarry and the cat's dainty feeding with the private enjoyment by its ancestors of private kills. He is less convincing in convicting the cat of greater indifference to cold because she is less social than the dog. It seems to be straining the principle of group influence on its members to suppose that social animals necessarily feel cold more keenly than solitary animals because gregarious huddling favors warmth and associates coldness with separation from the herd. This comparatively trivial instance is a sample of the troubles which the modern recognition of herd influence brings, and will bring, in its train. Does Trotter rightly claim for dislike of novelty in action or thought an origin in the uniformity imposed by the herd upon its members? Human nature is constantly torn between eagerness for novelty and dislike of change. There is no surer method of irritating a man than by interrupting his habits—if it only be a new railway regulation that he must always show his "pass" at the barrier. There is no surer method of pleasing him than to show him something "new." It is tempting, very tempting, to explain this opposition between tendencies by separate originations in two sources. As society insists on its way and its single members also make their own private plans, so the individual is pressed into dislike of novelty by herd insistence on conformity and solicited by novelty through his private inclinations. This particular use of the social factor for explaining a curious feature of human life illustrates one kind of per-

plexity which is thrust upon us by modern insistence on the influence of the social group. It seems to us that a solitary, a Robinson Crusoe from birth, would dislike change and love novelty; it also seems logically simple to place delight in the new internally within the individual mind and dislike of change externally in pressure from the herd. Our previous wedding to an inveterate habit of searching through the innate constitution of the individual mind makes it difficult to appreciate the full explanatory scope of group influence. If we realize our duty to break with this inveterate habit too keenly we may break away too violently and replace one extreme by another. We must accustom ourselves to the strangeness in explanation through the group, but we must not be seduced into aiming at this strangeness and neglecting the individual constitution. There is a close connection, mental and physical, between every man and his social group and this connection explains many things. Can we, by recognizing this connection, obtain an explanation of the primitive attitude towards the dead?

Geikie refers to two neolithic burials of new-born infants with their mothers. Each mother held her child in her right arm and folded her left arm across her breast. Attention to the dead is a dividing line between man and brute, but the motives of this attention, in the early history of humanity, rouse a passing regret that men ever forsook the animal habit of disregarding death. Tenderness is suggested by the burials of infants with their mothers, but some modern practices among uncivilized peoples contain a sinister hint that tenderness was not the motive. The Eskimo, according to Captain Peary, often strangle an unweaned child when its mother dies and bury it with her. Among the Indians of Paraguayan Chaco the Rev. W. Burbroke Grubb discovered the still more heartless practice of burying the child *alive* with its mother. The motive for these burials is *fear*—fear that the mother will return to claim her child. This fear of the dead runs through primitive death ritual. Fear of the dead, according to Scott Elliot, can not be demonstrated till the late neolithic period, but there is evidence in prehistoric interments that the fear of the dead did enter, often with grim consequences for the dying man, into human life. Wundt connects "crouched burials" with the demoniacal fierceness attributed to the dead. The Basuto treatment of the dying man is a grim commentary on these primitive crouched burials. The patient is carried before he is dead to an enclosure outside the hut and trussed, by two women who are his blood relations, with his hands and knees against his chin. Trussed or crouched burials seem to be one of the many methods of preventing the dead man from haunting the survivors. Many other burial rites have the same significance.

Deference to the dead subsequently appears in funeral rites, tender affection finally conquers the dread of demons, but, though Elliot Smith suggests that an effort after reanimation rather than an effort after effective banishment underlies the primitive treatment of the dead and dying, there seems little doubt that Wundt is right in assuming a primitive dread of the demoniacal habits and powers of the dead. Freud, agreeing with Wundt, believes that demons were originally projections of hostile feelings in survivors towards the dead. It is, at any rate, certain that fear of, and hostility to, the dead pervaded, and still pervades, the burial rites of primitive peoples and frequently dominates over all other motives.

A hint at one origin of the fear of the dead is given by conjoining Scott Elliot's remark with another by H. G. Wells. According to the former there is no evident fear of the dead till the late neolithic period; according to the latter the tribal mind appeared and sacrifice of personal impulse was forced upon man in neolithic times. Was the dead man originally hostile and therefore feared because death threw him outside the group? McDougall emphasizes the dominance of primitive societies by the group spirit: circumstances confine the savage to his group; he thinks of any individual as a member of such-and-such a group; responsibility for crime falls on the criminal's group; totems, ornaments, secret societies, ceremonies, initiations confirm and define connections with a group. Hostility to the outsider is a natural consequence of such an intense group spirit and is known to be, and to have been, rife in primitive communities. If death, in effect, by cutting off from participation in group life, converts the dead man into an outsider, it might direct upon him the fear and hostility which primitive groups naturally extend to those outside themselves.

Primitive fear of the dead had probably a complex origin, but it may be worth suggesting, for subsequent confirmation or disproof, that one of its motives was expulsion from the group by the dread event of death. The bitterest enmities separate those who once were friends: he who was, when alive, a comrade of the group, might, when dead and expelled, be intensely feared and bitterly hated.

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REVIEWS AND ABSTRACTS OF LITERATURE

Human Traits and their Social Significance. IRWIN EDMAN.
Boston: Houghton Mifflin Company. 1920. Pp. xi+467.

This is a book designed to give to freshmen a conscious perspective of the multifarious nature of man. It sketches the activities

and assembles the interests of a generic citizen of the century, first analyzing the operative modes of human conduct and then going forward to comprehensive depictions of their ends as exemplified in the great pursuits of art, science, religion, and the practical life of reason. The point of view, as indicated by title and division, is that of "social psychology," and it is as a social psychologist rather than as a philosopher that Dr. Edman frames his subject-matter.

It is done very engagingly, and for the good of the freshman, and indeed of the many others who will no doubt be drawn to these pages. The style is clear and unaffected; the paragraphs are adorned with numerous telling quotations and with references to authors every freshman should find out; the topics are handled in due order and with balanced weight: as a piece of book-making, in its kind, the work is capital. Furthermore, the thinking that is called for is surely salubrious, even for freshmen, provided it be taken as the author intends it to be as an introduction to problems and attitudes swaying our contemporary mind. Beyond question we are living into a period of agitated concern about the conduct of men in societies; the impelling currents of modern thought are in the direction of political and social philosophizing; we may expect a generation or more of social self-searching, human nature, generative and decadent, replacing the panorama of things cosmic in the theatre of speculation. There never has been a more vivid demand for just such books as *Human Traits*, and its author is to be felicitated both upon the general excellence of his work and the season which it strikes.

Having given this meed of praise, which is certainly due to so clean-made a book, one may be permitted, I trust, a few temperamental qualifications. Of which the first is a doubt about the kind of thing. This social psychology one would expect to be a study of the conduct of men collectively; instead, it develops into an account of whatever men have in common, and thus it purports to give a true and comprehensive account of human nature. Your freshman will surely gain the impression that here he is anatomizing to its roots the whole constitution of man and the import of all his works. He will, as a matter of fact, gain needed insights into many springs of conduct; he will understand himself and his fellows better, for the thought which will be required of him; and in particular he will have a sane and reasonable introduction to numerous currents of ideas that make up the moil of present-day social introspection. But he will get it all aloof from the subject, which is life in all its concrete complexity, and he will retain it with an assurance that will carry him through many a day of blind mis-

understanding of things human. Your social psychologist studies the *Genus Homo* as your biologist does an ant-hill, with vast concern about descriptive apparatus and faint realization of the fact that the noumenal essence of its nature is forever shut off from his understanding. The conceit of knowing men is easy to cultivate in youth, and oftentimes it is a conceit which the experience of years fails to correct. This is not saying that such a book as Dr. Edman's is wanting in edification for the young; but it is meant for a warning against its too ready absorption. 'Twere pity, indeed, if young men should be carried by the illusion of its perspective into a cocksure and superficial philosophy, as well might happen. To some extent I get from the book the same pause which Mr. Wells's *Outlines of History* impels: Is Man, after all, so poor a thing? In my view the evidence of life leads elsewhere.

In particular—and here I come to a quarrel which I would hold not merely against Dr. Edman, but against the main tides of contemporary psychology, social and what-not—in particular, I do not believe that human traits can be so assembled as to picture a total or living man. Instincts, habits, appetites, imaginings, satisfactions, and the like, are without bond or meaning until the character of an agent, not made by them, but making them in their several sorts, is duly recognized. This the psychologists decline to do, with the consequence that they give us lexicons but no science. And so, when Dr. Edman, with the valiantest intentions in the world, sets out to justify reason and the life of reason, he is driven to gloss over its essential character, which, as Milton says, is choosing, and to treat it as some vague precipitate of muddied and perturbed reflexes. "Man's reason," he says, "which has its roots in his instincts, is the means of their harmonious fulfillment." And here we have in a phrase the key to the whole philosophy of a sense-engaged world. In direct speech, reason is the panderer of the passions: that is not only the psychological inference to be drawn, it is also the social and moral sermon which is preached to our generation.

That our day believes itself to believe this, I make no doubt. It is the matter of more or less learned expression in the fields of psychology, sociology, economics, historiography, social philosophy, and in the fashionable chat of the sophisticated. The idea is a natural consequence of the vogue of Darwinism, which, in explaining man as a confluence of environment and heredity (itself nothing but ancestral environment), makes of him not even a machine, but only a dumb mechanical product. It has come in with this vogue and has carried the fashionable theorizing of our time. But it has

not carried the practical convictions of the day. There are few more striking conflicts of human ideals in the history of mankind than has been the great struggle inaugurated by the two past centuries. The eighteenth century saw the rise and triumph of belief in the individual responsibility of political men; in the "rights of man" as a person and citizen, and essentially as a free agent; liberty and democracy were the slogans of the period, and pragmatically they "worked"—for there has seldom been in history a more vivid carrying out of ideas than has been the carrying out of this democratic philosophy of man sponsored by Milton, Descartes, Locke, Rousseau, and the makers of the Revolutions. In the western world the whole theory has remained vital, and recently a great war was fought over it—certainly not as yet to see it crushed by its great antagonist, that Darwinism which for three quarters of a century has been denying all that the democracies of the world affirm. The struggle is by no means ended; and it is certainly a game fray, with the political convictions of a quarter of mankind on one side and the influence of the schools almost wholly upon the other.

To which party will Dr. Edman's book lend support? Assuredly not to the democrats, not to the men who believe in the agential power of mankind to master environment. And as I think over the whole meaning of education, in its relation to our institutions, I am led to pause once more. Here is a book wonderfully responsive to the thought and feeling of our day, a book which truly does give a comprehensive perspective of society as society is conscious of itself. But of the truth of human nature? I am uncertain that just these ideas will lead to saner citizenship in these United States of America; I am doubtful if they will lead young men to believe in their country. And for my own part, I should prefer that my boy, as freshman, should get his notion of human nature from Montaigne's *Essais* or even Burton's *Anatomy*, local as these are of other times, and vastly more prefer that he should get it from Plato or the Bible. After all, we get the coloration of our own day all too indelibly; but the true complexion of man can be known only through laborious ventures into other ages.

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JOURNALS AND NEW BOOKS

MIND. January, 1921. *Professor Ward's Psychological Principles* (pp. 1-24): G. DAWES HICKS.—The writer concludes: "I venture to urge that thoroughly as he [Ward] has exposed the weakness of 'representationism' he has yet been too lenient with it,

and that the conception of the conscious subject, which he has himself done so much to develop, can not, in truth, be brought into coherence with the remnant of that doctrine which he retains." *Prof. Alexander's Gifford Lectures* (pp. 25-39): C. D. BROAD. — An exposition and criticism of *Space, Time, and Deity*. The writer thinks that readers will not be disappointed in their hope that in this work "England was at length to produce a comprehensive system of constructive metaphysics in which the speculative boldness of the great Germans should be combined with the critical good sense of Locke, Hume, and Berkeley." The article is concluded in the *April Mind*. *Hume's Ethical Theory and Its Critics* (pp. 40-56): FRANK CHAPMAN SHARP. — A paper attempting "to deal with a number of serious misinterpretations which have become current, and which are concealing the real Hume from the view of students of the moral life." *Discussion*. *Plato's 'Misconception' of Morality*: E. HALE. *Critical Notices*. W. McDougall, *The Group Mind*: B. BOSANQUET. R. F. A. Hoernle, *Studies in Contemporary Metaphysics*: JOHN LAIRD. A. Einstein, *Relativity*; A. S. Eddington, *Space, Time, and Gravitation*; A. N. Whitehead, *The Concept of Nature*: A. E. TAYLOR. C. A. Richardson, *Spiritual Pluralism and Recent Philosophy*: H. V. KNOX. J. Handyside, *The Historical Method in Ethics, and other Essays*: E. E. C. JONES. *New Books*. H. R. Marshall, *Mind and Conduct*: J. DREVER. G. Gentile, *Teoria Generale dello Spirito come Atto Puro*: B. BOSANQUET. G. Gentile, *Discorsi di Religione*: B. BOSANQUET. E. Freundlich, *The Foundations of Einstein's Theory of Gravitation*: C. D. BROAD. D. C. Macintosh, *Theology as an Empirical Science*: G. GALLOWAY. M. Casotti, *Saggio di una Concezione Idealistica della Storia*: B. BOSANQUET. P. Gentile, *L'Essenziale della Filosofia del Diritto*: B. BOSANQUET. H. H. Goddard, *Psychology of Normal and Subnormal*: F. C. S. SCHILLER. E. Chiochetti, *La Filosofia di Benedetto Croce*; A. Gemelli, *Religione e Scienza*: H. WILDON CARR. C. T. H. Walker, *The Construction of the World in Terms of Fact and Value*: O. C. QUICK. S. A. McDowall, *Beauty and Beast*: B. BOSANQUET. Jacob Boehme, *Six Theosophic Points and Other Writings*: B. BOSANQUET. S. Ward, *The Ways of Life*: B. BOSANQUET. Dr. L. Stein, *Philosophical Currents of the Present Day, vol. II*: J. L. H. C. Link, *Employment Psychology*. A. T. Schofield, *The Mind of a Woman*: F. C. S. S. P. Oltramare, *Vivre, Essai de Biosophie theorique et pratique*: F. C. S. S. R. R. Marett, *Psychology and Folk-Lore*: J. DREVER. A. G. Tansley, *The New Psychology and its Relation to Life*. E. Gilson, *Le Thomisme*: A. E. T. C. Zervos, *Un Philosophe Neo-Platonicien du XIe Siecle, Michael Psellus*: A. E. T.

- Guénon, R. Introduction générale à l'étude des doctrines hindoues. Paris: Rivière. 1921.
- Guy-Grand, G. Le Confit des idées dans la France d'aujourd'hui. Paris: Rivière. 1921. Pp. 269.
- Hobhouse, L. T. The Rational Good. New York: Henry Holt & Co. 1921. Pp. xxii + 237.

NOTES AND NEWS

To the Editors of the JOURNAL OF PHILOSOPHY:

Just after my article on "The Need of a New English Word to Express Relation in Living Matter"¹ was published, my attention was called to the fact that Dr. F. Müller-Lyer's *Phasen der Kultur* had been published in English (*The History of Social Development*, Alfred A. Knopf, 1921), and that in this work much is made of the principles of differentiation and integration.

A rather hasty reading of the chapters which have these principles for their specific topics reveals Müller-Lyer's recognition of the importance of these principles in social phenomena. But such reading also so clearly reveals, to me at least, the consequence of failure to recognize the phenomena which in my article I proposed to designate as conferentiation, that I feel the opportunity ought not to be permitted to pass without attention being called to the point, even though under the circumstances this can be done only in the meagerest way.

To be as brief as possible, take as an example a single point in the author's discussion of industrial differentiation and integration. Under the heading, "The Phaseology of the Medium of Exchange," Phase II: "Intertribal Barter without Medium of Exchange," the author mentions the case of certain Congo tribes. Shore dwellers and inland dwellers were differentiated into fishermen and banana-men, the concomitant integration being the exchange of articles of these two classes of producers.

The point I would make is this: In case the differentiation were so complete or extreme that the fishermen produced absolutely nothing but fish, and the banana-men produced absolutely nothing but bananas, it would be *physiologically impossible* for either group to exist, or at least exist well, by eating its own product alone. Were such existence attempted the result would be physical weakness and probably decay. Over-differentiation would result in disintegration. In such a case, consequently, an exchange of products between the groups, providing each, perhaps, with a "balanced ration," might properly be called economic integration.

¹ THIS JOURNAL, vol. XVIII, nos. 17 and 18.

It would enable each group to go on existing as it existed before the differentiation became so intense. It would be a way of preserving the status quo of the individuals of each group, but it would not of itself add anything to either group. Physiologically judged it would be on the plane of assimilation, of nutrition, but not necessarily on the plane of growth and development.

But unquestionably there is a kind of exchange of products which does much more for each party to the transaction than to enable it to maintain its status quo. Genuine growth and development on both sides may result therefrom. Each party may be acted upon determinatively by the exchange, without undergoing any impairment of integrity. For example, America may sell typewriters to Japan and buy screens in return, both nations being spiritually as well as physically benefited by the exchange. Industrial exchange of this sort is conferentiative in the strict sense of our definition. It seems to me it is not going too far to say that recognition of the difference between integration and conferentiation in the economic realm is recognition of the difference between basing economic theory and practise on purely physical grounds and basing them on spiritual and moral as well as physical grounds.

Müller-Lyer's book is said to be a "serious attempt at an Inductive Sociology." That it is such is obvious on every page; and that it scores a large measure of success in this effort seems beyond question.

I submit, however, that here is an inductive point of first rate importance which the author has overlooked.

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Mr. Pedro S. Zulen of Cambridge, Mass., has sent us the following addenda to Professor Perry's *Annotated Bibliography of William James*:

- 1892—2. Translated into Spanish and prologue by Santos Rubiano. Madrid, D. Jorro, 1916.
- 1896—2. Translated into French by L. S. Pidoux, in-12, pp. 43. Saint Blaise, Foyer Solidariste, 1908.—Into Spanish in the volume: William James, *La vida eterna y la fé* of the Biblioteca Sociológica Internacional. Barcelona, Heinrich y Cia., 1911.
- 1897—3. Translated into French and preface by Löys Moulin, pp. 345. Paris, Flammarion, 1916.—Last essay translated into Spanish in the above-mentioned volume *La vida eterna y la fé*.

- 1898—5. Translated into Italian by C. Pironti. *Rivista d'Italia*, February 1906, pp. 320-343. The same translation but corrected by G. Papini, in William James, *Saggi Pragmatisti*. Lanciano, R. Carabba, 1919.
- 1899—7. Translated into Spanish and prologue by Carlos M. Soldevilla. Two volumes of the Biblioteca Sociológica Internacional. Barcelona, Heinrich y Cia., 1904.
- 1899—11. Translated into Spanish in the above-mentioned volume *La vida eterna y la fé*.
- 1900
- Preface especially written by William James for the Italian edition of *The Principles of Psychology*, pp. VII-XI. (A statement and a defense of his psychological point of view.)
- 1904—13, 1905—9 and 1907—1. Italian translation in the above-mentioned *Saggi Pragmatisti*.
- 1908—8. Translated into French in the second edition of Marcel Hebert's *Le Pragmatisme*. Paris, Emile Nourry, 1909, pp. 139-153. (This translation was revised and corrected by James.)
- 1909—8. Translated into French under the title, *L'idée de vérité*, by Mme. L. Veil and Maxime David, in-8, pp. 258. Paris, Alcan, 1913.
- 1911—1. Translated into French by Roger Picard under the title *Introduction à la Philosophie, Essai sur quelques problèmes métaphysiques*. Paris, Marcel Rivière, 1914. Volume XIV of the collection *Études sur le Devenir social*.

The annual meeting of the American Psychological Association will be held this year at Princeton University. The programme committee, being anxious to encourage discussion, has decided to limit the papers to three fourths the usual number. Abstracts of all papers to be presented must be in the hands of the Secretary by November 13. This is a somewhat earlier date than usual but it is planned this year to have the abstracts printed and distributed before the meeting, so that members may be prepared to discuss the papers at the various sessions.

Dr. John Henry Muirhead, professor of philosophy in the university of Birmingham, has given a series of lectures during the last two weeks at the Union Theological Seminary in New York. The subject of the series was "The Spiritual Basis of Citizenship." The first lecture stated the problem and defined the meaning of spirit and spiritual. The other three dealt with three different spheres of spiritual activity: science, morality and citizenship.

THE JOURNAL OF PHILOSOPHY

THE INTELLECTUAL SIGNIFICANCE OF THE GRASPING REFLEX

IT is a charge commonly made against the behaviorists that they commit the fallacy of over-simplification, not only when they state their fundamental theories of mind, but also while they attempt to account for complex intellectual and emotional phenomena. To be sure, such a criticism serves more often to reveal the bias of the critic than to show the accused how they might learn from their mistakes, but this is perhaps because the critic has more confidence in his ability to warn than in his skill as a teacher and guide. This same accusation was made in time past against every thinker who had found a new formula by which the muddled confusion of experience might be organized and controlled; for the whole history of modern science is really an account of the supplanting of vague but convenient notions by clear and simple principles derived from a fresh observation of the phenomena of nature. Historically, then, the behaviorists come very well recommended, since today they exhibit that attitude which has always been symptomatic of straightforward progress in science.

The defense of the behaviorist does not, however, consist merely in parrying the blow that is aimed at him; it rather lies in showing the positive errors underlying his-opponents' objections. Such errors, moreover, are plainly discernible, and, as we see them, three-fold. The first is the inability to perceive that the most complicated effects, both mental and physical, may be produced by extremely simple causes. For just as a tremendously intricate network of froth may be produced by the simple pendular motion given to a soap-shaker across the surface of soapy hot water, so as complicated a "state of mind" as you please may be produced in some individuals by nothing more than simultaneous rises in the temperature and humidity of the atmosphere. Moreover, we have all seen chronically irritable persons the cause of whose disquiet could be traced to a carious tooth, a table too high for them to work at comfortably, direct electric lighting, and so on, while all the time they were entirely unaware of such a circumstance as the sole critical cause of their elaborate mal-functioning. Indeed, we

might even say that if such slight environmental changes as these can affect our whole temperament, the behaviorist, far from being over-simple in his explanations, has scarcely gotten the vision of how few the essential phenomena of mind really are.

The second error which the opponents of behaviorism commit is their insistence upon the scientific value of all introspective data whatsoever, and their demand that the behaviorist not only explain these data, but also include them one and all in his scheme of reflex response. The fault here lies in the assumption on the part of the introspectionist that the data which he has amassed are *the chief data* of psychology, whereas they may not necessarily be anything more than the *by-products* of his method. But more than this, the introspectionist fails to see that whenever we introspect, we actually lose contact with the environment of the stimulus. Introspective psychology, therefore, is only a special device for training us to increase the number of verbal associations which any stimulus may arouse. It becomes merely the science of imagery, which is by no means the same thing as the science of thinking, for, as is well known, the presence of imagery does not imply that it will be made use of. And if the introspectionist does not himself always make use of the chosen data of his science, how can he expect that the behaviorist will feel bound to give them a prominent place in his scheme?

The third error of the anti-behaviorists consists in their unheroic attitude toward physiology. For while they may be observed time and time again to resort to the nervous system and to the sense organs as a means to explain mental processes, yet when they are pressed about this, they are usually found admitting that all such structures are at best "convenient fictions," never, except possibly in disease, causing or conditioning mental states, but merely affording agreeable, figurative parallels in the shape of center and margin, grades of complexity, or hypothetical spinal levels. The chief difficulty here lies in the interpretation of the human body as an architecture rather than as a "going concern," as a pictorial rather than a dynamic affair, in terms of structure instead of function, of anatomy rather than kinematics. And as this error is fundamental, so are the results of it pervasive.

Perhaps, however, the current toward behaviorism has set so strongly as to make such remarks as these unnecessary to pursue any further. That current, moreover, began to acquire its initial velocity when the first motor theories of consciousness began to be formulated. For the termini of all motor theories are nothing

more or less than mechanistic hypotheses such as Crile,¹ for example, has formulated. Even the law of dynamogenesis pointed in just that direction. So that when the behaviorist asserts that the fundamental datum in psychology is reflex response, he is simply announcing the terminus of the trend in all psychology for the last thirty years. The transition is easily traceable from James to Angell, and thence to Judd, and so on to Watson and Holt—nay, the careful reader can detect many a behavioristic utterance in La Mettrie, Lewes, Bain, and Spencer, to say nothing of a dozen other writers both more recent and remote than these last. For once it is admitted that afferent impulses do not stop at the "soul," but proceed straightway to efferent nerves and thence to muscles and glands, and as soon as it is granted that such pathways and structures are essential equally in Medusa and in man, there will be few psychologists indeed who would not seek to complete that hypothesis which Descartes meant to extend over the whole animal kingdom, had not the predicaments of Bruno and Galileo deterred him.

It is not for a moment to be understood that the mere theoretical reduction of mental phenomena to reflexes, or even the establishment of the facts of "action-patterns" or "specific responses" constitutes the whole labor of the psychologist. For even granting that these are the lowest terms of mind, there still remains the larger part of the task yet to be performed, namely, the establishment of the proof that no mental phenomenon can be completely explained without precise and unequivocal reference to the combination and integration of such neuro-muscular reflex responses. This work, strange to relate, now moves far too slowly and heavily. Even behaviorists seem to be unaware of the extent to which it has been halted. Fortunately, it is not difficult to show why this retardation has occurred. It is because the majority of behaviorists have themselves made nothing whatever out of those very factors to which all motor theories of mind indubitably point, namely, the mechanics of muscular action, including the work the skeletal muscle accomplishes to move its bone, and the release or transformation of energy within the muscle which is brought about through the motor nerve. On these matters, which are some day bound to be regarded as equally important with nervous phenomena for behavior psychology, almost every behaviorist remains silent and uncommunicative.

¹ Crile, Dr. G. W., *Man, an Adaptive Mechanism* (Macmillan). See also his article, "A Mechanistic View of Psychology," in *The Origin and Nature of the Emotions* (W. B. Saunders Co.).

Without going into this matter here any further, except to state that it provides as fertile a field for research as could be desired by the laboratory investigator—in such things as the study of memory postures, the range of imagination possible under certain bodily restraints, *etc.*—let us at once consider whether the reflex response involved in such a simple action as grasping with the hand may not have a far greater significance than we imagine for adult behavior, and even for many so-called intellectual processes. It is the purpose of this paper to exhibit such a connection, and therewith to fully justify the behaviorist against the charge of over-simplification.

The grasping reflex consists of a tendency on the part of an infant to close its hand about any suitable object pressed against its palm, and to cling to that object often for ten or fifteen seconds even if it is lifted so high that the infant is suspended in the air. Watson,² who has made a careful study of this tendency, of its varying strength from day to day, and of its disappearance toward the end of the fifth month, states that “in one baby born without a cerebrum the reflex was practically perfect up to the day of its death at 18 days.” Twenty-eight observations made on one baby during the first three days revealed what is to all intents and purposes a truly natal tendency to grasp the stick and support the full body weight with either hand. The psycho-physiology of this tendency is important, not solely because the reflex is an index of normality and strength, nor yet because of the fact that the infant *hangs* like a monkey from a limb (for while this hanging freely is a sign of the strength of the instinct, it is not necessarily the sole proof of it), but because of the meaning of such a tendency for adolescent and adult mentality—in a word, for “the learning process called life” in its widest as well as in its most particular signification. But first let us look at the physiological genesis of the reflex itself.

The grasping reflex is a sensori-motor action which begins with the adequate stimulation of the touch spots in the skin of the palmar surface of the hand. This stimulation is carried up to the brachial plexus by the palmar-cutaneous branches of the median and ulnar nerves and is there distributed to the posterior roots of the last four cervical and the first thoracic nerves, whence, after being shot ventrally across the cord, it reappears in the anterior roots and is carried by the motor branches of the median and ulnar nerves again to the various flexor muscles of the palm and fingers.

² Watson, J. B., *Psychology from the Standpoint of a Behaviorist* (Lippincotts), pp. 240, 275.

It is a true spinal reflex, not requiring the cerebrum. The flexor muscles thus innervated quickly contract, the hand is closed about the stimulus and holds it firmly, and indeed, as already observed, with such tenacity that the infant's weight can be lifted into the air and held there unsupported. To this tenacity three principal factors contribute, which we shall now briefly examine.

To begin with, "Flexion is more powerful and complete than extension of the fingers. The *flexor profundus* alone acts on the terminal phalanges; the *flexor sublimis* and *flexor profundus* together flex the proximal interphalangeal joint; and flexion of the metacarpo-phalangeal articulation is effected by these muscles, assisted by the interossei, lumbricales, and flexor brevis minimi digiti. Extension of the phalanges is effected by the united action of the extensors of the digits, the interossei and lumbricales; extension of the fingers at the metacarpo-phalangeal joints is produced solely by the long extensor muscles. *Separate extension of the index finger* only is possible; the three inner fingers can only be flexed and extended together, on account of the connecting bands joining the extensor tendons on the back of the hand."³ The first reason, then, why the grasping reflex is so powerful is to be found from a consideration of the muscular and bony machinery of the hand itself. For, all teleology aside, the hand is the most *efficient flexion* machine in the body.

Another reason why the grasping reflex is so powerful is revealed by a consideration of the mechanics of the proprio-ceptive system. There are end-organs of muscular, tendinous, and joint sensations which are necessarily stimulated by the flexion-reflex of grasping. The stimulation of these sense organs, either by its being carried clear to the spinal cord or merely to the juncture of the median and ulnar nerves in the forearm, is transmitted back to the flexion muscles to reinforce the contraction already established there. By this mechanism, called the "circular reflex," the muscles automatically reinforce their own contraction. It is not at all necessary to consider that these proprio-ceptive reflexes are provocative of anything *conscious*, since we are countless times entirely unaware of the motions and postures of the skeletal muscles, however important for conscious response they may be. For the behaviorist sharply distinguishes between (conscious) kinesthetic sensations and (unconscious) kinesthetic events in the response process. To be sure, this reinforcement, as well as the flexion reflex itself, may soon wilt, with the result that the infant falls

³ Cunningham's *Text Book of Anatomy* (1903), p. 336. See also pp. 323-335 for illustrative cuts.

onto his pillow. But such a wilting is only to be expected from both a consideration of the normal duration of any prolonged muscular contraction, as well as from a knowledge of the stimulating effect of gravity upon the extensor system of the hand and forearm. For not only does every peripherally stimulated reflex easily tire on account of the expense to which the body is put to maintain the respiratory exchange in nerve and muscle, but it also happens here that the infant's unsupported position is bound to produce tendinous strains which sooner or later will stimulate spasmodic movements eventually involving the antagonistic (extensor) muscles of the hand. (It is pertinent to remark in passing that while this reflex lasts, it exhibits, as least so far as the behaviorist is concerned, a true case of *attention*, since the flexed posture of the hand is such as to keep the sense organs of the palm adjusted to receive the stimulus most effectively.)

Still another factor contributes to the strength of the grasping reflex in the newly born. For whether it be dogmatic to assert that this reflex is *learned* by the organism during his embryonic life, it seems more than likely that it *is* learned then in the same manner as any other habit or skilful action is acquired by man. For mark, that the infant grasps because his mechanism of prehension is fully developed, and not just because he is *born*. In the light of this observation, which can be safely generalized for all human activities whatsoever, it is doubtful whether any of our behavior should be unqualifiedly termed "instinctive."

This grasping reflex, practically perfect at birth, requires, as we have already mentioned, a precise sensori-motor mechanism, involving, among other things, the median and ulnar nerves. To be more exact, certain of the nervous pathways of the body have become at the moment of birth attuned to function fully and specifically upon the presentation of an adequate touch stimulus to the palm of the hand. Indeed, as soon as the infant is born, the median and ulnar nerves "know how" to perform their characteristic and appropriate—one might almost say *exclusive*—function. Such appropriate functioning requires both time and practise.

Let us venture an explanation of the manner in which this spinal reflex may have been learned.⁴ As is well known, the embryo develops characteristically shaped hands by the end of the eighth week of foetal life, which hands, as the embryo proceeds towards maturity, assume a semi-flexed posture which is maintained until the time of birth. At the same time that the hands were being shaped, the muscles were growing in them—each muscle of the

⁴ For the following suggestion I am indebted to Dr. Edwin Holt.

flexion set growing with and out into the rudiments of the digits—while the appropriate nerves were steadily prolonged into the various tissues of the hand. When, therefore, the hand attained its final shape, it was supplied with both sensory and motor nerves ready to be coordinated by the first stimulus which should be presented. The nature of such a stimulus, even in prenatal life, is not difficult to conjecture. The embryo's hand, be it remembered, is partly flexed, and its fingers nearly touch the palm. When, therefore, any chance or random movement of the mother's body, occasioned by her walking, sitting, lying down, or rising, disturbs the equilibrium of the embryo, it is more than likely that both its palm and fingers receive entirely adequate touch stimulations. The sensory nerves thus being stimulated, transmit waves of electrical change to the cord, across the synaptic junctions, down the motor pathways, and thence to the end-plates of those muscles which it is the particular business of the median and ulnar nerves to contract, namely, the flexor muscles of the palm and fingers. Such a stimulation is given not once or twice only, but hundreds or even thousands of times, the sensitivity of the palmar surface becoming greater as the muscular contraction becomes more and more pronounced. In this way, we conjecture, the grasping reflex comes to be *learned*, and even by as long a period of practise as three or four months' time. The strength of this reflex may then be attributed not only to the mechanical properties and the proprioceptive mechanisms of the hand, but also to the possibility that the embryo may have unconsciously practised the flexion of the muscles of his fingers and palm.

Now such a sensori-motor reaction, made possible by the factors we have just described, seems to have special value not only for determining the normality of the infant, but also for the life of the growing child and for the social and intellectual behavior of the adult. To begin with, the hand is *par excellence* the active exploratory mechanism whereby we learn the shape of objects. It is not so much with the eye that we educate ourselves to differentiate contours and dimensions, but rather with the palmar surface of the hand and fingers, which contours and dimensions we also appreciate best when the hand is closed or folded about them. To be sure, it is not the *tenacity* of the grasp which functions essentially in our learning about shapes and sizes (since that, indeed, is lost about the 150th day of life), but only the continuous tendency toward flexion with respect to nearly all objects whatsoever which come within the child's reach. The grasping reflex suffers alteration and development of many kinds whereby it enables the child

to handle his food-pusher and his spoon, to undress himself, to write, to play ball, and to do a thousand and one more or less useful things. What is lost in tenacity of grip is more than made up in deftness and flexibility. Besides, the reflex is finally so well coordinated with arm, shoulder, and trunk movements, that much of the strain which would be produced in the hand by rowing, driving, and similar operations is nicely distributed over a wide muscular area.

The use of the flexed hand in educating us to perceive the shape of spheres, cubes and octagons indicates, however, only in a small way the intellectual significance of the grasping reflex. For it takes only a scanty research into human activities to reveal that this tendency to close the hand tightly is the basic response in a great variety of widely differing behaviors. Our word *pugnacity* is derived from the latin *pugna*, a fist, that is, a tightly closed fist, a fully functioned grasping reflex. *Boxing, fisticuffs*, and the actions of *shaking, doubling, or clenching the fist* are all modifications of this prenatally learned instinct. To be sure, *pugnacity* is not primarily an intellectual accomplishment, but the art of boxing is. There are other kinds of violent behavior which are strictly dependent upon the integrity and development of this same simple response. Our language points to them by such terms as *grabbing* and *snatching, wringing from and tearing away, scrambling for and pouncing upon, and snatching from one's grasp*; while *wresting from, laying violent hands upon, and other forms of rapacity* are equally served by this flexion mechanism. Since, also, the grasping reflex is the preliminary step in the making of twisting or torsional arm movements, the *extortioner* and the *grasping miser*, the beggar with the *itching palm*, and the *close, hard, or tight-fisted miser* may be mentioned in this same catalogue of derivatives.

Yet even more striking evidence of the importance of the grasping reflex for adult human behavior is found in the use of those terms which signify *physical possession*, not only as far as bare *prehension*, but also as far as the *retention* of either booty or property is concerned. Our words *prehension, prehension, and acquisition*, the terms *grip* and *gripe*, as well as the expressions *get into one's clutches, or into one's hand, get hold of, gain a hold upon, get into one's grasp, lay or clap one's hands upon*, as well as the proverbial *grasping at straws* in which action the drowning man reverts to his earliest perfected reflex, one and all show how widely the flexion of the hand enters into the struggle for existence and into the mastery over one's fellows. In illustration of the combined action of the grasping and circular reflexes we have such phrases as *keeping hold*

of, clinging to, laying, getting, taking, catching firm hold of, or fastening upon; the words *clench, clutch, clinch, grapple, grab, collar, and take by the throat* are similarly derived from this primitive manual action; as well as are the expressions *tight hand, or tight grasp, strong hand, making sure of, getting hold, or having a firm hold of, and getting into one's hand*. The legal term *mortmain*, the proverbial *bird in hand*, and that signifier of failure, *to lose one's grip*, are simply additional proofs not only of the social and intellectual significance of the grasping reflex, but proofs as well in our defense of the behaviorist against the charge of *over-simplification*.

If any additional proofs are needed, it is wise to notice that many of our phrases which signify authority, whether they be classed under the captions of *management, government, despotism, or tyranny*, are basically the grasping reflex. Witness such expressions as *get or gain the upper hand, pull the strings, have or get the whip hand, hold authority, wield the scepter, take the reins of government, Dieu et mon droit (i.e., right hand), rule with a high, strong, tight, or heavy hand, iron hand or iron grip, carry with a high hand, rule with a rod of iron, or have the game well in hand*. Witness also that one meaning of the term "rights" is also based on the same simple reflex, for "possession is nine-tenths of the law."

What further proofs of the intellectual significance of the grasping reflex could be asked for than are found in a consideration of the functions of such tools as *tongs, forceps, pincers, nippers, or pliers*? All these instruments are simply mechanical devices for the performance of those actions which our clenched hands, even though assisted by our finger-nails, can not in their weakness accomplish. But even here our list of derivatives is not completed. For many other activities, some of which refer to the most abstract intellectual operations, ultimately refer to the motor functions of the median and ulnar nerves. *Apprehension* is *catching on*, while *comprehension* is *seizing* for the purpose of estimating. The *emancipated slave* has profited by the *mandate* for his *manumittance*. Things clear to us are *manifest*; cotton cloth is *manufactured*; some primitive boats are *manumittive*; loaded dice are *manipulated*; the author sends to the publisher his *manuscript*; the hand clutches the *mandolin*; the contrabassist "plays by *handfuls*"; the pervert performs *manustupration*; the convert is given the *right hand of fellowship*. We speak of an *intellectual grasp*, which generically bears more than a superficial resemblance to the *comprehension* of such simple things as shapes and dimensions. Even our mathematical operation of *subtraction* is learned by the child through his *manipulation* of blocks

and marbles. Similarly, *abstraction* is a "taking away," that is, acting toward anything *as if* it were made of removable parts. And to close the list we mention that great group of words such as *command*, *demand*, and *remand*, all of which mean in some important sense the training which the hand has gotten to close over and grasp tightly some adequate stimulus to the sensitive palmar surfaces.

It is thus no long step from the grasping reflex of the newly born to the comprehension by the adult of a mathematical formula. The step is short both to the etymologist and to the behaviorist as well, for the very good reason that they both, whether consciously or not, integrate these many diverse terms and phrases by means of a precise physiological function. Our thesis, then, is that whenever we use these various expressions with the proper signification, they have meaning only to the extent that our coordinated neuro-muscular responses include "action-patterns" involving the motor pathways of the median and ulnar nerves and the muscles of the palmar architecture. That is to say, *we think these various terms* (quoted above) *by means of our hands*. Thought processes are response processes, involving not only sensory and motor nerves, but *muscles* as well, and not only muscles, but also the chemical mechanisms which maintain the respiratory process in the machinery of locomotion. Perhaps the following considerations will render this thesis more intelligible.

To begin with, it is not reputable logic to conclude that just because these various words and phrases which are etymologically derived from the act of grasping are unaccompanied by *awareness* of the hand (*i.e.*, kinesthetic sensations or images of grasping), the use of these words is entirely disconnected from the reflexes involved in the overt act of grasping. I know that many psychologists and most philosophers would flatly deny that the process of *abstraction* or the concept of emancipation, for example, was in any way connected with the stimulation of the palmar muscles, even though they might be willing to admit that some unknown (and undiscoverable) brain process might possibly be involved in such-like thought activities. But it seems nothing short of logical perverseness thus to seek for the explanation of the thought processes in the cerebrum ("the dark throne of mentality itself") when neuro-muscular reflexes and not cerebral events are almost the only things in physiological psychology we have a fixed acquaintance with. Besides, what else can the brain be doing except transmitting stimulation from fibre to fibre?—not a very illuminating explanation for such varied activities as we carry on, even in our thinking! To push the explanation of the thinking process into the obscure is, to say the least of it, both timid and misleading. I do not believe that we need to be so off-hand about the

matter. For not only is it absurd to conjecture that because we do not know exactly wherewith we think, we must therefore think with the brain; but it is also untrue to our scientific traditions in physiology not to attempt an explanation of the thought processes in terms of those reflexes which we have everywhere so plentifully under our observation. Astrology became obsolete the moment the law of falling bodies was discovered, and introspectionism became an untenable doctrine the moment the principles of dynamogenesis and reflex action were generally established. And just as we now explain all stellar events by physics, so also we can, I surmise, explain mental events by neuro-muscular processes alone. (I say "neuro-muscular" rather than merely "nervous" processes, for the very good reason that the chief function of the nervous system, so far as we know it, is its activation of muscles and glands.)

How, then, does the grasping-reflex mechanism function in our thinking such concepts as *rapacity*, *demand*, and *emancipation*? The answer is, I think, extremely simple. There is a law in physiology called the *all-or-none* principle of nerve and muscle, about which Professor Bayliss writes as follows:—

"Nerves can be excited, then, by many and various forms of stimuli and, supposing that the nerve is in connection with some indicator, such as a muscle, different strengths of stimulation are found to produce different degrees of contraction. . . . Now the most careful experiments (see especially those by Keith Lucas, 1909), have shown that the degrees of contraction of a muscle that can be produced by varying the strength of the excitation of the nerve to it, are not as numerous as the degrees of strength of the exciting stimulus, but take place in a series of steps which are no more numerous than the number of motor fibres supplying the muscle. This fact obviously indicates that the varying degrees of contraction are due to differences in the number of muscle fibres in the state of contraction at one time, and that each fibre can only be excited to its maximum capacity or not at all."⁵

The implications of this law for our particular problem as well as for the thought process in general are striking and momentous. For it is a fully defensible hypothesis that "to think of" doing something differs from the overt activity itself chiefly in the number of nerve and muscle fibres involved. Indeed, only on such an hypothesis is imagery of any sort possible. For when a man has a visual, an auditory, or a motor image, he is simply acting *as if* the color, the sound, or the motion were present. Now the all-or-none law beauti-

⁵ *Principles of General Physiology*, Longmans, 1918.

fully provides a physiological basis for just such an "as-if" reaction. For since every response is, so far as it goes, *maximal* for the number of nervous and muscular elements involved, images may be defined as some of those responses which are carried out on "low gear" by the neuro-muscular mechanisms of the body. Moreover, the safe assumption is that whenever we employ any of these words or phrases which we have previously related to the grasping reflex, and mean anything by them, there is taking place in our median and ulnar nerves and in the flexor muscles of the palm and fingers just such activities as overt grasping would involve, only on a much smaller scale. Theoretically, indeed, as few as a dozen motor neurones from either of these nerves stimulating a dozen muscle fibres in the palm or fingers in some specific pattern of activity would be sufficient to provide any one of these words and phrases with a meaning. And unless we are very much mistaken, something closely akin to this does happen when a man says, for example, "Wait until I get hold of you!" or "I grasp the situation at once." And while this hypothesis is largely a matter of conjecture, I entertain the highest hopes that the electro-physiologist will verify it.

If these arguments are sound, and these predictions realized, we shall go a long way toward clearing up many difficulties in behavior psychology. Indeed, the problem of the relation between body and mind will have passed into history. But even before such verification as we hope for, the weight of evidence is overwhelmingly in favor of interpreting the thought process as "a procession of motor attitudes," and by this we mean a *neuro-muscular* process, and not a cerebral mystery. Moreover, we have just shown that the grasping reflex is not merely a reminiscence of tree-life, but an essential, valuable, significant, and permanent factor in our intellectual and social development. Consequently it seems not too much to claim that a proper interpretation of such a reflex mechanism not only serves to acquit the behaviorist of the charge of over-simplification, but it also shows that the simpler the formulas of psychology, the more they explain. For it may well be that the motto of the behaviorist will eventually become: *Give me a nerve and a muscle, and I will make you a mind.*

ROBERT CHENAULT GIVLER.

THE SANITY OF HAMLET

Pol. What follows then, my lord?

Ham. Why, as *By lot, God wot*—and then you know—

“**W**HETHER Plato died in a dream, as some deliver, he must rise again to inform us.” The question of the madness of Hamlet, whether it was real or feigned, has the same and greater difficulties in the way of its solution. His own testimony could not be regarded as conclusive—for, if he were truly mad, we could hardly accept his word for it; while if he seemed mad merely, we could hardly believe a present protestation that the appearance was all a sham.

The learned Doctor Johnson remarks, “Of the feigned madness of Hamlet there appears no adequate cause, for he does nothing which he might not have done with the reputation of sanity,” while the wiser Coleridge finds in the play evidence of “Shakespeare’s deep and accurate science in mental philosophy.” The latter believes that Hamlet shows the effect of an over-balance of contemplative faculty. “His thoughts, and the images of his fancy, are far more vivid than his actual perceptions;” there is “a great, an almost enormous, intellectual activity, and a proportionate aversion to real action consequent upon it. . . . This character Shakespeare places in circumstances under which it is obliged to act on the spur of the moment:—Hamlet is brave and careless of death, but he vacillates from sensibility, and procrastinates from thought, and loses the power of action in the energy of resolve.”

The young intellectual, sorrowing for the death of his father, very naturally developed a psychosis under the influence of his mother’s unseemly second marriage. He became peevish. As he was not a valorous fighting man, his peevishness did not show itself in a pugnacious irritability. As he was neither narrow-minded nor a devotee of wine and sensual pleasure, he did not choose the ascetic mode of self-denial nor wander in the primrose path of reckless dalliance. Being simply a thinking man, he took to logic-chopping—and set up about himself a barricade of rigorous thinking behind which he was free to pursue his own reflections.

One can not be too logical in this world and continue to carry on his social functions. Such procedure is permitted only to small children who are not yet old enough to have learned that logic is strong medicine not to be taken too freely for the ills of every day, to old persons who are willing to accept the name of being peevish, and to unpleasant characters in fairy tales. It is the method of

those whom Aliee finds so annoying in her encounters in Wonderland. If Hamlet was really mad, his psychosis was that of an intellectual, a hypertrophy of that inner eye whose function it is to perceive meanings, relations and implications; while if he was only feigning his insanity, then he did it by taking things too strictly, too literally, by a general social perverseness manifested in a desire to quibble and split hairs. His madness, whether real or feigned, was an excess of sanity. A Greek name for the psychosis would resolve the paradox.

A little logic is a dangerous thing. A naïve acceptance of things at their face value without an understanding of their usual purport and broader significance is an indication of lack of experience. When Aliee failed to understand a remark of Humpty Dumpty and said "I beg your pardon," he replied "I'm not offended"—which was reasonable enough. He was simple, but good-natured. When she asked him, "Why do you sit out here all alone?" it did not occur to him that she assumed the gregarious instinct and he replied, "Why, because there's nobody with me! Did you think I didn't know the answer to *that*? Ask another." After more conversation of a similar sort, Aliee walked quietly away, and she couldn't help saying to herself as she went "Of all the unsatisfactory people I *ever* met—." Undoubtedly she recognized in Humpty Dumpty the feeble-mindedness of arrested development.

Humpty Dumpty's insistence upon the strictly logical attributes of things was evidence merely that he had the clear-seeing eye of a simple child. But let an older person, mature beyond the imputation of childishness, such as Hamlet was, show fondness for such an insistence, and the social world regards him as peevish and irritable. Indeed, an excess of sanity is socially unreasonable.

A gushing young visitor at Niagara Falls remarked, "Oh, isn't it wonderful, all that water falling that way," and an Irishman who happened to be a member of the party of tourists responded, "Well, what's to prevent it?" The Irishman ceased to be a desirable member of the party, and the young lady's feelings were wounded because she supposed that the Irishman had been annoyed by her burst of (not very logically expressed) enthusiasm. Doubtless the Irishman was annoyed, and doubtless Hamlet was annoyed by the garrulity of Polonius. Each reacted similarly to the annoyance, and each showed his feelings in a logical fashion.

What could be more reasonable than the reply of "Words, words, words" which Hamlet makes when Polonius asks him what he is reading? and what could tend less to encourage further conversation? What could be ruder, or more logical, than Hamlet's

reply when Polonius offers to take leave of him?—"You cannot, sir, take from me anything that I will more willingly part withal, except my life, except my life, except my life."

At another time when Polonius and Hamlet are exchanging banter, Polonius is made to say "If you call me Jephtha, my lord, I have a daughter, that I love passing well," and Hamlet jumps upon him with the retort, "Nay, that follows not." There is no implication there. Whether he is called Jephtha or not, he has a daughter just the same. The one has nothing to do with the other. They are logically independent. And this is our clue to the character of Hamlet. Throughout the play he is the alert intellectual splitter of hairs. To his friends, when he wishes to be agreeable, his hair-splitting is pleasant banter: to the others, when he chooses to be reserved, it appears as a barrier behind which he hides his thoughts and motives.

When Hamlet learns from the ghost the story of his father's murder, everyone, abruptly and for the time, ceases to be his friend. Until he shall decide upon a course of action he will trust no one. Horatio and Marcellus question him for news, but he decides to keep his thoughts to himself. He swears them to secrecy and then informs them gravely that "There's ne'er a villain, dwelling in all Denmark, but he's an arrant knave," a logical proposition true on the face of it. Horatio objects that no ghost need come from the grave to tell them that, and Hamlet cheerfully agrees—"Why right; you are i' the right: and so without more circumstance at all, I hold it fit, that we shake hands, and part." Hamlet's manner of dealing with his questioners is reasonable enough. He asserts a truth beyond which there is no question—as does the father who is embarrassed by the question of his son, "What is that for?" and replies "Why that is something to make little boys ask questions." Any pragmatist will agree that the reply is profoundly philosophical and true—and like Truth it brings an end to the discussion.

Hamlet is constantly aware of his own mental processes. More than that, he is aware that he is constantly watching them. He is in the position of the professional philosopher who criticizes his thoughts while he is thinking them—and confesses it when he reasons in his great soliloquy, "and by a sleep to *say* we end the heartache and the thousand natural shocks that flesh is heir to." This he thinks is a consummation devoutly to be wished, but he reviews his logic and concludes that sleep is not a premise from which the absence of dreams may be inferred. And the consideration of dreams which may come perchance in the sleep of death must give us pause.

From sleep and death he refuses to draw the inference of absolute non-being. The minds which have evolved the Occidental religions have made the same refusal. Hamlet has here reasoned to the central problem of metaphysics, but he reasons critically and refuses the leap to the rash and unwarranted conclusion which is the *cul de sac* of the mystics.

When Indra in the Hindu mythology seeks instruction from Prajapati as to the nature of the Self, he is informed that "He who moves about happy in his dreams, he is the self, this is the immortal, the fearless, this is Brahman." And he goes away satisfied in his heart. But the satisfaction is not for long, for it occurs to Indra that the happy dreamers might possibly change and might have bad dreams. He returns to Prajapati and objects, "Sir, although it is true that that self is not blind even if the body is blind, nor lame, if the body is lame, though it is true that that self is not rendered faulty by the faults of the body, nor struck when the body is struck, nor lamed when it is lamed, yet it is as if they struck the self in dreams, as if they chased him. He becomes even conscious, as it were, of pain, and sheds tears. Therefore I see no good in this." After he has lived with Prajapati for a time, Indra is enlightened further with respect to the self—"When a man, being asleep, reposing, and at perfect rest, sees no dream, that is the Self, this is the immortal, the fearless, this is Brahman." Thereupon he goes away satisfied in his heart, but the satisfaction again does not last for long. He returns to Prajapati, bringing fuel in his hands as is the custom with students, and objects regarding the dreamless sleeper, "In truth he thus does not know himself that he is I, nor does he know anything that exists. He is gone to utter annihilation. I see no good in this." Prajapati replies with many words to the effect that the Self is the mind, but the involved explanation is not convincing, and Indra softly and silently vanishes away and never is met with again in the myth.

Hamlet is well aware of these considerations which Prajapati brings forward in an effort to meet the objections of Indra. He knows also—as we suspect that Prajapati did—that they are inadequate to meet the situation. He says that there is nothing either good or bad but thinking makes it so. He could be bounded in a nutshell and count himself king of infinite space were it not that he had bad dreams. Indeed he is fully conscious of the crux at the center of metaphysics. At one time he seeks in his reflections a guide for his conduct, at another he finds in them basis for banter with Rosenerantz and Guildenstern.

One of his conversations with these two friends is devoted for a considerable time exclusively to entertaining logic-chopping. He shows them, as he shows Horatio at another time when the dust of Alexander is under discussion, that he delights in the exercise of the syllogism. He shows them also that he understands that a false proposition implies any proposition, for one of them asserts that there's no news "but that the world's grown honest," and he replies "Then is doomsday near: but your news is not true." Not satisfied then with drawing the first inference at hand from the asserted false proposition, he goes farther and himself asserts a proposition which his friends take to be false—that "Denmark's a prison"—but which he himself defends as true, thus leading them away to one of the central problems of philosophy, to the question of the subjectivity of judgments of value. "For there is nothing either good or bad, but thinking makes it so."

Logicians still debate whether a false proposition implies any proposition or not. Hamlet knew long ago that it does. And the matter is really not one for debate anyway—for the question is one of fact, whether a false proposition functions this way in our actual thinking. Everyone who uses profanity knows consciously or unconsciously that it does. Logicians are only conscious thinkers critical of their own thinking processes, and one of them may readily be imagined who would be willing to be damned if a false proposition does not imply any proposition. The author of the present writing is a Hottentot if it doesn't.

If Logic is regarded as a natural and objective science having for its duty the study of the relations which naturally arise between the propositions which linked together constitute thinking, then the drama of Hamlet is a most fertile source of raw material. For Hamlet thought more clearly than most men. He was aware of the essential principles of logic and used them consciously. He used them excessively: that was his madness.

Actuated by motives probably intermediate between those of the artist and those of the professional peddler of mystery, Poe wrote that "the question is not yet settled, whether madness is or is not the loftiest intelligence—whether much that is glorious—whether all that is profound—does not spring from disease of thought—from *moods* of mind exalted at the expense of general intellect." Sir Francis Galton, founder of the science of eugenics, cool-headed inquirer into things as they are, has an almost parallel passage. "Great men may be even indebted to touches of madness for their greatness; the ideas by which they are haunted, and to whose pursuit they devote themselves, and by which they rise to

eminence, having much in common with the monomania of insanity.''

We can not know truly whether Hamlet was mad or not. But we can describe his symptoms and define his psychosis. He appears to have had an over-fondness for logic. When he was craziest he used it most. In his maddest moments he seems to have been the coolest and most sane. "Though this be madness," as the garrulous and meddling but after all very wise Polonius remarked, "yet there's method in't." The method is a denial of the social compromise. Much logic is a splendid barricade.

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REVIEWS AND ABSTRACTS OF LITERATURE

Mind-Energy. HENRI BERGSON. Translated by WILDON CARR.
New York: Henry Holt & Co. 1920. Pp. x + 262.

The philosophy of Bergson has had the fortune of producing a wide range of reactions. His philosophy has had an appeal surpassing the limits of the academic world and transcending the group of technical students of philosophy and even of science. Even within the academic world, acquaintance with his work has not been confined to the philosophers. Largely owing to the vitalistic controversy, the biologists have read Bergson. According to their several dispositions and convictions, they have applauded him, have remained indifferent, or have been repelled by him. Perhaps Bergson's position in the eyes of the specialists, of other than philosophical fields, who have found his doctrine congenial is due primarily to the utility of his work for purposes of vitalistic apologetics. Again, theologians have found him acceptable or unacceptable—but at any rate, many have read his books. Beyond the academic circle, his philosophical fortunes have again been varied. In some groups, his doctrines have been a fashion. With others it has had a serious, if diffused, meaning for their personal views on life. Finally, it seems that certain writers whose social views are called radical by the newspapers, have grounded their doctrine upon Bergsonian ideas as a metaphysical basis.

There are several reasons for this extension of influence. It is unnecessary to dwell upon stylistic attractions. A deeper reason can be gathered by noting the points at which this philosophy makes its contact with the lay mind. If such a manner of statement be permissible, it might be said that the doctrine is up-to-date. It is noteworthy that *Creative Evolution* has been far more widely read than *Matter and Memory* and *Time and Free Will*. In com-

paratively recent times, what may be called the biological point of view has become popular. Certain of its generalizations and its evolutionary standpoint have become part of the general information of the educated. How much distortion of scientific principles this has involved we need not stop to inquire. The consequence is that Bergsonian doctrines possess an interest that arises not so much from its strictly philosophical teachings as from its biological atmosphere, its relation to the mechanistic-vitalistic controversy, and the bearing, in turn, of this upon theological and ethical questions of common interest. In the writer's opinion, these and similar considerations make it difficult to place Bergson's doctrine in the proper perspective. The doctrines concerning vitalism, the evolution of life, "creationism," and much that is therewith connected, are in part corollaries and in part applications and illustrations of the fundamental doctrines concerning duration, space, mind and matter. At least, if we assume the contentions of *Time and Free Will*, and of *Matter and Memory*, a large part of *Creative Evolution* follows without difficulty, as corollary and illustration. And, correspondingly, the central problem of this philosophy lies back of the third book, while in the latter the problem gets tied up more closely with evolutionism and vitalism.

The student will read *Mind-Energy* in the hope of finding an elucidation of difficult points in Bergson's doctrine rather than with the expectation of discovering a new phase or development of this philosophy as a whole. The volume consists of seven lectures and essays, with titles and dates as follows: I., Life and Consciousness (1911); II., The Soul and the Body (1912); III., "Phantasms of the Living" and Psychological Research (1913); IV., Dreams (1901); V., Memory of the Present and False Recognition (1908); VI., Intellectual Effort (1902); VII., Brain and Thought: A Philosophical Illusion (1904). We are told by the translator, H. Wildon Carr, that the essays were chosen by Bergson "with the view of illustrating his concept that reality is fundamentally a spiritual activity" (p. v). We are further told that the term Mind-Energy implies and depends on a metaphysical concept. It is impossible "to conceive an ultimate dualism—mind and matter as the co-existence of two independent realms of reality." The new concept is of a "reality with which life and consciousness are identical, as distinct from the concept of a reality independent of life and conditioning it" (p. vii).

This statement of the thesis of the volume leads one to expect new light upon the central problem of Bergson's philosophy. This problem concerns the relation of life and consciousness, and of life,

consciousness, and matter. The ambiguities in these relations may be set forth as follows. Bergson in general seems to insist that reality is psychical and that it is life.¹ On the one hand, Bergson certainly identifies, in some sense of the terms, life and consciousness. Consciousness is said to be "co-extensive with universal life."² The question is raised: what is the principle "that has only to let go its tension—may we say to *detend*—in order to *extend* . . .?" The answer is that for lack of a better word it is to be called consciousness (*C. E.*, p. 237). Life as a whole is described as a wave which rises, and this wave is said to be consciousness (*C. E.*, p. 269). These, and many other statements, seem to imply that reality, life, and consciousness are one. But, on the other hand, we find statements apparently in conflict with this. In *Matter and Memory* consciousness is said to be a synonym of real action or immediate efficacy. Its rôle is to preside over action and to effect choice.³ Bergson defends the notion of unconscious psychical states, so that while the real is psychical throughout, apparently it is not conscious throughout.⁴ The cumulative past, it is said, presses "against the portals of consciousness that would fain leave it outside. The cerebral mechanism is arranged just so as to drive back into the unconscious almost the whole of the past" (*C. E.*, p. 5). Clearness of consciousness varies with the number and precision of the movements of an organism. Consciousness is "the light that plays around the zone of possible actions or potential activity which surrounds the action really performed by the living being. It signifies hesitation or choice" (*C. E.*, p. 144). These and similar passages apparently limit consciousness to moments of life. It is to be found at the intersection of life and matter. It can not therefore be identified with life. Life is of the psychological order (*C. E.*, p. 257). But within the field of the living we distinguish the unconscious psychical from the conscious.

These inconsistencies are so apparent that they suggest their origin in over-simplification in interpretation. There are various statements bearing on the question and qualifying phrases that need to be noted. It is with "universal" life that consciousness is co-extensive. The principle whose detension produces extension is called consciousness, "for want of a better word." And there is added immediately: "But we do not mean the narrowed con-

¹ *Creative Evolution*, trans. by Mitchell, 1911, p. 257. Hereinafter referred to as *C. E.*

² *C. E.*, p. 186; cf. pp. 257, 270, 362-3.

³ *Matière et Mémoire*, neuvième édition, 1913, p. 153.

⁴ *Ibid.*, p. 152 et seq.

sciousness that functions in each of us. Our own consciousness is the consciousness of a certain living being, placed in a certain point of space; and though it does indeed move in the same direction as its principle, it is continually drawn the opposite way" (*C. E.*, p. 237). Somewhere Bergson points out the difference between the mere absence of consciousness and consciousness present but nullified, suppressed.

Perhaps the way out of these difficulties is to be found in these considerations. Life and consciousness are *by right* coextensive, but are not in fact. The limitations of the organs of consciousness, *e.g.*, the cerebrum, serve to compress consciousness as within a vise, to use a Bergsonian figure. Consciousness is largely nullified, but is present; hence the false appearance that consciousness and life are not coextensive. The consciousness that functions in each one of us, the individualized consciousness, is a limitation of life. The realm of the unconscious psychical is by right conscious. Every organism is, so to speak, as conscious as conditions permit. Life is conscious wherever possible. Perhaps in the distinction between intuition and intelligence (originally interpenetrating in the life impulse), another relevant consideration is to be found. The intuition of duration brings the vision of life in its original character; there is, so to speak, a sort of consciousness appropriate to life itself and of this we get glimpses through intuition. But the individualized consciousness, utilizing an organ of action and choice, characterized by the dissociation of intuition and intellect, and affected by the intellect's concern with matter, is a consciousness limited to the present, constituting the intersection of life and matter. One is reminded here of the distinction between the superficial (spatialized) self and the deeper self of *Time and Free Will*. This distinction between a universal life-consciousness in which all potentialities interpenetrate and the individualized consciousness in which these are dissociated and "spatialized" (and perhaps checked or nullified here and there) seems to be implied when Bergson states that it is consciousness "or rather supra-consciousness, that is at the origin of life. Consciousness, or supra-consciousness, is the name for the rocket whose extinguished fragments fall back as matter. . . . But this consciousness, which is a *need of creation*, is made manifest to itself only where creation is possible. It lies dormant where life is condemned to automatism; it awakens as soon as the possibility of a choice is restored" (*C. E.*, p. 261).

There seems to be, in the books to which we have been referring, no explicit treatment of the difficulty. In the last two para-

graphs several suggestions that may bear on the question have been collated; the use of them that has been indicated is, of course, frankly conjectural, and it is not easy to determine how well it represents Bergson. But so far the results may be summarized as follows: Life is of the psychological order, and is reality, the reality that endures and is creative. In right, life is universally conscious or is something like consciousness; in fact, it is only in part conscious, though in essence psychical. The consciousness of any organism is a residue—it is all that can get through in given conditions. In a sense, the materiality of that life is precisely the suppression or limitation of life, the nullification of consciousness. In so far as consciousness has adopted the habits of matter, life and consciousness are dormant (*C. E.*, p. 267).

Assuming that we have here the direction in which Bergson would meet the difficulty, we find that the difficulty has not vanished, but has changed its form. For now the nullification of consciousness must be accounted for. Why and how is it nullified? Why should life be in right conscious throughout but in fact conscious only in part? Why is consciousness ever dormant? Why does life renounce consciousness, and why does psychical living reality defend in order to extend? Why does consciousness adopt the habits of matter? How is unconsciousness to be explained?

Here our attention must be focussed on the double rôle of matter. Matter is responsible for the nullification of consciousness. Life meets matter as an obstacle. The configuration of matter determines the way in which the original potencies of life shall be broken up and the directions of the evolutionary processes (*C. E.*, p. 257). Matter, again, while an obstacle to life, is also life's materials for creation. Out of matter life fashions its instruments. In order to attain to higher creations, matter is requisite as challenge and as means. When life has fashioned a form, it is limited by that which it has created. It is conscious only in so far as the embodiment it has devised will permit. Intellect develops to master the geometrical order. Matter is consequently the impediment to life and its plastic material.

Granting the existence of matter, this is intelligible. But can we refrain from asking why there is matter at all? This is crucial in Bergson's philosophy. There can be little doubt that matter is represented, on the one hand, as a product of life, of the detension of "supra-consciousness," "universal life," or the fundamental principle of reality. But why the detension? *Matter and Memory* is devoted to the mind-matter problem. It "affirms the

reality of spirit, the reality of matter." It seeks to "attenuate largely, if not to suppress, the theoretical difficulties that the dualism has always raised. . . ." ⁵ Either life and reality are synonymous, and matter arises from life, or life and matter are equally derivative, as conjoint manifestations of the real. The latter position, although suggested in some passages, is hardly consistent with the general tenor of this philosophy. The former position requires that the genesis of matter be accounted for. Here, as already indicated, Bergson is ambiguous. Matter, on the one hand, is the debris left by life, the current opposing life, the inverse of life. Yet matter as obstacle determines the particular streams of development. Matter is on the one hand given a certain independence, a structure and character of its own. The material order of things is the result of intelligence, but materiality is there to begin with. If things are moulded by intelligence, yet intelligence conforms to materiality.

Were Bergson to reply by stating that there is a distinction between life as prior to matter (universal life?) and living forms, and life in its developmental currents opposed by matter and utilizing it, the problem is simply pushed further back. For the arising of matter still remains unexplained.

In short, materiality on the one hand tends to be viewed as a mere negative shadow, expressing life's limitations and sinuosities. On the other hand, it tends to assume a large measure of positive character, and forms the rocks on which the wave of life breaks, defining possibilities of creation. If matter is merely the degradation of life, it is also at the very threshold of life, possessing its own lines of cleavage. It is pure inertia. But the inert nevertheless determines in part the dissociation of the immensity of potentialities which is life. ⁶ "Life as a whole, from its original impulsion . . . will appear as a wave which rises, and which is opposed by the descending movement of matter" (*C. E.*, p. 269). Consciousness "conquers" matter (*C. E.*, p. 267). It organizes it (*C. E.*, p. 26). But then it is there to be conquered and organized. This same difficulty reappears in the passage "from freedom to mechanical necessity by way of inversion." We are told that the "geometrical order has no need of explanation, being purely and simply the suppression of the inverse order" (*C. E.*, pp. 236-7). But must not the suppression be accounted for?

The relation of life and consciousness turns on the relation of life and matter, and the latter relation is unclear. Life and

⁵ *Matière et Mémoire*, p. ii.

⁶ *C. E.*, pp. 98-9; p. 258.

consciousness are neutralized and checked by materiality. Materiality neutralizes and yet seems to be just this fact of neutralization. The discussion of Quality and Quantity in *Matter and Memory* seems to imply that matter is after all just a name for the limitation of consciousness which condenses in one moment a vast series of vibrations. (Vibrations of what?) Again, we learn that there is an order inherent in materiality. It is the intellect itself (*C. E.*, p. 153). But in order that intellect might become distinct, the dissociation of the original potentialities must occur, and this dissociation is in part due to the resistance of materiality. Intellect and materiality appear together, but it is not clear how this can be explained without positing materiality to begin with.

Giving due allowance for the effect of metaphor and the varying purposes of exposition, there still seems to be a genuine difficulty involved. If matter and life appear conjointly from the real, the real is not identical with life and consciousness unless "life" has two different meanings. But if reality is life, the genesis of matter is inexplicable. If, finally, it is claimed that these difficulties arise only because we are putting in terms of intelligence that for which intuition alone is commensurate, we can only ask why such a philosophy should attempt to give the genesis of matter or to account for life's partial surrender of its right to consciousness.

Mind-Energy throws little light upon these questions. The first, second, and seventh essays are those bearing most closely on the question. The other essays deal with more limited topics and are interesting mainly as extensions of general principles. The essay on "Life and Consciousness" is concerned with the "three-fold problem of consciousness, of life and their relation" (p. 3). "Theoretically . . . everything living might be conscious. *In principle*, consciousness is co-extensive with life" (p. 11). But this is not so in fact. The faculty of choice is exercised throughout the scale of animal life, but with increasing vagueness as we approach the bottom of the scale. And consciousness means choice. The question, then, is: Are all living beings conscious, or does consciousness cover a part only of the domain of life? We learn that it is "extremely likely . . . that consciousness, originally immanent in all that lives, is dormant where there is no longer spontaneous movement, and awakens when life tends to free activity" (pp. 14-15). "The variations in the intensity of our consciousness seem then to correspond to the more or less considerable sum of choice, or . . . to the amount of creation, which our conduct requires" (p. 15). "Consciousness and matter appear to

us . . . as radically different forms of existence, even as antagonistic forms . . .” (p. 17). Life finds a way of reconciling matter and consciousness, freedom and necessity. “Placed at the confluence of consciousness and matter, sensation condenses into the duration which . . . characterizes our consciousness, immense periods of what we can call by analogy the duration of things” (p. 21). “. . . Consciousness appears as a force seeking to insert itself in matter in order to . . . turn it to its profit” (p. 22). “We may surmise that these two realities, matter and consciousness, are derived from a common source. If . . . matter is the inverse of consciousness . . . neither matter nor consciousness can be explained apart from one another” (p. 23). “Things have happened just as though an immense current of consciousness, interpenetrated with potentialities of every kind, had traversed matter to draw it towards organization and make it . . . an instrument of freedom. But consciousness has had a narrow escape from being ensnared. Matter . . . bends it to its own automatism . . .” (p. 26). Matter distinguishes, resolves into individualities and personalities tendencies confused in the original impulse of life. “By the resistance matter offers and by the docility with which we endow it, [it] is at one and the same time obstacle, instrument, and stimulus” (p. 29).

The second essay, on “The Soul and the Body,” contains nothing essentially new to readers of the earlier books. We are told that “the invariable contrivance of consciousness, from its most humble origin . . . is to convert physical determinism to its own ends” (p. 44). “The philosopher ought to descend within himself, and then, remounting to the surface, follow the gradual movement by which consciousness detends, extends, and prepares to evolve in space” (p. 46). This materialization or externalization means the “insertion of mind in matter.” The familiar thesis concerning the function of the brain is expounded; the brain “is the organ of attention to life” (p. 59).

The essay on “Brain and Thought” aims to show that the hypothesis of psycho-physiological parallelism involves a fundamental self-contradiction. Realism and Idealism are defined as opposed notation systems, and the thesis is maintained that the hypothesis obtains its plausibility because of a “surreptitious passing from one definite notation-system to an opposite system without giving or taking notice of the substitution” (p. 234).

After the statements given above concerning the ambiguities in the relations of life, consciousness, and matter, it is hardly necessary to comment at length on these essays. In the language of the

translator, the "great factor in evolution is a kind of unconsciousness" (p. vii). "It is not an Absolute . . ." but a "restriction of the consciousness which life possesses in right, a restriction contrived by life in order to fashion the instrumentality of efficient action. . . . The philosophic problem before us today, if we accept the new concept, is to explain the nature and genesis of unconsciousness." (p. viii). But it is precisely the questions of why life foregoes this right, why it restricts consciousness, and why unconsciousness arises, that the book leaves unanswered; and these questions, moreover, arise from the doctrines laid down in the earlier books. If Bergson's statements on these and allied questions are to be not merely formulae, but the outlines of a metaphysics, these questions must be directly faced.

There is, however, a line of thought suggested here and there, and especially in the first essay of the new volume, that tempts the reader to conjecture. One wonders whether Bergson may not be led ultimately to attempt the solution of the problems discussed above by some moral or teleological principle. We may recall Fichte: the final grounds for the existence of the Non-Ego reside in the function of the Non-Ego as conditioning, and affording the opportunity for, moral development. The original *Ansatz* is otherwise unaccountable. Now is matter and unconsciousness to be accounted for by Bergson in an analogous way? Matter as obstacle and stimulus, its existence explained only by its function in forcing life to contrive unconsciousness in order that, by some sort of canalization of the vital impulse, life might attain higher levels of creation—is Bergson's philosophy drifting towards such a view? Consider these passages: "Philosophers who have speculated on the meaning of life . . . have failed to take sufficient notice of an indication which nature itself has given us. Nature warns us by a clear sign that our destination is attained. That sign is joy." Joy, as contrasted with pleasure, indicates the direction in which life is thrusting. Joy "announces that life has succeeded. . . . Wherever there is joy, there is creation; the richer the creation, the deeper the joy" (p. 29). Is this philosophy, like the symphony of Beethoven, to conclude with a Hymn to Joy? "If, then, in every domain the triumph of life is creation, must we not suppose that human life has its goal in a creation which . . . can be pursued by all men—creation of self by self, the growing of personality" (pp. 30-31)? "Automatism and repetition, which prevail everywhere except in man, should warn us that living forms are only halts. . . . The artist's standpoint is . . . not final. The standpoint of the moralist is higher. In man alone the vital movement pursues its way with-

out hindrance, thrusting through that work of art, the human body . . . the creative current of the moral life" (pp. 31-32). "(If) preservation and even intensification of personality are not only possible but even probable after the disintegration of the body, shall we not suspect that, in its passage through the matter which it finds here, consciousness is tempering itself like steel and preparing itself for a more efficient action, an intenser life" (p. 35)? Are these passages merely incidental, or are they indicative of a new stage to come in Bergson's philosophy?

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JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. Janvier-Mars 1921. *Jules Lachelier*. (pp. 1-20): E. BOUTROUX, and *Souvenirs d'entretiens avec Jules Lachelier*. (pp. 21-26): C. BOUGLÉ.—These two papers give a glimpse into the scope and energy of Lachelier's thought, and his finely spiritual humanism, both of which are inadequately revealed in the few pages that he published on "The nature of the syllogism," and on "The basis of induction." In these works he makes a distinction between a "logic of quantity" and a "logic of qualities." He approached metaphysics through logic and psychology, and while accepting the account of the physical sciences as true of a certain aspect of existence, he finds their categories inadequate to describe "necessary being" itself. He thought, "In the last analysis that which is important for a philosopher to understand is that reality is reason." *Les facteurs kantien de la philosophie allemande de la fin du XVIII^e et du commencement du XIX^e siècles* (pp. 27-47) (*Continuée et à suivre*): VICTOR DELBOS.—This is the third of an interesting series of articles on this subject, and describes the relations of Schelling and Hegel to Kantianism. *Études Critiques. A propos de l'évolution de la pensée juridique contemporaine*. (pp. 49-75): G. DAVY.—Contrasts two views as to the function of the judiciary in the development of law. F. Gény, in his theory, has sought to preserve the traditional absolutism of the statute law. Judges are merely "to complete the statute" by interpreting customs in the light of it. Lambert, Saleilles, and others take a more radical position and regard the judiciary as a "supplementary source of law." In fulfilling this function, judges not only interpret, but also constitute custom. Each of these two factions finds the

other "in danger of subjectivism." The author of the article inclines toward the second, the more radical view of Lambert and Salcilles. *Questions pratiques. Faut-il reviser la Constitution?* (pp. 77-98): A. BERTHOD.—A vigorous attack upon the notion that French social problems can be solved through tinkering with the Constitution in the spirit of traditional and political ideas. The author's criticism is directed especially against proposals to increase the power of the President, and make the executive more independent of the legislature. He closes with a prophecy of future political development in the direction of syndicalism. "Syndicalism is the great organic force of the future." *Variétés. Le Meeting d'Oxford.* (pp. 99-134): R. LENOIR.—A rather full account of the Oxford Philosophic Congress of 1920, attempting especially to delineate the characteristics of present-day philosophizing in the various countries, and the consequent values of international cooperation in philosophy. *Supplément. Livres Nouveaux.*

Bridges, James Winfred. *An Outline of Abnormal Psychology.* Second edition, revised. Columbus, Ohio: R. G. Adams Co. 1921. Pp. 226.

Conybeare, Frederick C. *Russian Dissenters.* Harvard Theological Studies, No. X. Cambridge, Mass.: Harvard University Press. 1921. Pp. 370.

NOTES AND NEWS

Professor Alfred E. Zimmern, formerly Fellow and Tutor at New College, Oxford, lectured at Columbia University, November 3, on "Greek Political Thought in Relation to Modern Problems."

A special faculty research committee has been appointed at Oberlin College to cooperate with the National Research Council. The chairman is Professor S. R. Williams, head of the department of physics, and the other members of the committee are from the departments of chemistry, mathematics, sociology, psychology and geology.

The death is announced of Emile Houzé, professor of anthropology at the University of Brussels and at the Ecole d'Anthropologie of that city.

THE JOURNAL OF PHILOSOPHY

GIVING UP INSTINCTS IN PSYCHOLOGY¹

IN the present paper an attempt is made to repudiate the current views of instinct and to suggest a new interpretation of the native equipment of man on a purely objective and behavioristic basis.

INSTINCT IN MODERN PSYCHOLOGY

Although the theory of instincts is as old as the history of psychology, it is only recently that they have been applied so universally in nearly all of the fields of psychology. They were formerly conceived of as a specific faculty possessed only by brutes. People of ancient and medieval times believed that animals lived by instinct while human beings lived by reason. Even up to the middle of the nineteenth century there was little discussion of instincts in human psychology. Darwin and Spencer were, among others, responsible for first calling our attention to the rôle played by instincts in human behavior. But the traditional belief persisted and many writers still held that human instincts were irrational and undesirable forms of behavior and hence must be supplanted by reason. It was J. H. Schneider and William James who assigned to instincts a leading rôle in the determination of human motives. James asserted that man had more instincts than animals and that there was no material antagonism between instinct and reason.

Partly due to the influence of James, the rôle of human instincts turns to the other direction. Not only are instincts no longer looked upon with suspicion, but they are regarded as the mainspring of human behavior. Instinct has become a current fad in psychology. Behavior of man, origin of social institutions, religious motives, and the like—all these different human activities are to be explained in terms of instinct. Recent social unrest and the labor movement are again attributed to the failure on the part of society to satisfy the instinctive impulses. Writers on the psychology of war almost identify the war motive with the herd instinct, the instinct of pugnacity, and other allied instincts. For

¹ The writer is indebted to Professor J. V. Breitwieser of the University of California for his encouragement and assistance in writing this article.

the Freudian psychologists the sex instinct becomes the most fundamental thing in human nature.

Thousands of passages might be quoted from modern literature of psychology to show how much stress has been laid upon the significance of instinct in human behavior. But the following quotations will suffice to illustrate: "The human mind has certain innate or inherited tendencies which are the essential springs or motive powers of all thought and action, whether individual or collective, and are the bases from which the character and will of individuals and of nations are gradually developed under the guidance of the intellectual faculties."² "The behavior of man in the family, in business, in the state, in religion, and every other affair of life is rooted in his unlearned original equipment of instincts and capacities. All schemes of improving human life must take account of man's original nature, most of all when their aim is to counteract it."³

There have been some protests among psychologists against the looseness of the usage of the term "instinct." A reader of modern literature on the subject of instincts will be struck by the fact that no two psychologists will agree upon the definition of and what constitutes human instincts. In spite of all these divergencies, however, there are certain generalities that characterize the current views on instincts.

\ In the first place, instinct is usually defined in either one of two ways: as an innate tendency to action, or as an inherited combination of reflexes. We take Parmelee's as an illustration of the latter: "An instinct is an inherited combination of reflexes which have been integrated by the central nervous system so as to cause an external activity of the organism which usually characterizes a whole species and is usually adaptive."⁴ This view seems most acceptable to the students of animal psychology and behaviorists. The former view is adopted by introspectionalists and students of social psychology who find it more satisfactory to define instincts in psychological than in biological terms. McDougall illustrates this view-point in his definition: "We may, then, define an instinct as an inherited or innate psycho-physical disposition which determines its possessor to perceive, and to pay attention to objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object, and to act in

² McDougall, *Social Psychology*, p. 29.

³ Thorndike, *Educational Psychology*, Vol. I., p. 4.

⁴ Parmelee, *The Science of Human Behavior*, p. 226.

regard to it in a particular manner, or at least, to experience an impulse to such action."⁵

In the second place, instinct is usually viewed as adaptive or teleological; that is, every instinctive performance always tends to accomplish some biological end or to adapt the organism to its environment: thus the biological purpose of anger is "the defense of the organism by removing the offending object"; that of fear is "the defense of the organism by removing it from the offending environment" and so on.⁶ This view is conceded by most of the biologists and psychologists as well.

Thirdly, instinct is assumed either as fixed and stereotyped, or, as capable of modification. The latter point of view is the prevailing one in our modern literature. Psychologists have dealt with the problem of the modification of instincts in various ways: (1) Simply as an increase in perfection of the performance of instinct through practise; (2) that it takes place through changes in the original mode of response or in sensory perception; and (3) that it occurs by becoming integrated into the more complex types of responses.⁷ Hunter emphasizes the point that instincts may be modified, before their first appearance, by experience of the organism or through social influence.⁸ A great many psychologists maintain that instincts appear at certain periods of life and that they may be lost through disuse.

Fourth, instincts are sometimes conceived by psychologists as a specific response to a specific stimulus, or merely as a general tendency to respond to a variety of stimuli. Thorndike and many of his followers are in agreement with the former view; while McDougall, Drever, and many others, subscribe to the latter.

Three general methods are used by modern psychologists for the study of instincts. (1) The genetic method is used for the observation of the reactions of the infant. If certain reactions function from the birth on with a considerable amount of effectiveness, we assert that they are specific instincts. Nursing is perhaps the only instinct which is supposed to appear at birth. (2) In the experimental method, the experimenter observes the organism under certain controlled conditions in which there is no chance for the organism to acquire certain forms of reactions. If, in spite of such prevention of learning, the organism still can perform such

⁵ *Social Psychology*, p. 29.

⁶ W. H. Hunter, "The Modification of Instinct," etc., in *Psychol. Rev.*, 1920, Vol. 27, p. 265.

⁷ See J. R. Kantor's "Functional Interpretation of Human Instincts," *Psychol. Rev.*, 1920, Vol. 27, No. 1, p. 52.

⁸ *Psychol. Rev.*, 1920, Vol. 27, pp. 255-261.

reactions, we conclude that they are specific instincts. Spalding's experiment on the flight of birds and Scott's on the social influence on the singing of birds are examples of the second method of studying instincts. (3) In the observational method, we simply observe the characteristic activities of a race. If certain activities characterize the whole species, they are regarded as instinctive. Thus, the mouse-hunting reaction is supposed to be an instinct that belongs to the cat because it is a characteristic reaction of the whole species.

NON-EXISTENCE OF SPECIFIC INSTINCTS⁹

✓ 1. We have stated that there is no general agreement among the students of instincts as to the number and kinds of instincts. Writers on the subject arbitrarily list them in accordance with their own purposes. If the writer is interested in social psychology, his list of instincts will be based on those reactions that are socially significant. If his interest is in economics or in religion his list will inevitably be a quite different one. As the purposes are varied so the classifications of instincts are unlimited and uncertain.

2. The so-called instincts are in the last analysis acquired trends rather than inherited tendencies. By an acquired trend is simply meant a habitual tendency to act in a certain way under certain conditions. In this connection it must be kept clearly in mind that a trend or tendency to action is different from an actual act; the former is simply a potential behavior which becomes an actual act when the organism is properly stimulated. A behavior tendency can only be developed as a result of the previous experience of the organism—that is, as a result of previous performance of an actual act in the presence of adequate stimuli. ✓ To assume any inborn tendency is to assume a *a priori* relation between the organism and stimulating objects; for every behavior is an interaction between the organism and its surrounding objects. ✓ Such an assumption is no less objectionable than the theory of innate ideas. As a matter of fact both the theory of instinct and that of innate ideas are based on the same conception; namely the conception of a *a priori* relation of the organism to external objects. If it is true that one can not have an idea of a tree before one has actually seen or learned

⁹ The central position of this paper is quite different from that of Professor Knight Dunlap. (Cf. "Are there any Instincts?" in *J. of Abnorm. Psychol.*, 1919, Vol. 14, 307-311.) A careful examination of Professor Dunlap's article will show that he has by no means denied the existence of instinct. What he seems to have objected to is the teleological groupings of instincts which are to him unpsychological. In the present paper we attempt to deny not only the classification of instincts, but their very existence.

about a tree, it must be equally true that one can not have any food trend before one has ever eaten food.

To illustrate how our trends of action are developed let us consider the following hypothetical cases: A new-born babe, when stimulated by a certain object, displays a number of random acts. If some of these acts incidentally result in satisfaction, it is likely to be repeated on similar occasions. If, on the other hand, it results in pain, it is likely to be avoided. Through a number of trials and errors the ill-adaptive acts are eliminated, perhaps inhibited by the emphasis on the favorable reaction, and the adaptive ones are selected. If these selected acts are called forth frequently enough, by similar stimuli or "conditioning" stimuli, they tend to become habitual trends of reaction. If a child is first presented a number of wooden blocks he reacts to them in various ways: he pushes some of them away, pulls some near to him, puts some of them into his mouth, kicks them with his legs, slashes them with his arms, *etc.* In such cases, there is nothing that can be called purposive; all of them are random in character. But, if he incidentally puts some of them together and derives more pleasure from this than from other act (the reason why it gives more pleasure is probably due to certain reflex bodily effects, or it may be due to the fact that, as M. Meyer has suggested, the sensory impression in the pile of blocks is more intensive than a single block; or, it may be due to the approval and encouragement of the attendant or nurse for this particular reaction, the putting together of blocks) he is more likely to react in this way when the blocks are again presented to him on the next occasion. Now, if such a reaction is called out often enough, there is built in the child a habit of putting blocks together, and when this reaction is transferred to other objects (conditioned response) we may reasonably conclude that a rudimentary trend of construction is formed.

The habit of acquisition is generated and developed in exactly the same way. Through imitation or encouragement by persons surrounding him, the babe may form a habit of gathering his play-things together. And when this reaction is later transformed to other objects, there is bred in him a trend-of-collecting reaction.

Again, the so-called moral instinct is a result of the combined influences of various social forces. From birth on the child is subject to social impressions. These impressions and the reactions of the child tend to modify the cortical structure and leave their permanent registration in the cerebral neurons. On proper occasions these cerebral neurons are aroused and the similar reactions are likely to be reproduced by the child. But owing to his inability to recollect

the sources of these influences, he may reproduce them as if they came directly from his original nature. Our conscience is a product of various social sanctions. The authorities are first imposed upon the child from without, but gradually they are transformed into the internal authority, which gives rise to conscience. The transformation takes place so slowly and so gradually that the organism is not aware of the process. A child is repeatedly told not to do a certain thing, and that if he does do it he will be punished by some authority. He refrains from doing it at first merely because he fears the punishment, but finally it becomes habitual through frequent exercise, and he feels his duty not to do such a thing even though there be no threat of punishment for the breaking of the habit at all. In case the habit should be changed, it will involve a deep feeling of uneasiness which is commonly regarded as the awakening of conscience. Many psychologists who observe his behavior fail to trace the sources from which this habitual trend of action is developed and attribute it to an instinct.

Other trends of action are developed in the same manner. If we watch the stages of the development of human behavior closely enough, we shall not have any difficulty to trace the sources of social influences. To call an acquired trend of action an instinct is simply to confess our ignorance of the history of its development.¹⁰ Many psychologists have denied the moral and religious trends as specific instincts. But is there any difference between these and trends such as parental care, sex, acquisition, fighting, self-display, curiosity, etc.? Why can we not on the same basis deny them? Whatever has been denied as an instinct is simply referred back to some other instinct. We are told that there are no religious and moral instincts as such; they are simply a combination of other instincts. But these other instincts few psychologists have ever attempted to analyze further.

3. Psychologists frequently speak of instinct in terms of purpose or teleology. Certain reactions accomplish certain ends. If these end reactions are performed without previous education, they are called instincts. Thus, if a bird has never seen other birds build a nest or has never been taught to build it, the first nest that it builds is considered as the result of an instinct. But an end reaction may involve a great number of mechanisms or subordinated acts most of which may be acquired, and yet all of these acquired mechanisms or subordinated acts may be overlooked because of interest in the end reaction, the "instinct." Walking is usually asserted to

¹⁰ Pillsbury seems to have frankly confessed that we call those responses instincts because they can not be explained by experience. See his *Essentials of Psychology*, 1920, p. 268.

be the result of instinctive action. But how many acquired mechanisms are involved in the walking process? The movements of the trunk, of the head, of the legs and feet, hands and arms, in fact almost every part of the body, must be coordinated before walking can take place. Are we justified, then, in calling walking an instinct while the mechanisms involved in the process are acquired? How many mechanisms or other activities are involved in fighting, in sex, in parental care, *etc.*? How many of these mechanisms are not acquired? We are told that certain instincts can not function until certain mechanisms necessary for these reactions are ready. Sex instinct, they say, is not capable of functioning until the mechanisms necessary for the sexual performance have been acquired. But since these instincts have no ready-made mechanisms of their own, do we have any right to call them inherited responses? Moreover, the same acquired activities or mechanisms may be combined in different ways to produce different end reactions. The constituent acts of the fighting instinct may be identical with those involved in flights; the mouse-hunting activities of a cat may be identical with those involved in play; and do we not sometimes spend the same energy and employ the same mechanisms to construct something as to destroy something? What may sometimes seem to be unlearned activity is a new combination; its constituent acts may be as old as the life history of the organism.

That an instinct has a definite inherited neural pattern few students will deny. But such a conception can not be applied to many of the supposed instincts. General observation tends to show that the so-called instinctive reactions are very variable. Swindle has reported that even nest-building in birds, which is always supposed to be perfect and definite, involves a great deal of variability of response.¹¹ When we can not find any definite responses in instincts, we wonder as to the definiteness of inherited neural patterns. The teleological conception of instinct seems to reduce it to a "trend" or tendency of action, and gives up its neural correlate altogether.¹² But we have shown that the trend is acquired rather than inherited.

4. The methods used in investigating instincts are unreliable. The genetic method seems more advantageous than the others, but it has so far yielded few positive results. What it has found in the young babe is a number of random and unorganized acts. Nothing that we can call a specific instinct has been found to have ever appeared at birth, or even shortly after birth. If the student of

¹¹ *Amer. J. of Psychol.*, 1919, Vol. 30, pp. 173-186.

¹² Cf. E. C. Tolman's "Instinct and Purpose" in *Psychol. Rev.*, 1920, Vol. 27, pp. 217-233, especially page 222.

instincts limits his list to these random and unorganized acts, we shall have no particular objection to his using the term "instinct"; but we do object to the calling of any reaction an instinct if it does not appear at birth or shortly after birth; for, as we shall see, all the activities of the organism in later life are various organized reactions of elementary movements.

The general observation method is altogether inadequate; according to this, when we find a certain reaction which is characteristic of the species, it is an instinct. But a careful analysis will show that the members of the species have similar reactions, not because they have inherited the same instincts, but, rather, because they have inherited the same action system and live in a similar environment. Given an action system in a given situation the two organisms will react in identically the same way, if their past experiences and the physiological states of the moment are identically the same; change the environment and a different reaction results.

Furthermore, social influences also play a very important rôle in assimilating behavior, both in human beings and in animals. They begin to work on the organism from birth on. The results of Scott's experiments on the social influence on the songs of birds have clearly shown that the mere observation of the common types of behavior possessed by the members of the same species can not give us any warrant for the conclusion of the existence of instincts.

Those experiments on animal instincts that have yielded negative results will, of course, discredit instincts; but even those that have yielded positive results may still be subject to criticism. As we have shown, the end reaction may be performed by the organism without previous education, but its constituent acts or the mechanisms employed to produce the result are as old as the life history of the organism. There may be a new combination or a reintegration of old activities under the demand of new environment which tends to produce new result; but there is no new mechanism involved. If the experimenter can prove that birds can build nests without being taught or seeing the same activities of other birds, he must be reminded of the fact that the mechanisms and the subordinated or constituent activities which are combined to produce a complete reaction of nest building are practically the same as those that they have employed in eating, mating, fighting, flight, etc.

We may even question the validity of Spalding's experiment on the flight of birds. He confined newly hatched birds in small boxes so that they were prevented from stretching their wings and were not allowed to see the flight of other birds. These birds were not released until they reached the normal age at which other birds of

the same species began to fly. Spalding found that these birds could fly well upon being released. He thus concluded that flight was an instinct. Such a conclusion is erroneous. That the birds could fly without previous education was rather due to the maturity of action system (wings, and other flying mechanisms). Given a mature action system and given an environmental demand a definite reaction can be fairly predicted. It is no more natural than that birds with well developed flying mechanisms will fly when conditions demand such reaction. In other words, the so-called unlearned acts are not manifestation of innate responses but rather the direct effect of new situations and of the action system which possesses the possibility of such acts. The behavior of an organism must always be described in terms of its relation to the surrounding objects and its action system rather than in terms of inherited responses. The organism possesses no "preformed" reactions any more than germ cells possess a "preformed" embryo. The preconception of instinct has often betrayed the psychologist into overlooking the new environmental factors which are chiefly responsible for the supposedly unlearned acts. Instead of observing and describing the situations which call forth new acts he attempts the discovery of instincts.

This leads us to the rejection of the theory of periodical appearance of instincts. The so-called "delayed instincts" such as the sex and parental instincts, *etc.*, if they could be actually demonstrated at all, must be regarded as a result of changes in action system (for instance, changes in the structure of the sex organs at puberty which are accompanied by new intra-organic stimuli) and changes in social situations, rather than as a result of the manifestations of some mysterious forces. Any change in life situation and action system as effected by maturity of development will inevitably result in a new mode of behavior. And yet how many psychologists have not been at error in attributing it to the sudden appearance of instincts?

5. There have been at least two motives which have led the psychologist to insist on the existence of instincts and their significance in behavior. The first is the notion that every instinct has an adaptive function. Biased by the Darwinian theory of natural selection, students of psychology are apt to interpret every spontaneous reaction of the organism in terms of biological value. They argue that instincts play a very important part in the preservation of the organism and the species. These instincts, because of their adaptive value, are preserved in the race through natural selection and are handed down from generation to generation. This view is both theoretically and practically ungrounded.

In the first place, these supposed instincts might be adaptive in certain generations; but there is no guarantee that they will be adaptive in all generations and under every circumstance. Our environment is constantly changing, and new environment requires new adaptation. If instincts persist from generation to generation, they, instead of being adaptive instruments for racial or individual preservation, will become mal-adaptive in a new environment. This is especially true of those human races whose civilization has been progressing. There, the social situation changes so rapidly that no member of a new generation will have to recapitulate the old way of reaction in which their ancestors have reacted to the former environment. Should we have inherited the same instincts as our ancestors of a few thousand years ago, how awkward we would be in adapting ourselves to modern society.

In the second place, and this is more important, actual fact does not show that every spontaneous response of the young infant is adaptive. On the contrary, our observation of the behavior of the young infant seems to indicate that except those reactions that are connected with vegetative functions, most of the responses that it makes are non-adaptive, or even ill-adaptive. An infant not infrequently reacts positively to those stimuli that are harmful and negatively to those that will do no harm or are even beneficial. It will be very ridiculous to say that the young infant attempts to grasp the fire or a harmful snake, when presented to him, because such a reaction is useful to the organism. The fact that children do survive in spite of many ill-adaptive reactions that they possess, is due to the artificial elimination by society of those harmful stimuli to which they will respond positively. Children are born in a society where the stimuli are so controlled that they have little chance to exercise ill-adaptive reactions.¹³ The period of infancy is a period of helplessness. This is a period that requires social protection. To say that the so-called innate responses of the young human organism have biological value is to overlook the fact that from the moment that the child is born it is taken care of by society.

6. The second motive in the discussion of instincts I wish to combat is the motive on the part of the students of instincts to conceive an instinct as an impulse which furnishes the drive or motive power that leads the organism to action. We quote McDougall again: "The human mind has certain innate or inherited tendencies which are the essential springs or motive powers of all thought and action, whether individual or collective, and are the

¹³ Cf. Watson's *Behavior*, pp. 257-258.

bases from which the character and will of individuals and of nations are gradually developed under the guidance of the intellectual faculties." ¹⁴ "Take away these instinctive dispositions with their powerful impulses, and the organism would become incapable of activity of any kind; it would be inert and motionless like a wonderful clockwork whose main spring had been removed, or a steam engine whose fires had been drawn. These impulses are the mental forces that maintain and shape all the life of individuals and societies, and in them we are confronted with the central mystery of life and mind and will." ¹⁵ Here we are obliged to take sharp issue with McDougall and all of his followers who maintain that all the motives of human activities are derived from instincts. A general observation of child behavior will show that the activities of the new born babe are aroused by external stimuli rather than by internal "drives." Professor Woodworth has well said: "But this assumption of great inertia or inertness of the organism, though it might perhaps have a semblance of truth as applied to adults, is rather grotesque when applied to children—it is to children above all that it must be applied, since it is only young children who are limited to native tendencies, older individuals having developed derived impulses, as indicated in one of the quotations above. If anything is characteristic of children, it is that they are easily aroused to activity. Watching a well-fed and well-rested babe, as it lies kicking and throwing its arms about, cooing, looking here and there, and pricking up its ears (figuratively) at every sound, one wonders what is the nature of the powerful impulse that initiates and sustains all this activity. The fact is that the infant is responsive to a great variety of stimuli and that he is driven very largely by the stimuli that reach him from outside; though, when he is hungry, we see him driven by an inner 'powerful impulse' through a series of preparatory reactions towards the consummation of feeding. In the play of older children, also, it is difficult to find a strong incentive necessary; almost anything can be made play and then become attractive on its own account. It is true, as a general proposition, that as the individual grows up, his actions are more and more controlled by inner drives rather than by the immediately present stimuli; but even adults are less inert than McDougall seems to assume. Their activity is more easily aroused, and requires less interior motive or drive than he supposes." ¹⁶

But in adult life the case is somewhat different. As Woodworth

¹⁴ *Social Psychology*, p. 19.

¹⁵ *Op. cit.*, p. 44.

¹⁶ *Dynamic Psychol.*, pp. 64-65.

has pointed out, the actions of the human adult "are more and more controlled by inner drives." But these inner drives are by no means mystical forces suddenly bursting forth from the organism; on the contrary, they have their history and development: they are products of the constant interaction between the organism and its environment. There is every reason to believe that the motive forces of human behavior are largely shaped by society. Living in a given community one acquires certain motives of action. It is not that the social instincts tend to create society, but that the constant association tends to breed the social trends in the organism. The man is fond of living in a family not because he was born that way, but, rather, because he has lived in that way. No organism can be sociable unless it has social contact with other organisms. Isolate the child from human society as soon as it is born, would it still possess the motive forces that are common to human beings? McDougall and his followers, when they speak of these "powerful impulses" as the foundation of human behavior, forget that they are really dealing with the acquired trends rather than with instinct as they have defined it. McDougall cites from Galton the case which he regards as the display of gregarious instinct in the South African ox. He says, "The ox displays no affection for his fellows, hardly seems to notice their existence, so long as he is among the herd; if he becomes separated from the herd, he displays an extreme distress that will not let him rest until he succeeds in rejoining it, when he hastens to bury himself in the midst of it, seeking the closest possible contact with the bodies of his fellows."¹⁷ McDougall here seems to be dealing with an acquired trend of the ox rather than its innate tendency of gregariousness, for it may be doubted if this ox would still react in the same way even if it had not lived in the herd before. In my own observation of pigeons, I have found that some pigeons, raised in isolation, like to stay aloof from their fellows even when social contact is possible.

One more illustration will make our point clearer. We quote it from C. O. Whitman on *Behavior of Pigeons*. "If a bird of one species is hatched and reared by a wholly different species, it is very apt, when fully grown up, to prefer to mate with the species under which it has been reared. For example, a male passenger-pigeon that was reared with ring-doves and had remained with that species, was ever ready, when fully grown, to mate with any ring-dove, but could never be induced to mate with one of his own species. I kept him away from ring-doves a whole season in order

¹⁷ *Social Psychol.*, p. 84.

to see what could be accomplished in the way of getting him mated finally with his own species, but he would never make any advances to the females; whenever a ring-dove was seen or heard in the yard he was at once attentive."¹⁸

H. Carr and Hunter interpret this phenomenon as the modification of the mating instinct by habit before its first appearance. Such an interpretation is very far-fetched. It presupposes that the pigeon must necessarily possess an instinct to mate with the female of its own species. In our own opinion it is just as natural for it to mate with a female of another species as to mate with one of its own. In such a case no instinct of any sort has been modified. The difference lies only in the fact that this male pigeon was hatched and reared in a different environment, so that it developed a different type of sexual reaction. Whitman has also found that a male pigeon might be paired with another male, and a female with another female. Some male pigeons even refused to be paired with females, while insisting on securing sexual relation with some inanimate object or the hands of the experimenter.¹⁹ All such cases must also be looked upon as normal. There is no sexual perversion on the part of the pigeon. For there is no sex instinct in the sense that it necessarily involves coition between two opposite sexes. The fact that mating always takes place between two opposite sexes of the same species is because the members of the same species always live in the same community where the hetero-sexual habit is normally developed. If, on the other hand, the organism is born and reared with other species, it may develop a habit of mating with the member of that species as we found in Whitman's pigeon; or, even, if it is reared in isolation, it may, in all probability, develop a homosexual or autoerotic habit. But from the standpoint of a natural scientist this involves no sexual abnormality whatever. We must remember that sexual perversion is merely a socio-moral problem. It has nothing to do with the physiological process. The point I am here driving at is this: that all our sexual appetites are the result of social stimulations. The organism possesses no ready-made reaction to the other sex, any more than it possesses innate ideas.

A SUGGESTED REINTERPRETATION OF MAN'S NATIVE EQUIPMENT

We are now in a position to suggest a new interpretation of man's original responses which will be totally different from most of the

¹⁸ Whitman, C. O. *The Behavior of Pigeons*. Carnegie Inst. Washington Publ., No. 257, 1919, p. 28.

¹⁹ The same phenomena have been repeatedly reported by many observers; the writer also had the same observation.

current conceptions of instinct. On account of the lack of adequate experimental data at present, our statement will be bound to be more or less dogmatic. But in spite of this, we shall state our position in objective terms so far as possible.

1. The human infant is endowed with a great number of units of reaction. By units of reaction I mean the elementary acts out of which various coordinated activities of later life are organized. The reaction units are what we find in the child's spontaneous activities and random acts. The new born baby is characterized by being easily aroused to action; it is exceedingly active. It performs a great number of movements, such as those of the eyes, ears, arms, legs, hands, fingers, toes, face, head and trunk, in fact, every part of the body. "Stimulate him in any way and these movements become more frequent and increase in amplitude. Under the influence of intraorganic stimulation as seen in the hyperactivity of the smooth muscle contractions in hunger and thirst, and especially in the hypersecretion of the ductless glands in rage, fear and other emotional activities, these movements become much more numerous. In pain, likewise, the number of movements is increased."²⁰ Such spontaneous and random acts are all that we can credit to the native endowment of man.²¹ These are non-specific instincts, for they are reflexes in character and involve few, if any, complex neural patterns, as opposed to most of the conventional ideas of instincts which suppose highly complex patterns.

2. With the exception of those activities that are connected with the vegetative functions the activities of the new born babe are non-adaptive in character; and while there are certain coordinate reactions such as eye coordination, the sucking reaction, *etc.* which appear at birth or shortly after birth,²² we agree with Watson that in the young organism the random or unorganized and non-adaptive acts outnumber the coordinate and adaptive ones. The general observation of the behavior of the new born babe seems to support this view. Most of the babe's acts are aimless or non-teleological. It responds to almost any stimulus that can reach it; anything that touches its hands it grasps and puts into its mouth. When it is lying on its back it kicks with its legs and slashes with its arms. All these movements have no biological significance; likewise a great

²⁰ Watson: *Psychology*, p. 270.

²¹ The assumption that emotions are inherited responses is very questionable. The writer expects to discuss this problem at length in the near future.

²² It may be doubted, even, that such coordinated acts are at all genuine innate responses. Habits begin to be formed at birth, or even in the embryo. There is good reason to believe that these coordinated responses are the earliest habits of the organism.

many other reactions. The child must have gone through a number of failures before it can begin to stand, to crawl, or to walk. The psychologist has failed to observe how difficult it is for a child to coordinate its movements in order that it may be able to stand, crawl or walk, when he insists that neural patterns for these reactions are inherited.

3. These reaction units are the elements out of which all the coordinated acts of the organism are integrated. Perhaps a simple type of the integration of reaction units can be illustrated by the hand-eye coordination. Watson found that the beginning of reaching for the candle, which was presented before a babe, was between the 120th and 130th days. A somewhat more complex integration in the child is found in walking which involves the coordination of the movements of the legs, feet, head, trunk, visual organs and some other parts of the body. The next more complex organizations may be found in reading and writing. The former involves the coordination of the movement of the eyes, vocal cords, lips and tongue and other related parts. The latter involves the coordination of fingers, hands, arms and eyes, and the head and the trunk which maintain the general position of the body. In playing piano, the coordination is still more complex than any one mentioned above. Here we have the movements of the legs, feet, hands, arms, general bodily position and the auditory and visual organs, and in case singing is accompanied we have to add the movements of vocal apparatus, lips, and tongue—in fact, the implicit vocal movements are involved even when the player is singing silently.

Not only the elementary acts can be integrated into a single act, but the organized acts are also capable of various combinations. A single case will be sufficient to illustrate the point. A normal child of six or seven years old has a considerable degree of coordination in walking and in the movements of various other parts of the organism. But if he is to be taught the dancing lesson, a new coordination is needed. The steps of his feet must be coordinated with his hearing, the movement of the body must follow his steps and so on. Such an act is not a direct integration from the original units of reaction but a recoordination, the elements of which are more or less coordinated in themselves.

4. There are several characteristics in the integration of the reaction units into coordinated acts which must be emphasized here.

First. The process of the integration always involves selection and elimination. We have stated that most of the acts of the new born infant are non-adaptive. What we mean to say is that in the early childhood there are few appropriate movements. The appro-

priate acts of the child can only be secured through a number of trials and errors. Natural selection is always operating in the random acts of the babe. But there is another factor of selection which is more significant from the standpoint of education. It is a selection controlled by society. A child is very likely to make indiscriminate reactions. We have noted that the child not infrequently responds positively to harmful stimuli and that in order to protect the child from being injured by such reactions, society removes the stimuli that will call forth ill-adaptive reactions. The educational process in one sense is to control the environment in such a way as to eliminate the possibility of wrong reactions of the child.

In this connection, there is another important function of education. We saw that the process of acquiring adaptive reaction by trial and error or through natural selection is very slow and laborious. In primitive society where life was very simple, where the demands of society upon the individual for right actions were far less complicated than they are now, we might leave him to adjust himself without the assistance of education. But since the modern social structure is so complex and the social demands are so great a child, if he is left alone, may fail to fulfill the social requirements. Furthermore, if the learning process is not shortened, the time and energy of the individual will not be sufficient for him to acquire all the necessary social adjustments. Herein lies the fundamental justification for education. The fundamental motive of education is to assist the individual to adapt himself to society in a most economical and effective way. Through instruction, useless and ill-adaptive movements in learning may be avoided and the appropriate acts be quickly performed. The chief function of education, in other words, is time-economy and labor-saving; the main problem in educational psychology is the problem of efficiency of learning.

Second. If the stimuli that have aroused certain responses in the organism appear so often that the bond between the stimuli and responses becomes fixed, we have specialized responses or what is ordinarily called habitualized acts. Our habitual acts are stereotyped acts that have been integrated from the elementary acts. In general, the oftener the same stimuli appear the more specialized the reaction to these stimuli becomes and the more rigid and fixed is the habit.

Third. On the other hand, on account of the demands of novel environment, our habitualized activities may be reorganized so that the organism will be enabled to adjust itself to the new situation. It is only a truism to say that there are different possibilities of reorganization of early acquired habits in different individuals.

There are individuals whose habits are so fixed and stereotyped that they are almost incapable of reorganization of any sort. Individuals of this kind often fail to adapt themselves to novel environment. On the other hand, there are individuals whose habits are so plastic that they are easily reintegrated under the demands of new situation. On the whole, the plasticity of habits depends on the richness of experience of the organism. The more experience or the more variety of stimuli it has, the less fixed and rigid are its organized reactions.

This leads us to an emphasis on the importance of liberal education. Liberal education means from the standpoint of psychology that kind of education which provides great varieties of experience for the individual in such a way as to enable him to adapt himself readily to novel situations. The training of adaptability is more important than that of specialization in education. I do not mean to minimize the importance of specialization, but in modern education there is great danger in over-emphasizing this phase of training. Vocational education is often secured at the expense of general education. We must not forget that the more specialized the individual is, the less adaptive to novel environment will he become.

Fourth. (And this is simply to restate the chief element of our contention in this paper.) The type of integration of the elementary acts into complex reaction systems largely depends on the nature of the environment. Our daily acts are organized as a result of environmental demands; our trends of actions are products of the constant interplay between the organism and environment. If a man is born and raised in a highly civilized community, he may acquire a powerful trend of parental care which he extends to humanity as a whole and even to animals. On the other hand, if he is brought up in a savage tribe where the custom of cannibalism prevails, he may acquire a habit of taking pleasure in killing. At times the same native equipment may be developed into compassion, while at others it may be developed into cruelty. The tender-hearted Buddha differs from a bloodsucker not so much in his native constitution as in his acquired characteristics. This principle also holds true of animals. The passenger pigeon when hatched and reared with the ring-doves will refuse to mate with the female of its own species. The goslings, when reared away from water will refuse to go to water. Chickens, when hatched and reared in the absence of a hen, may follow any moving object and refuse to follow any hen. We need not assume that the instincts wane or are modified in order to explain such phenomena. The theories of waning and modification of instincts have no scientific ground whatever.

learned

Psychologists have often been misled by the assumption that certain reactions which are common to the species must belong to the category of instinct while deviation from any such common reactions must be regarded as the waning or modification of instinct. If it is realized that the organism possesses no specific instincts whatever and that different types of behavior simply result from different environmental demands, these two theories will at once become superfluous.

The fact that the nature of environment determines the organization of reaction systems accounts for both social solidarity and individual differences in occupations and in types of behavior.²³ In every society there are certain kinds of social stimulation that are common to all members of the group, a fact which makes similar reactions among the members possible. On the other hand social influences are so complicated and so varied that no two individuals will happen to live in an identical situation. Different experiences and different training tend to produce individuality.

There are more possibilities for the organizations of the original units of reaction into a complex system, than society can supply stimuli. Man possesses more latent potentialities than he has actually realized. On the other hand, society furnishes more opportunities for individual development than the organism can make use of. One individual can not at the same time be a politician, a scientist, an educator, a poet, carpenter, a miner and fruit raiser. When the development of the individual reaches its limit, it becomes very hard for him to acquire any new organization of reaction systems. Everyone realizes how difficult it is for an individual to change his vocation or to acquire a new skill after the age of thirty or so, in spite of the fact that he possesses all these possibilities.

Fifth. That the original units of reaction are the elements out of which our organized activities are directly developed is more true of children than of adults. In adults the habit formation consists more in the reintegration of the old habits than in the direct integration of the original elementary acts. The development of human behavior is from simple to complex, from unorganized to organized. Human reaction systems are always organized in hierarchies; each new habit utilizes some of the previously formed habits; we build our more complex organizations of reaction system upon the simpler ones. In other words, the units of the acquisition of new habits in later life are not the original units

²³ Individual differences that are due to heredity are simply the differences in the degree of latent possibilities in the integration of the elementary acts into various complex reaction systems. The theory of native capacities as advocated by Woodworth, Thorndike and others is as untenable as that of instincts.

of reaction but the earlier acquired habits. We never learn how to walk in order to learn how to dance, we never learn how to coordinate the movements of eyes and hand in order to learn how to use a typewriter, for all such simpler coordinations have been acquired in early childhood; the only thing we have to do in learning these things, to repeat, is to organize these simpler ones into a more complex system. Watson says that it takes the child a longer time to learn to drive a nail well than it takes an adult engineer to build an airplane. This is literally true, for in the child the systems of reaction are so simple that little can be utilized in new learning, while in the adult highly complex systems of organization have been achieved that can be made use of in a new acquisition.

The development of human behavior is essentially the increase of complexity in the organization of reaction systems. This fact has been overlooked by most geneticists. Genetic psychology in the past has been largely devoted to the study of the periodical appearance of instincts. The geneticists have failed to analyze the complex forms of behavior into their simple elements. To be sure, they investigate the different stages of development. But they have seldom scrutinized how each stage is related to its previous and subsequent stages. They have occasionally noticed the spontaneous and random movements in the new-born babe, but have never realized that all the complex activities in the adult can be analyzed into such simple acts; they tell us rightly or wrongly that at certain ages the child displays certain types of behavior, but how they come about they have failed to investigate altogether. Such failure is, of course, partly due to lack of adequate experimentation but more largely to the preconceptions of instinct, especially that of the periodicity of instincts. Indeed, genetic psychology in the past has practically failed and the need to start it all over again on a purely objective and experimental basis is now imperative. To do so we must first discard all presumptions of instinct altogether and study the development of behavior in terms of increase in complexity of the organization of reaction systems as they are integrated in various ways either directly or indirectly from the original units of reaction. And, further, greater attention should be paid to the study of environmental factors which affect the organization of the reaction system; we should look to the specific stimuli or situation rather than the instincts for the explanation of the development of behavior. It is no small handicap to the genuine understanding of the development of behavior to assume instincts existing as specific faculties in the organism.

5. There are a number of elementary acts that are not integrated with other reaction systems and remain relatively independent acts throughout the life of the organism. They may respond to stimuli independently of other organized reactions which concern the organism as a whole. Such acts belong in the categories of reflexes, such as knee-jerk, winking, sneezing, yawning, etc.

By way of conclusion, we may state that such a theory we have so far advanced is not an altogether new one. The importance of the spontaneous and random activities of the young organism has been duly emphasized by Professor Watson.²⁴ But we can not agree with him that, besides the activities of this sort, there is another group of innate reactions or instincts. In fact, the results of his investigation on the behavior of the new-born babe do not indicate any appearance of specific instincts, except a vast number of random movements. Having failed in discovering specific instincts in the young babe, he is forced to accept the theory of temporal order of appearance of instincts which has not any scientific proof and has been rejected altogether in this paper. Further, he has done violence to his own definition of instinct when he accepts many of the conventionally listed instincts. For, as we have seen, the responses of these instincts involve a great deal of variability and it is very hard to find in them any definite inherited neural patterns which is his essential conception of instinct. We are, therefore, obliged to repudiate all his theories of instinct. For we have found that the random or unorganized acts in the young babe are sufficient to account for all complex and organized forms of behavior in adults, and that it is not only superfluous but harmful to our genuine understanding of human behavior to assume the existence of any specific instinct.

Note. This article was placed in the hand of the Editor in February, 1921. After several months an article, entitled "The Misuse of Instinct in Social Sciences," by L. L. Bernard, appeared in the March number of *Psychological Review* (1921). While my position regarding instinct is different from that of Bernard there is some relation between these two articles. I wish to call attention to the fact that my article was accepted by the Editor before I had access to Bernard's article.

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CLASSICISM AS AN EVANGEL

"THE knowledge of what is possible is the beginning of happiness." This sentence when reflected upon will start in different minds trains of thought resulting in contrary conclusions:

²⁴ See *Behavior*, Chaps. 4 and 6, and *Psychology*, Chaps. 7 and 8.

opposed to one another alike in their ideas of happiness and of knowledge.

To some the saying will convey an intimation that things "as they are" are things with possibilities; that the world as it is at this present point of time is not a closed world but a world with unrevealed possibilities; that what is eulogistically called "the order of the world" is still forming. Hard upon the heels of this surmise, there will follow a leap to the thought that happiness, our happiness, is to be found in living in the realm of these possibilities, in endeavoring to discover them and to employ the fixed and stable elements in things as they now are as means for the realization of possibilities. In some way, vague or defined, there will be an identification of happiness with aspiration, with endeavor, with energy spent in embodying possibilities in the actual, thereby transforming the actual. This attitude fixes the place of knowledge in the good. Insight into actuality and its possibilities contributes to happiness because it is an integral part of the process of transformation, a part which is more than a means because it is such an indispensable means.

Other persons will associate the meaning of the sentence with *our* possibilities rather than with the possibilities of things. The lesson of the sentence is then one of limitation, of check upon aspiration and desire. The source of unhappiness is romantic aspiration to escape the bounds which are set by things as they are; the beginning of happiness is to acknowledge the inevitable, to identify our thought and choice with the fixed order of the universe. Renunciation of the extravagant in will and fancy, adoption of the order of things as the order of life: there lies the key to a happiness which is rational, mature, sane. This view also has its implication for the office and place of knowledge. To overpass the limits of the actual is impossible; to strive to do so is the petulance, the untamed folly, of childishness. In renouncing this impossible good, we attain to the good of insight. The reward of understanding things as they are gives the joy of the only mastery within the power of man; we attain peace through the calming of troubled aspirations for the unreal and impossible and become sharers in the delights of visions of eternal and untroubled truth. To know is man's highest good. In terms of the history of thought, with the Spinozistic conformity of desire and will to the eternal order comes the Aristotelian divine bliss of the life of theory.

To one whose instincts and habits spontaneously lead to a conception of possibilities on the basis of possibilities of things, this latter interpretation seems rooted in the subjective, or, to speak

frankly, in the egoistic. It indicates a subconscious determining concern with one's self. It is a reversed romanticism. Romanticism avowedly begins with the life of emotion and desire set over against the structure and system of the world. Out of the material of fancy and desire it builds another world which it asserts is the truly real world because it is the ideal world. One who becomes aware of the insolent egotism, the unbridled immaturity of such an attitude, and who contemplates the havoc which has been wrought by neglect of the conditions of life and action, naturally turns to contemplation of the order of the world. This order fixes the limits of legitimate imagination and will; its contemplation secures attainment of insight in a sure and elevated happiness.

Such an one becomes, in short, a classicist. Measure, order, proportion, limit, is the nature of the world, and reason is the voluntary perception and intelligent adoption of measure as the rule of life. Instinct, fancy, aspiring desire, is the great enemy. But unconscious antique classicism was a spontaneous response to the conditions of life in days when things seemed to have no possibilities except such as were realized in the cycle of nature without the participation of human choice and effort. It was rooted in a view of finite, finished possibilities of the world. It did not spring from any consideration of our possibilities. It was innocent of the thought of the claims, limited or unlimited, of the self. To recover such classicism by beginning with the thought of the possibilities of desire and choice, with the thought, disguised, of the ego is impossible. The attempt violates the principle of regard for conditions, for structure, which is the essence of classicism. For it ignores the conditions under which the classic spirit was a spontaneous response to nature itself. For this reason, I have called modern class-conscious classicism a reversed romanticism. It is evangelical, not spontaneous, for it is preoccupied with salvation. The fact that its conception of salvation is reasonable while that of romanticism is fantastic does not alter the preoccupation. It only changes the spirit of ancient art into a gospel of the estheticism of secluded knowledge.

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REVIEWS AND ABSTRACTS OF LITERATURE

Morale: The Supreme Standard of Life and Conduct. G. STANLEY HALL. New York: D. Appleton & Co. 1920. Pp. ix + 378.

The substance of this book was given in weekly lectures in Clark

University during the year 1918-19. About one-half of the chapters interpret the psychology of morale, as observed during the war; the remainder, with occasional reference to morale, discuss many of the more important moral and social questions of the present time. The date when the book was written probably explains the sweeping claim of the sub-title, repeated in the first chapter; important as was the part that "morale" played in the war, the author might be less likely to-day to designate it as the supreme ethical standard to which conscience, duty, justice, happiness and other values of traditional ethics should be subordinated.

The portion of the book which will probably prove to be of most permanent value (chapters II-XII) consists of a very clear, concise, and virtually contemporary report of the problems of the army and the nation during the war, interpreted by an eminent psychologist, with frequent citations of the literature of the subject. The factors analyzed include: food, rest, and sleep; the conquest of fear; the rôle of anger; the attitude toward death; the function of humor and diversions in general; of placards, slogans and decorations; sex; the influence of good women; news and propaganda; espionage; personnel work and mental tests; rehabilitation of the wounded; means used for developing morale in training camps; and the influence of ideals. The general reader who desires accurate information on these topics will enjoy the book, which will also be of lasting worth to the psychologist and the historian.

The remainder of the book discusses labor, prohibition, profiteering, feminism, education, statesmanship, radical agitation, and religion. Dr. Hall's frank statements of his personal opinions on these topics are suggestive and thought provoking. For instance, while he praises the present activity in applied psychology, he is apprehensive that the psychology may become merely ancillary to business, and substitute *Kultur* for culture (pp. 167-172, 279, ff.). He believes that more light upon the basal human impulses in modern social and economic life can often be found in the more concrete reports of writers like Carleton Parker and Ordway Tead than in more scientifically psychological works (pp. 202 ff.). He thinks that the sudden advent of prohibition is responsible for much industrial restlessness, and that the remedy is to be found in new and legitimate modes of excitement and conviviality. He repeatedly urges that more serious and sympathetic study be given to the conditions that give rise to radical propaganda, in order to remedy them. "The ultimate goal of the whole feminist movement is more independence, initiative and control [of woman] over her reproductive and domestic life" (p. 254).

Though commending eugenics and birth control, he thinks that the time has not yet arrived for any general propaganda in favor of contraceptive methods (p. 256). He believes that divorce by mutual consent should be legally permitted (p. 269). In education he says more emphasis should be given to interest—a familiar saying—and also to mechanical drill and discipline (pp. 273 ff.)—an injunction not so common. No one's higher education is complete until he has done an independent bit of research (p. 282)—welcome words in these days when many complain of Ph. D. requirements. We need a new religion, free from dogma, that will hearten us to withstand “the most subtle and inveterate foe of all civilization, *viz.*: the degeneration that comes from selfishness” (p. 368).

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Proceedings of the Aristotelian Society, 1919-1920. New Series, Vol. XX. London: Williams and Norgate. Pp. iv + 314.

This volume of *Proceedings* offers rather less than usual. The papers are varied in subject, but seldom profound in treatment. Three symposia are reprinted here, two of them from the Oxford Congress of September, 1920, the other an Aristotelian Society debate, but all three rather futile. The Oxford Congress symposium on “The Problem of Nationality” is readable, however, with the paper by M. Marcel Mauss probably the best.

The single papers are as follows: Mr. James Ward's presidential address is his customary attack on the Absolute. A paper entitled, “The Nature of Inference,” by Mr. Gerald Cator, contains some sugar plums of epigram in a pudding of confusion. “The Philosophy of Giovanni Gentile,” by Mr. J. A. Smith, accomplishes its purpose of exciting interest in Gentile. The author describes Croce as approaching philosophy through a consideration of human history, Gentile through the theory of education. But the result is not so very different, for the history of the human mind is for Gentile the history of its education, and that in turn is identical with the history of philosophy, which is philosophy itself. It would be of interest to compare Gentile with John Dewey's conception of philosophy in his *Democracy and Education*. In the next paper Mr. Alexander Shand criticizes Drever and McDougall, and maintains that impulse, instinct, and emotion should be distinguished, and not identified. Shand is always worth while. Mr. Morris Ginsberg contributes a criticism chiefly of Bosanquet's theory of “the general will.” Mr. Clement C. J. Webb, in a

brief paper, maintains the Kantian view that obligation is the fundamental ethical concept. The study made of Buddhist metaphysics by Mr. Wm. M. McGovern is too brief and crowded—an expansion of it would be worth while. Mr. Albert E. Davis examines again the ontological proof of Anselm, and seems at first on the verge of a new contribution. But the paper rambles on at great length, with little final result except to insist that Anselm was an epistemological dualist and never confused existence in thought with existence in fact. The paper on “Memory and Conation” by Miss Beatrice Edgell collates without illuminating the views on conation of Ward, Semon, and Freud.

Two papers seem to the present reviewer to stand out from the rest. One of these is “Mysticism True and False” by Mr. W. F. Geikie-Cobb. This is a really sympathetic and eminently fair treatment of mysticism. The mystic is not seeking to know, he is seeking to be and to feel. Mysticism does not imply pantheism, nor need it condemn all distinction and difference as illusion. While he believes he has a short road to the heart of things, nevertheless “no mystic has ever claimed that, discursively or intuitively, he cognizes reality in its fullness.” It is good to find a paper on mysticism which meets criticisms fairly, and is neither ecstatic nor patronizing.

The other paper is by Mr. G. E. Moore, and is entitled “External and Internal Relations.” It is as tireless in distinctions as usual with this author, and makes as little apparent progress. None the less it is full of significance to those who have followed the development of English neo-realism, for it represents a considerable change of attitude since the days when Moore, like Mr. Bertrand Russell, stood where Mr. Cator stands in the present volume, saying with Hume, “The mind never perceives any necessary relation between distinct existences.” Mr. Moore adopts the notion of strict implication such as has been defended in this country by Professor C. I. Lewis, though he expresses a doubt whether Lewis goes as far as he does. He characterizes the opposing view of implication, long held by Mr. Bertrand Russell, as “simply an enormous howler,” though “a good many people have been led to suppose that, since Mr. Russell has said [it], it must be true.” The distinction between Russell’s “material implication” and Moore’s strict “entailing” is the distinction between a factual, possibly accidental, conjunction, and a necessary union. Thus among the relations that a given thing possesses, some are such as it need not necessarily possess, but others it could not have lacked and still be what it is, whether in individual identity

or in qualities. The contingent or happen-so relations are external relations, the necessary and indispensable relations are internal. New realists may well ponder what Mr. Moore's revised theory "entails" for the reconstruction of their own position.

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JOURNALS AND NEW BOOKS

JOURNAL OF EDUCATIONAL PSYCHOLOGY. April 1920. Vol. XI, No. 4. *Mental Tests as Means of Selecting and Classifying Students* (pp. 181-192): AGNES L. ROGERS.—A series of mental tests was given to 98 seniors and 182 freshmen at Goucher College. The three purposes were (1) to determine their reliability as measures of mental capacity for college women, (2) to weigh their worth as indices to future academic success, (3) to establish in the event of their proving satisfactory adequate standards both for the selection of candidates for admission and for the classification of entrants in the various divisions of the larger courses in accordance with capacity. The tests gauge predominately innate intellectual dexterity, whereas college marks rather furnish measures of progress in learning, into which there enter to a very great extent emotional and moral elements. The emphasis is on speed rather than on difficulty and in so far as this is true they fall short of providing an ideal gauge of intellectual power. Certain capacities essential in academic work are undoubtedly measured by the tests and in spite of their defects they can be of service in two respects. First, they are superior, even if only slightly so, to haphazard guessing as a basis for allocating students to sections on grounds of mental capacity. Secondly, they are of value in determining a lower limit, which when coupled with all the other information about an applicant to which the college has access, can reinforce a judgment as to fitness to undertake a college course. *Students' Methods of Studying a certain Subject—Psychology* (pp. 193-206): L. W. WEBB.—A questionnaire concerning the methods of study in psychology was sent to 275 students in the elementary course in psychology in Northwestern University. The conclusions are that the majority of the good methods for daily use are not found to be among the study habits of the majority of students. Better habits of study are employed by the larger number of students in preparing for an examination than in preparing for the daily class exercise. The general tendency of the majority of students is to practise poor methods of work in the study problems. *An Edu-*

ational Survey Test (pp. 207-223): RUDOLF PINTNER and FLORENCE FITZGERALD. —The problem is to devise a shorter educational test covering the main subjects of instruction than can be given in 30 to 40 minutes. Recognizing that 5 to 8 minutes' work on each subject can not give us an accurate measure of an individual's attainment in each subject, such as might be obtained by devoting 30 to 50 minutes to each subject, there is, nevertheless, great practical need of a short scale covering the chief subjects that will give a fair measure of the general attainment of the individual and a good measure of the group. Exercises were selected from the standard educational tests and measurements. The separate tests in the scale are compared with the corresponding long scales and the correlation coefficients range from .41 to .68. When the total result of the short form is compared with the total results of the long scales a coefficient of about .786 is obtained. The shorter form saves eleven hours' time for every class of 30 pupils. The economy of cost is evident also. *Results of the Bell Chemistry Test* (pp. 224-228): THOMAS H. BRIGGS. —The test was given to 38 pupils in two schools. A scoring sheet is also appended. *Editorial. Notes and News. Publications Received.*

Hume, Robert Ernest. *The Thirteen Upanishads*. Translated from the Sanskrit, with an outline of the philosophy of the Upanishads and an annotated bibliography. Oxford: University Press. 1921.

Johnson, W. E. *Logic*. Part I. Cambridge: University Press. 1921. Pp. xl + 252.

Kallen, Horace M. *Zionism and World Politics*. Garden City, N. Y.: Doubleday Page & Co. 1921. Pp. 245. \$3.50.

Leuba, James H. *The Belief in God and Immortality: A Psychological, Anthropological and Statistical Study*. Second edition. Chicago & London: The Open Court Publishing Co. 1921. Pp. xxviii + 333. \$2.50.

Spirito, Ugo. *Il Pragmatismo nella Filosofia Contemporanea*. Firenze: Vellecchi Editore. 1921. Pp. 222. Lire 10.

Renda, Antonio. *La Validità della Religione*. Citta di Castello: Il "Solco," Casa Editrice. 1921. Pp. 271. Lire 10.

NOTES AND NEWS

Dr. F. C. S. Schiller, President of the Aristotelian Society, delivered the inaugural address on October 10 on the subject of

"Novelty." Novelty, he declared, is an all-pervasive psychical fact. Every mind has a history which never quite repeats itself and this history affects its apprehension. The same is true of all reality: its flow sets in one direction only and is irreversible. The past is irrevocable and the future never exactly calculable; history is, therefore, always relevant to essence. The method of history at first sight seems to imply a denial of novelty. The new is *explained* by taking it as a case of the old. It has to be taken thus to be controlled. But the abstraction is essentially a fiction and leads to a subsequent recognition of the new and a modification of the old "law" by the new "case." Thus the negation of novelty in scientific method is only provisional and methodological. The philosophic sciences also are not really pledged to a different procedure. Logic must recognize novelty, if reason is not to be divorced from reasoning and reasoning to become unmeaning. "Novelty or Nullity" is the first law of thought, if thought is admitted to presuppose thinking. Metaphysics has ancient prejudices against novelty, as involving *change*. It assumes that Being must be a constant quantity. Yet its notion of Being is only a hypothesis and abstractly there are the possibilities that it may increase or diminish. Empirically the former seems exemplified in psychic being, the latter in physical. The existence of novelty means creation out of nothing. This conception has long been among the paradoxes which the Christian religion affirmed in spite of philosophy and science and language. Yet it has religious value, for a world of which the being is constant can not change for the better because it can not change at all. It is eternally as good as it can be, also as bad. Valuations are not only facts themselves, but the ultimate determinants of all the facts we recognize.

The next meeting of the New York Branch of the American Psychological Association will be held in Schermerhorn Hall, Columbia University, on November 28th at 8 P.M. Dr. David Mitchell and Dr. Rudolph Pintner will speak.

THE JOURNAL OF PHILOSOPHY

THE FUTURE OF PHILOSOPHY AS A UNIVERSITY STUDY

AT a recent discussion of the merits of a certain candidate for an important academic position the writer mentioned as one of his qualifications that he was a man of a philosophical temper of mind. At this one of those present, a distinguished scientist of large experience in university administration, was seen to smile and look knowingly at his colleagues. On observing the look of surprise which this attitude called forth in the speaker he leaned over to him and whispered, "Perhaps you don't realize it, but among us such a description would hardly be taken as a recommendation."

Am I wrong in thinking that this attitude is typical of an estimate of the value of philosophy as a university study which is far more widespread than philosophers like to think? Not all devotees of the physical sciences are so outspoken as Ray Lankester when in his preface to Mr. Hugh Elliot's book on "Modern Science and the Illusions of Professor Bergson," he frees his mind as to "those who in a thoroughgoing way occupy themselves in collecting and comparing and classifying all the absurdities which have been put forward as 'metaphysics' or 'metaphysical speculation.'"¹ But it is not too much to say that to many serious men of science the group of studies with which the philosophical department of our universities is concerned is regarded as a luxury rather than as a necessity, legitimate for those who have the time to give to such things but not worthy any longer of the structural place in the organism of university study which in their introductory lectures as to the nature of philosophy all philosophers with one accord claim for it.

It would seem worth while, therefore, to raise again the question as to the place of philosophical study in the modern university and to ask ourselves what we may fairly expect it to do for us and how far this expectation is justified by its present performance. The discussion at the last meeting of the Philosophical Association showed that, in spite of Professor Woodbridge's emphatic disapproval, not a few philosophers feel the need of redefining their work in its larger relations and demonstrating if they can to a world whose conscience shows it to be singularly callous on questions of unemployment, that they at least have a right to exist.

To this larger question I propose to make no direct contribution.

¹ Pp. vii, viii.

I shall content myself with one particular phase of it, namely, that which concerns the future of philosophy as a university study. Why is it not more highly esteemed? Who is to blame, the students or the professors in other faculties or the teachers of philosophy themselves? Or is the present situation due to a complex of different factors, each of which has contributed its part?

Into the diagnosis of the case I do not propose to enter at length for it appears in the last analysis to be a very simple one. It is one more case of specialization run to seed. Philosophy, as its name implies, started out as the quest of wisdom. It was the attempt to give a comprehensive survey of the great questions that affect human life and destiny, to appraise their relative importance and as a result of this analysis to determine the standards which should regulate conduct. This original conception which makes philosophy a cultural study concerned with meanings and values has been superseded for the most part by another which makes it a science among sciences, namely, one part, not the most interesting by any means, of the history of human thought.

It is not hard to understand how this has come about. Two different interests which the philosopher shares with other men have gained an undue control of his time and thought and diverted his energies to a greater extent than he himself often realizes from what ought to be his central interest. We may call these the trade interest and the game interest. First of all, the trade interest. Like all professionals who live by their trade the philosopher feels the need of showing that there is some particular thing that he can do that nobody else can do, in order to justify the salary which he draws. But wisdom is too subtle and evasive a thing for any man to claim a monopoly of it and in these days of multiplying sciences the man who would include all knowledge in his field would find himself a candidate for an insane asylum rather than for a professor's chair. One after another the special subjects which made up the stock in trade of the older philosophers have set up in business for themselves, religion, politics, history, law, the study of the physical universe itself in all its varying manifestations, most recently psychology. Logic, ethics and esthetics still remain but they, too, have given warning and may depart at any moment. Wherever he goes the philosopher finds the field already tenanted. What can he offer to justify his existence and prove his right as a man of science to sit in the councils of the scientists? The answer which the teachers of philosophy have given is as original as it is inevitable. They offer as their special subject matter the history of philosophy itself. Grant, if you will, that the scientists have more and more been elbowing the

philosophers out of their jobs. Let us tell in detail the story of how the elbowing has been done and make of the telling of it a job of its own for which we can claim right of way over all competitors. So the history of philosophy, in the sense of a detailed study of the successive formulations of the different problems with which the philosophers of the past have been concerned, has become the special stock in trade of the professional philosopher, and when men speak of philosophy as a university study, it is this of which they think first of all.

And the other interest which accounts for the present attitude toward philosophy I have called the game interest. It is an interest that we all share to greater or less degree, but which in the philosopher takes a peculiar and original form. It is the interest of doing a thing for the sake of showing how well you can do it, irrespective of the end to be accomplished by the doing of it. In the philosopher it is the interest of thinking for thinking's sake, of defining and redefining, analyzing and reanalyzing, controverting and recontroverting, not for the sake of getting anything in particular accomplished by this elaborate paraphernalia but for the sake of showing that you are cleverer than the other fellow at the game you are both playing. Anyone who has attended meetings of philosophers when they were discussing such subjects as the theory of knowledge will understand what I mean and will not find it hard to comprehend why scientists smile when men are commended to their favorable attention on the ground that they possess the philosophical habit of mind. It was not a chemist or a physicist, but one of the ablest of contemporary German philosophers who described metaphysics as "the systematic misuse of a terminology that had been invented for the very purpose of being misused."

Now I should be the last to say a word against either of these two interests. They have their place in life and they have their place in philosophy, but I submit that of themselves they are not capital enough on which to run the business of philosophy in a modern university. For philosophy as a university study has a service to render, the importance of which it is difficult to overestimate, yet which at the present time, for the reasons which I have mentioned and others which might be added, is not being fully performed. It is the old service with which philosophy began, the service of teaching men how to look at things in the large and to establish standards by which to measure values and appraise differences. This, I repeat, is something which was never more needed than today. It is needed in the world at large where issues are constantly being joined on irrelevancies and men fight for

causes which they do not understand. It is needed above all in the university in those precious years when young men are waking up to the possibilities of thought and with the tree of knowledge before them and only four or five years in which to pluck its fruits must choose either intelligently or ignorantly which to take and which to leave.

For the disheartening thing about the situation as we see it to-day is that while teachers of philosophy in their pursuit of the lesser ends of which we have been speaking have allowed their original and major interest more and more to fall into the background there has been no one else to take their place. We have seen that the present difficulty with philosophy in our universities is specialization run to seed, but it would be a mistake to hold the philosophers responsible for this. What has happened to them has been happening to everybody else. We have all been too busy to see things in the large and to think whole thoughts. We have been immersing ourselves more and more in our narrow group interests, disciplines as we call them in our academie lingo, until the university has become an epitome of the larger world, a place where vested interests fight for their own rights because there is no one to stand for the rights of society as a whole. This vacant place the philosopher should fill. He should concern himself with those larger interests which belong to humanity as a whole. It is his function to interpret men to one another. But what hope is there of his furnishing such a unifying influence in the world at large if he is unable to unify that smaller group of men who by their very profession are committed to the pursuit of knowledge?

In particular there are three groups of men in the university to whom the philosopher has a responsibility. These are, first, the rank and file of undergraduates who do not expect to specialize in philosophy; secondly, those students, undergraduate or graduate, who specialize in philosophy because they expect to teach it; thirdly, his colleagues in other departments who are interested in the bearing of their subjects upon the larger questions of meaning and value with which philosophy is concerned.

The second of these groups I can pass over with a word, for they bulk largest in the time and thought of philosophical teachers. Most courses in the department are planned with them in view and in these courses the two interests to which I have already alluded find full scope for their exercise. This is entirely legitimate provided they do not crowd out other and more important matters and provided the needs of other groups are not neglected. What these needs are I desire to consider somewhat more in detail.

And first of the undergraduate who studies philosophy for cultural purposes, or would study it if he knew what it could do for him. What ought we to expect his course in philosophy to do for him? Two things at least it ought to give him, the power to think independently and the ability to differ intelligently.

First, the power to think independently. In a sense this is the purpose of all university study, but in other departments the primary object is the acquisition of a particular body of knowledge and the training in correct thinking that results is a by-product. In philosophy one faces the ultimate questions which push thought to its farthest limits, such questions as the nature of reality, the test of truth, the meaning of beauty or of goodness or of life itself. How shall one deal with these permanent questions of the soul that recur from age to age, that transcend nation and race, that find their expression in the masterpieces of literature and art because they appeal to something which is essentially human? What shall we think of the different answers that have been given to these questions by those who have thought about them before us? What shall be our attitude to those whose answers to these great questions differ from our own? Above all, how shall we gain a sympathetic understanding of the conflicting ideals whose struggle age after age in ever new and baffling forms makes up what we call the history of civilization?

As to just what the questions are with which such a general cultural course in philosophy should concern itself, there will doubtless be difference of opinion. It is enough to say that they should be questions which have to do with standards and values and the grounds on which our acceptance of such standards and values must rest,—such questions as the meaning of life, the nature of personality, the mystery of evil, the function of the state, the ideal for society, the existence of God. These are questions which every man must face just because he is man and which he will face intelligently or blindly according to the help which comes to him through the experience of those who have faced these questions before him. Many attempts have been made to draw the line between science and philosophy. Professor James, it will be remembered, drew it between our answered and our unanswered questions. "Philosophy," he says, "has become a collective name for questions that have not yet been answered to the satisfaction of all by whom they have been asked."² I suggest as an alternative the following, "Science is the name we give to the group of studies which deals with those questions the answer to which we can be

² "Some Problems of Philosophy," 1911, p. 23.

content to take at second hand. Philosophy is the name that we give to the study which deals with those questions the answer to which each man must give for himself." In the past religion has been our most direct point of contact with these questions, a very natural one, for religion is the one interest which concerns itself with man's total nature. Other studies deal with this or that special interest, but religion deals with life as a whole. What is the meaning of life? What is one's place in the world? What is the nature of the ultimate reality on which one depends? What is the source of the influences which divide and distract, and what hope is there of being able to overcome them? These are the great questions of religion because they are the great questions of life and because they are the great questions of life they are the great questions of philosophy. It is the business of philosophy to meet the student at the point where life raises these questions for him, to point out the possibilities on the one hand and the other, to bring him such help as the experience of the great men of the past may have to offer and so help him to the point where he can make his own answer or decide that for him, at least, no answer is possible.

But these great human questions do not meet us in the abstract as problems of purely theoretical interest. They take the form of rival theories which have embodied themselves in institutions and in parties. They meet us in such great facts as the Roman Catholic Church, the German Empire, the English Labor Party, the Third International, big business and the like. What are these but philosophies incarnate? Underlying all practical conflicts of fact are conflicts of theory, none the less logical because often unconscious. Philosophy ought to help the student to understand these conflicts and to take his place on one side or the other intelligently, knowing what he does and why he does it.

And not intelligently only, but sympathetically. For these old antitheses are not arbitrary but have their roots in deepseated tendencies of human nature and the man who would intelligently adjust himself to the complex life of our time must learn not only to understand but also to sympathize with the view which he himself opposes and rejects. Such sympathy—the power to see with the other man's eyes, to reduce the point of conflict by the elimination of all irrelevancies, to maintain the sense of human brotherhood unbroken, in spite of difference—this spiritual attitude it is the function of the university to foster, and of all the studies of the university it is philosophy which must do this.

But not the disembodied philosophy that often goes by that name, the philosophy which has cut loose from its roots in fact.

As religion furnishes the natural point of approach to the first group of interests with which philosophy deals, so history, taking it in the large to include the study of society in the making, affords the point of contact with the second. And as a matter of fact, if we ask where philosophy in the sense in which we have defined it above is actually being taught to-day in our universities, we find that it is in the classrooms that deal with history, and the group of special sciences with which the historian is most intimately concerned, such as sociology, political science and law. For it is in these studies more than in any others in the university that the point of view of the whole dominates and the questions of values and of standards with which philosophy is preeminently concerned hold the center of interest. What philosophy must do for the university student is not to set up a rival study to compete with those who are teaching religion and history and law and other similar subjects in a philosophical spirit, but to provide that unifying point of view which will enable the student to utilize to the full that which they have to give him.

And yet I realize that in saying this I have unduly narrowed the field. It is true that religion and history furnish the most natural point of contact with philosophy because they are studies which in their very nature emphasize the larger view, but there is no single one of all the studies of the university which does not at one point or another raise the ultimate questions, and there is no teacher worthy of the name in whatever classroom he may be sitting who does not at some point teach philosophy. Literature is but the attempt to interpret, in simple and intelligible language, the convictions by which man lives. Art is but the presentation in plastic form of the ideals of the spirit. Physical science itself, when conscientiously studied, leads inevitably to philosophy. For the scientist is a man as well as a scientist and the more eminent he is in his science the more inevitably will he feel the pull of the great questions which physical nature no less than history and religion put to the soul of man, the question of the whence and the whither and the why. Great conceptions like development, the struggle for existence, the origin of species to which the detailed study of the biological laboratory leads reach out almost imperceptibly into those larger unanswerable questions which are the concern of philosophy. No philosophy can hope to be adequate or satisfying which draws its material from a part of the field only, which does not make use in its final synthesis of the contributions which come from all the sciences. The true faculty of philosophy in the university of the future will not be the professors of ethics or of metaphysics or of

the philosophy of religion alone, but the group of philosophically minded men in all the departments who are thinking each of them in his own way of ultimate questions.

But that faculty still needs to be organized. In all the departments men are thinking philosophically, but they are thinking in isolation. Some of them are not even aware that they are philosophizing at all and not a few would resent having the name philosopher applied to them. And yet they are doing the very things which we have seen philosophy ought to do. This isolated work ought to be correlated and the correlation may well be the responsibility of the university department of philosophy. As the philosophical classroom ought to be for the undergraduate student a clearing house of the different ideas which come to him from the different classrooms, so the philosophical department ought to be for the faculty as a whole a clearing house of the different theories and problems which emerge in the varied fields of university research.

An illustration of what I have in mind is the recent Seminary on Jurisprudence, given by Dean Pound of the Harvard Law School under the Department of Philosophy and Psychology of the Faculty of Arts and Sciences of that University. Of this course Professor Perry writes as follows: "It is a graduate Seminary course open only to specially selected individuals. The object of the course is to discuss the topic of Jurisprudence, not merely from the strictly legal point of view, but also in its philosophical, psychological, sociological, economic and political aspects. The presence of representatives of diverse branches of knowledge makes this possible. It is a more or less deliberate experiment in the direction of breaking down the artificial boundaries which divide departments of the University. All of the members agree in regarding the Seminary thus far as a pronounced success. It is developing more and more fellow-consciousness and mutual understanding. We are all beginning to think that something of the sort should be done in future years with perhaps some other teacher to lead the discussion."

Why have we waited so long for the giving of such a course as this? Why is not the kind of thing that the Harvard philosophers have asked Professor Pound to do the kind of thing that the philosophical department of all our universities should be asking of the philosophically minded men in all the more important branches of study?

Partly because the philosopher has not conceived his own task broadly enough, but also and even more because of our faulty conception of the nature and function of university departments.

The department of philosophy has been thought of as a group of men who were to do things which in the nature of the case they could not do well alone, rather than as a means for bringing together all the men in the university who were actually doing the work which an ideal department of philosophy should do. The ideal department of philosophy, I repeat, should consist of the philosophically minded men in all the faculties under the chairmanship of a man whose business it is to see that the proper correlation is made between them. Such a department should, of course, include a chair or chairs to provide for teaching the technical matters concerning the history of human thought with which the history of philosophy as at present taught is primarily concerned. But the teacher of the history of philosophy need not necessarily be the chairman of the department. He might be a teacher of law, or of history, or of literature, or of comparative religion, or, for that matter, of physical science, provided only he were a man with philosophical insight and vision and the power to unite men in pursuit of a great and worthy ideal.

To follow out in detail what would result from the acceptance of such a program would lie beyond the scope of this paper. It might lead to the postponement of the present course in the history of philosophy to the graduate school or its restriction to the little group of men who desire to choose that for their specialty in life. Or it might result in the reconstruction of that course so as to fit it for the large group of men who ought to be introduced to the study of philosophy who do not now take it. It would certainly mean the provision of a new course or courses dealing from the undergraduate point of view with individual and social standards and drawing its illustrations far more intimately than has been the case in the past from the materials which are furnished to the students in other courses. It might be well for the time being to banish the name philosophy altogether and to offer courses with such titles as "Contemporary Civilization," "Comparative Standards," "Fundamentals of Religion" and the like. The main thing to do would be to get men thinking about big questions and to get them thinking together.

More difficult still would it be to secure the needed cooperation in the more advanced branches of the subject. One would have to feel one's way slowly and by degrees. Professor Perry's suggestion of a joint Seminary opens one fruitful line of progress. Another would be the giving of public courses of lectures in which different departments should cooperate, dealing with the philosophical aspects of the different studies concerned. It would be

desirable to provide as far as possible within each main subject of study some course which had to do with the relationship of that special study to the larger human problems of which we have been speaking. I take it that this is what Professor Woodbridge had in mind at the recent meeting of the Philosophical Association when he said that what philosophy needed above all things was not more discussion of what philosophy should be or do, but fruitful work at those concrete problems which meet us on every hand and which clamor for solution. But whatever the method followed in detail, the main thing to be aimed at should be that the men who in their different fields are working out the big human problems should be brought together so that their minds should be fructified by contact and the bearing of the work of each be seen in its relation to that of all the rest.

This would require, no doubt, a radical change in present university policy and ideals. It would mean the breaking down of the hard and fast line of partition between the different departments and the abandonment of the conception of a discipline as a vested right, which is the most unfortunate of all our legacies from the German educational system. But what is philosophy for if not to break down barriers and reveal hidden unities. Organization is after all only a by-product. All beginnings take place in the mind, and if only the philosophers conceived their work in a large enough way there is nothing in the world of practice which they might not ultimately hope to accomplish. They might even work that miracle of miracles of making the university again a place where reflective thought about the ultimate problems should be regarded as the most important work that a man could do, and mind meet mind in common quest of life's supreme values.

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UNION THEOLOGICAL SEMINARY.

THE VALUE OF THEORIES

THE human mind is an incorrigible maker of fiction, whether it be in science or poetry. Theories have always sprung as spontaneously from man's imagination as have fairy tales. Indeed the myths of primitive races are at once theories and fairy tales. But to the sophisticated scientific consciousness, proving a theory is very different from painting a skilful and elaborate imaginative picture. If a theory is a fiction, it is at least a rational fiction as remarkable for its adherence to facts as for its departure from them.

The aim of theorizing is usually thought to be the discovery of truth—truth about the inner relations and structure of the natural world. A scientific fairy tale must be true, or at worst highly probable. Its truth, or probability, is reached by inductive inferences from the facts of experience as they appear in every-day life or in laboratories. Such is the ordinary statement of the logicians.

Is this account of the proof of the truth, or probability, of theories by a peculiar method of reasoning—the inductive method—adequate? A closer study of what a theory is, of how it is related to fact, and of what human interests it fulfills, suggests a different conclusion. The truth of a theory is its least important value; the proof of its truth, or even of its probability, is doubtful; and the peculiar method of reasoning known as induction is not at all a distinct type of logical process; it reduces wholly to deduction.

We state our conclusions first, and shall elaborate them by an analysis of the elements which give value to any theory, which make it a *good* theory.

Theorizing is at once a practical and a fine art. A theory is a useful tool by means of which man can mold nature to his will. It is also an intellectual object with a beauty and a value peculiarly its own. Like a poem or a painting, it seeks more than the transcription of fact. It is a reflective effort to see beneath the surface.

Theories share beauty with the products of the fine arts. The elegance of a body of scientific propositions, its orderliness, simplicity and completeness are a kind of beauty in the abstract. The system can be grasped, as is a work of art, in a single mental intuition. The praise of the beauty of ideas goes back to Plato, and in modern thought pours fervently through the essays of Mr. Bertrand Russell. Esthetic values appear both in the mathematical and physical sciences, and are a bond of union between them.

The pragmatists have directed attention to the utility of theories. But this is the sole element of value which they have found in them. It is perhaps the least fundamental. The purely intellectual interest which compels men to theorize is largely detached and disinterested. It is like Spinoza's intellectual love of God, where God is the whole spectacle of existence. The usefulness of theories is secondary and derived. Their primary value is the satisfaction they give to that "independent hunger of the mind" which is curiosity.

Hence the value *par excellence* which distinguishes theorizing from the fine and the practical arts is something other than utility or beauty. Theories explain. A theory goes behind the given fact to build a scheme in which the given fact will fit, and by the aid of which it will be understood. Theories make experience intelligible.

A good theory *may* have utility and beauty; it *must* have explanatory value.

We may ask, then, what makes a theory an explanation? On this question the whole discussion will hinge.

A theory takes on explanatory value when it is linked to fact by its logical consequences. To explain is to deduce. Man has a predilection for deduction; the essence of rationalization is the construction of deductive systems. To have deduced a proposition from some other proposition known to be true gives a strange satisfaction to the inquiring mind; and when a theory yields this satisfaction it is intellectually valuable. Conversely, if a theory has no true consequences it has no explanatory value. It is then a figment of the imagination, a veritable fairy tale with a doubtful title to existence.

The search for antecedents and consequences goes on wherever thought goes on. In the mathematical and physical sciences the process is essentially the same; and everywhere antecedents have or have not explanatory value according as they have or have not true consequences.

Paradoxical as it may seem, it is only true propositions which demand explanations. A false proposition is disposed of once and forever. But a true proposition stands as a challenge before the knower with the question, "Why am I what I am?" Science begins with fact, with true propositions about fact. From what is known here and now it extends its theoretical picture into the uttermost realms of space and time and beyond the sensory threshold of the most delicate perceptions and sensitive instruments. The known is explained in terms of the unknown. The hypothetical becomes the ground from which the actual is deduced.

Generalization is the first and most natural step toward theory. Indeed a generalization is a kind of elementary theory, since it is hypothetical. It is the premise of a small deductive system. Like all hypotheses a generalization is (1) never completely verifiable, and (2) it yields deductive consequences. If *all* objects of a certain class behave in a certain manner it follows that any particular object of the class which appears in experience will behave in this manner. So long as this deductive consequence is true, the generalization will have explanatory value; but if the consequence is false, if there are exceptions to the law or the generalization, it will cease to be valuable. It must then be corrected.

Since all the objects of the class to which the generalization applies do not appear in experience, the generalization is an imaginative construction. It goes behind and beyond experience. It is not

a description of any entity which is wholly known. We can point only in imagination to *all* living creatures or to *all* chemical substances.

A usual kind of explanation is causal explanation. The cause is that from which the effect can be deduced. At first the cause may not be thought of as the logical antecedent of the effect, but merely as its temporal antecedent. The naïve philosophy of causation assumes that because *A* precedes *B* and is temporally contiguous to it, *A* therefore causes and explains *B*. But a temporal antecedent is quickly generalized into a logical antecedent, and this gives rise to a less naïve explanation. *A* can cause *B* only if *A* uniformly precedes *B*; only if it is an invariable antecedent of *B*. So that the causal connection becomes a logical connection—if *A*, then *B*—in which the notions of temporal succession and contiguity are secondary. The one event becomes an explanation of the other because the interest in deducing one from the other is satisfied.

But the paradise of the theorist lies beyond generalization and natural law. He has yet to create a deductive system into which his generalizations and natural laws will fit as consequences. Simple generalizations and empirical natural laws have so little of the element of theory in them that they are usually thought of as fact rather than theory. They are the mere beginnings of explanation, the raw materials of the wider structures which are theories proper. To the "why" the answer is always "why." The theorist now aims at relating laws to one another, at unifying systems by deducing them in a body from more primitive and inclusive premises. And this leads him into the thin world of conception and assumption, where the scientific imagination finds itself most free. Since deductions can always be made in a great variety of ways and from a large number of different premises, the scope for human ingenuity in inventing deductive unifications in any scientific field is unlimited.

Hence, in the realm of pure theory, the problem of evaluating theories will have a double aspect. The scientist will ask himself not only what possible explanations can I offer, but what is the best of all possible explanations? And so, to the criterion of value in theories—that the theory yields true deductive consequences—we must add a criterion of relative value. This will be the completeness or incompleteness of these consequences. The elegance and simplicity, of which we spoke as esthetic values, will be secondary criteria of relative value.

The completeness of a theory is its capacity to give by deduction all the particular and general propositions in a widely extended field of knowledge. The theory which explains all is better than the

theory which explains only a part. The Newtonian mechanics, for instance, allows the deduction from a few premises not only of Kepler's laws of the motions of the planets and Galileo's laws of falling bodies, but also a complete set of mechanical theorems which on other non-deductive evidence are believed to be true. For this reason the Newtonian theory is of the highest value. But the explanatory value of the mechanics of Einstein is perhaps even greater. It is a completer theory. Whereas Newton restricts himself to motions whose coördinates are fixed, Einstein considers motions whose coördinates are themselves in motion in every conceivable way, and finds "that the laws of physics are independent of any conventional system of coördinates, but can be expressed truly in all."¹ Einstein's theory is completer and more valuable than Newton's for another reason. "By combining the principle of the relativity of motion with the principle of the absolute constancy of the velocity of light, Einstein was able to achieve the highest technical triumph for which all the physicists of the past had sought in vain, to wit, unification of the whole of physics. The attempts to unify physics by deriving the laws of electricity and optics from those of mechanics had definitely failed, and the converse efforts to explain the fundamental facts of mechanics such as inertia on the basis of electricity were not universally satisfactory. Einstein achieved the unity of mechanics and electricity, the two divergent branches of physics, by subordinating both to the same group of transformations and showing these transformations to have the highest heuristic value in both branches."²

We shall not belabor the point by illustration. The test of value in theories is everywhere the same—do they yield true consequences? And the better theories are always those which are the most complete. This is true equally of theories of society and theories of the structure of matter; it holds in political economy as well as in astronomy.

The deductive systems of mathematics and logic are also, from some aspects, explanatory theories. Modern analyses lead us to believe that the relation of a logical or mathematical system to the facts of experience is not important. From certain primitive ideas and primitive propositions—postulates, we may call them—deductions are drawn. The primitive ideas and propositions are chosen for reasons of convenience and elegance in exposition; they need not be true; the question of their truth is beside the point. They

¹ Morris Cohen, "Some Philosophic Aspects of the Principal of Relativity," a paper read before The American Philosophical Association meeting in New York, December, 1920.

² *Ibid.*

need only be simple, independent and consistent. And the theorems deduced from them need have no application to the world of our experience. They are commonly said to be merely possibilities; and the procedure by which they are reached is a method of exploring the realm of possibilities. But a deductive system which purports to be a system of logic, of geometry or algebra—which, in short, purports to be anything other than a pure deductive system with no application—does have among its consequences a large number of propositions which we believe to be true quite apart from their place in the system. Thus, a system of logic will somewhere state, either as postulate or theorem, the law of contradiction; a system of Euclidian geometry will include the proposition that parallel lines do not intersect; a system of algebra the rules of multiplication and addition. The knowledge of algebra, geometry and logic which comes to us in experience does embrace these propositions; they appear to be facts in our experiential world. We are not in need of any logical or geometrical or algebraic theory to convince us of their truth. But we are in need of rationalizing them, or fitting them into a system; in short, of explaining them.

Those deductive systems of mathematics and logic whose aim is to analyze certain generally accepted mathematical or logical truths by deducing them from simple, consistent and independent postulates, are explanatory theories. Those mathematical and logical systems which have no factual interpretations, which remain within the realm of the possible without touching the actual, are not explanatory. Their consequences as well as their premises belong to the imagination. Nowhere have they a foot upon the earth. There is nowhere in them a proposition which we can know to be true in fact, hence there is nothing to be explained.

So we may say there exist explanatory and non-explanatory deductive systems. The physical sciences build explanatory deductive systems. The mathematical sciences build both explanatory and non-explanatory systems. But there is no vast gap between the method of physics and mathematics, as those who oppose inductive to deductive logic suppose.

It is well enough to speak of explanatory value, of utility and elegance; but, it will be asked, what of the truth of these theories? The single indispensable value of any theory, it will be said, is truth. An untrue explanation is worse than none. This truth, which is so frequently demanded of theories, is of a rigid kind—logical inferability from true premises. The principle of induction, for which many philosophers have sought in vain, is supposed to assure it.

The difficulty in proving the truth of theories arises from two

sources, (1) their generality, and (2) the use of non-empirical entities as terms in them. If theories were not general, if they did not intend to apply to all cases, future and past, near and remote, and to all possible experiences, we might verify them immediately within the finite life of the race. But to confine a theory, to restrict its generality, is to impair its completeness, and hence to lessen its value. Yet the facts on which a theory is built are always particular. The problem of how to pass from a restricted to an unrestricted area, from "some" to "all," has been the classic difficulty of inductive logic. Even if this problem were solved, the other would remain. Non-empirical terms figure importantly in many of the best theories. The world of atoms and of luminiferous ether is quite beyond experience. If we are to prove that propositions about such entities are true, and if we are to establish theories in their total generality, we must resort to something less direct than an appeal to experience.

The answer is inference. We must *infer* the truth of our theories. The failing prop of inductive inferences has been the principle of the uniformity of nature, variously named the principle of causality and the principle of sufficient reason. As applied to the passage from "some" to "all" the principle may be stated thus: every particular proposition can be so qualified that it can be truly generalized. Now, if this were so, we should still be completely at a loss to know what qualification of a particular proposition would make it a candidate for true generalization. We could never be sure that we had added the proper qualification. My test tubes may show me, for example, that hydrogen and oxygen follow Boyle's law; but further experiments will also show that *all* gases, including hydrogen and oxygen, follow Boyle's law only on the qualification that they remain within certain limits of temperature and pressure. But the principle of uniformity can not assure me that this *is* the one and necessary qualification upon which I can generalize the law. In terms of natural law the inductive principle becomes: every fact or event in experience exemplifies some natural law. What law? The principle leaves us in the dark. As applied to propositions about the non-empirical entities which enter into so many theories the principle would say: there is a structure underlying immediate experience which is its true structure. But what is this structure? Atoms? Or the *élan vital*? This question the principle leaves unanswered.

As an aid to inductive inference, the principle of uniformity is nothing more than a pious hope. We may consider it an expression of man's desire to rationalize experience, to find a sufficient

reason from which the present fact will follow, to construct an explanatory theory. But the desire that there shall be a theory, law or generalization does not establish the truth of any theory, law or generalization. The principle may be, as has been suggested, simply a vast lie.³ "Nature imprints in our minds," says a recent writer, "the conception of universal uniformity in order to blind us to the fact of the absolute incoherence of events—a fact which is obvious to everyone but a scientist."

Is there any other principle which will make it possible strictly to infer the truth of theories? Certainly we can not infer from the truth of the consequences of any proposition that the proposition, itself, is true without violating the principle of inference or formal logic. We can infer only that which is strictly implied, and a theory is not strictly implied by its consequences. It is indeed possible strictly to infer that a theory is false; this follows as a rigid deduction from the falsity of its consequences. But the truth of the theory can not be so reached from the true propositions upon which it is built.

It is impossible to assert that no principle of inductive inference which will assure the truth of propositions inferred by it *can be* discovered. But it can be said that no such principle has been discovered. Meanwhile, theories remain imaginative constructions whose truth lies beyond fact and logical inference.

The constructions of the theorist can be brought within the area of the true and the inferable only by enlarging the concepts of truth and inference. If truth means artistic truth, fidelity to the canons of good taste in theorizing, as truth in poetry is fidelity to standards of poetic beauty, a theory may then be called true when it exhibits the values of which we have spoken—elegance, utility, and explanatory value. But this is not the truth of every day experience, of prose and fact. It is the truth of fabrication and good artistry. So, also, if inference be freeing the mind to roam among possibilities and to choose the most fitting, theories are then inferred from their premises. But this is not the inference of strict logic with proceeds from true premises by implications to true conclusions.

Probability is often suggested as a substitute for truth in theories. Theories can, indeed, be said to have probability in a vague sense, where probability means scientific value in general—credibility, admissibility, a generic name for the values of which we have spoken. But a numerical probability calculated on an enumeration of cases of truth and falsity can scarcely be intended.

The conclusions of this brief study of theories are twofold. (1)

³ R. Demos, "Lies and Liars," *The Yale Review*, January, 1921, p. 382.

The chief value of a scientific construction is that it explains experience by making it a consequence of a deductive system. Explanatory value is sufficient to a theory; truth, in the sense of factual truth or inferred truth, is not established and is not a necessary value. Indeed, those qualities which make a theory a good explanation, generality and penetration beneath fact, are the very qualities which stand in the way of proving its truth. The proof of a theory is the proof of its general value as a scientific construction, and this is something other than its truth. (2) Further, there is no extraordinary type of logic which can be called inductive logic. The traditional distinction between induction and deduction is specious. To prove that a theory has scientific value is to make it the center of a deductive system the logical consequences of which ramify widely into experience. The processes involved do not differ from those by which any other logical system is built; rationalization in the physical sciences is of the same type as rationalization in the mathematical sciences. The intellectual interest in system-making is always an interest in deduction.

If there is any principle of induction it is this: free the imagination to build a deductive system which will yield the truths we know by experience. This is not a postulate of proof, but a counsel of action; and it would apply equally to those mathematical analyses which take their departure from commonly accepted mathematical truths. Human reason is of a single texture wherever its threads extend. The inductive and deductive methods coalesce.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Group Mind. WILLIAM McDUGALL. American Edition. New York: G. P. Putnam's Sons. 1920. Pp. xxii + 413.

This volume bears the sub-title, "A Sketch of the Principles of Collective Psychology with Some Attempt to Apply Them to the Interpretation of National Life and Character." Collective psychology has for its subject-matter the mental life of groups. It is, therefore, a part of the more general science of social psychology, which embraces both the mental life of groups and that of individuals in their social interactions. The author's previous work, *Introduction to Social Psychology*, he explains (p. 2), is not a treatise in social psychology but merely an introduction to it. In *The Introduction to Social Psychology* the author was merely laying the foundation for his social psychology, the first instalment of which has now

appeared. The relation between the two books is further discussed by the author as follows: "The main theme of my earlier work was that only through increase of knowledge of others is each man's knowledge of himself slowly built up and enriched, until it renders him capable of enlightened self-direction. So the main theme of this book is the development of the group mind, the increase of its self-knowledge and of its power of self-direction through increase of knowledge of other human societies" (p. 408).

The book has three parts, and an introduction. In the introduction, after defining group psychology and its relations to kindred sciences, the author defends the concept of the "group mind" against the attacks of Mr. Maciver, who, McDougall claims, makes the mistake of identifying the group mind with a "collective consciousness." Mr. McDougall's other predecessors in the field of social psychology are then more briefly disposed of: Aristotle, Hobbes, Locke, and the Utilitarians on the ground that "they all begin in the effort to describe what ought to be; and incidentally give some more or less fallacious or fantastic account of what is, merely in order to support the normative doctrines" (p. 5). LeBon, Sighele and Marie are disposed of on the ground that they deal only with the lower forms of collective life and hence "are concerned chiefly to point out how participation in the group life degrades the individual" (page 27). Fouillée is about the only one of his predecessors who gets much recognition. The Germans he regards as mere stumbling-blocks, and even though his philosophy is very similar to that of the German idealists, he wants it distinctly understood that no credit is due the Germans, with the possible exceptions of Fechner and Lotze (p. xiv). (Even the author has a group mind!)

Part I is entitled "General Principles of Collective Psychology." It consists of a discussion of the levels of cooperation, taking on the one hand the temporary emotional life of a crowd and on the other the highly organized and genuinely "mental" life of a patriot army. The crowd has no group mind, for its psychological bond is purely emotional, but as cooperation becomes more conscious and purposive the group spirit or group self-consciousness becomes more evident and more effective. By the group-spirit is meant here the "knowledge of the group as such, some idea of the group, and some sentiment of devotion or attachment to the group" (p. 92) on the part of each member of the group. According to McDougall there are five principal conditions which make possible a highly developed form of collective life: (1) "some degree of continuity of existence of the group"; (2) "some adequate idea of the group" "in the minds of the mass of the members of the group" about which group

sentiments may gather; (3) "interaction of the group with other similar groups"; (4) "a body of traditions and customs"; (5) "organization of the group" (pp. 69 ff.). When these conditions are present the self-regarding sentiment of each member becomes extended to the group as a whole and thus "binds the group together and renders it a collective individual capable of collective volition" (p. 78). It is this sublimation of the self-regarding impulses into other-regarding impulses which is primarily responsible for the elevating effect of collective mental life. A person is usually conscious of his membership in more than one group; this McDougall calls "multiple group-consciousness." Such a person finds himself elevated to a great degree both morally and intellectually by the interactions among his groups. The author then attempts a classification of groups—a classification, however, of which he makes little use. Groups are natural and artificial. The natural groups are those rooted in kinship, or in territorial or occupational contiguity. The conditions making for natural groups have mainly been destroyed, so that most modern groups are artificial. Artificial groups are of three kinds, purposive (*e.g.*, a social club), traditional (*e.g.*, caste), mixed (*e.g.*, state or church). The description of the interaction of these various groups might well occupy most of the book, and would be a valuable contribution to social psychology; but unfortunately it is very brief and superficial. And consequently "the principles of collective psychology" are difficult to find in the book. The observations noted above, about the importance of the group spirit for collective life, are true enough, and were surely well-known long before the *Introduction to Social Psychology* was heard of. The terminology is new in spots, the exposition is elaborate and repetitious, but the ideas can be found in Aristotle, Hobbes or Mill in spite of their supposedly "normative doctrines." But to call these the "Principles of Collective Psychology" strikes me as excessively eulogistic. Or perhaps this is really all that there is to be said on "collective psychology," and perhaps each generation needs to have the old truths dressed up in the latest style. Perhaps people will understand it better if, instead of saying public-mindedness is a virtue, we say that a highly organized group depends for its progress on the extension of the self-regarding sentiments to the whole group.

Part II is entitled "The National Mind and Character," and consists of an analysis of national life from the standpoint of the ideas of Part I. The essential conditions for collective mental life enumerated above are here applied to nations. A certain degree of racial, geographical, and mental homogeneity, freedom of communi-

cation, leaders, continuity, and a more or less well defined purpose are all necessary to the existence of a national mind; and it is the existence of a national mind which is the most essential element of nationality. Mr. McDougall is now prepared to draw an analogy between the individual and the nation, not as biological organisms, however, but as "contractual organisms" (p. 241), or *mental organizations*. Nations vary in their mental organization much as individuals do. "The organization of some peoples is wholly the product of the conflicts of blind impulses and purely individual volitions working through long ages," (p. 206) as *e.g.*, the old China; "Of other nations the organization is, in part only, a natural growth, having been, in large part, impressed upon it by an external power" (p. 207), as *e.g.*, Russia under the autocracy of the Tsar. "Another type of national organization results when the natural evolution of the national mind and character has been artificially and unhealthily forced by the pressure of the external environment of a people, when the need of national self-preservation and self-assertion compels the mass of the people to submit to an organization which is neither the product of a natural evolution through the conflict of individual wills, nor the expression of the general mind and will, nor is altogether imposed upon it for the individual purposes of the few, but is a system planned by the few for the good of the whole, and by them imposed upon the whole. This is the kind of organization of which a modern army stands as the extreme type and which is best represented among modern nations by Germany as she was before the War" (p. 209). A nation reaches the fullest development of nationhood when it attains a self-conscious will, just as an individual finds his fullest self-realization in a unified and self-conscious will. "We might place nations in a scale of nationhood. The scale would correspond roughly to one in which they were arranged according to the degree to which the public good is the end, and the desire of it the motive, of men's actions; this in turn would correspond to a scale in which they were arranged according to the degree of development and diffusion of the national consciousness, of the idea of the nation or society as a whole; and this again to one in which they were arranged, according to the degree of intercourse they have had with other nations" (p. 229). Among the higher nations, therefore, the welfare of the nation is valued by its members more than their individual welfare or even the welfare of any one generation of the nation. Patriotism is thus a natural outgrowth of the national mind, and is "psychologically justified." Similarly the great ideas which dominated national minds may be evaluated according to their power to destroy or to

build the nations. Ideas such as world-conquest, caste, asceticism have proved "ineffective to sustain national vigour or to promote social evolution" (p. 251). Less harmful ideas have been those of personal loyalty to the ruler, and of ancestor worship. But "the four ideas, liberty, equality, progress, and human solidarity or universal responsibility, seem to be the leading ideas of the present era, the ideas which, in conjunction with national sentiments, are more than any other, fashioning the future of the world" (p. 254).

In Part III the author takes up "the consideration in a general way of the processes by which national mind and character are gradually built up and shaped in the long course of ages" (p. 275). This according to McDougall is the crowning task of collective psychology. It is the "genetic psychology of nations" or a scientific philosophy of history (p. 147). The evolution of the national minds or character is discussed under three heads: (1) the evolution of innate racial qualities (both moral and intellectual); (2) the evolution of national traditions or civilizations; (3) the evolution of social organizations. That there are innate moral and intellectual differences between the races, McDougall holds to be indisputable. He surveys rather superficially the speculations on the prehistoric "race-making" period; speculations which are highly confusing since they throw little light either on how one may discover which moral and intellectual traits are innate and which not, or on what the various specific innate racial traits are. We are led to believe, however, that there must be such differences though we may not be able to tell what they are. The arguments for changes in innate racial qualities during the historic period the author naturally finds less convincing. He believes that practically all historic changes of national mind must be explained by the influences of tradition rather than racial factors. The early progress of the nations is to be explained by the stimulating effects of racial crossings, and of the conquest of the nations by peoples of older civilizations. But progress before the last thousand years was slow or else unstable because of a fundamental defect in social organization, which characterized all ancient nations, *viz.*, the caste system. As long as it was maintained the liberation of the mind was impossible. Obversely, the chief causes of progress during recent times have been the breaking up of custom, the stimulation of free inquiry, and the weakening of the power of the state over the individual. Only as intercourse with and between nations becomes free, can national minds and characters develop on a firm basis.

This is a bare summary of the thesis of the book, all the more bare because the book itself abounds in arguments and illustrations

drawn from history and literature in support of this thesis, and to get a just impression of the book these are essential. McDougall touches upon so many different things that the reviewer is greatly embarrassed in being forced to select only a few points for more detailed criticism. The last part of the book, pretending to cover the whole history of man, I shall not even attempt to discuss. The book, it seems to me, would be better without it, for it is far more given to free speculation, prejudice, and irresponsible philosophizing than the first two parts—and of necessity so. A scholar, it seems to me, should not attempt such a task—at least not in less than one hundred and fifty pages. For the rest, I shall merely call attention to a few points that seem fundamental.

In the first place it is impossible to tell what McDougall means by the "group mind." He tells us, for instance, that all he means by the group mind is the consciousness in each individual of his membership in the group. Then again the group mind means the idea which each member has of the group as a whole. In other places he tells us the group mind is something quite apart from the minds of the members of the group; it is the "collective deliberation" which we find in legislatures, *etc.* (p. 271). And in discussing the national mind as a type of group mind, he links it up with national character or traits. The confusion seems to be due to the fact that the author uses the word "mind" in at least two different senses. He defines mind as "an organized system of interacting mental or psychological forces" (pp. 13, 66). (Such a definition, by the way, is usually found among the "exercises" in an elementary text-book on logic, and not in a scientific treatise!) Sometimes he uses the word "purposive" as synonymous with "mental" or "psychical," but his failure to define purpose, except in terms of mind, unfortunately renders the synonym logically useless. But it is clear from this definition that he means by "mind" some sort of "organization." In other places, however, he speaks of mind in terms of consciousness, acts of will, *etc.*, as he did in *Body and Mind*. He distinguishes clearly between the two meanings of "mind" in his reply to Maciver (p. 20). He repudiates the doctrine of a "collective consciousness" in the sense of a super-individual consciousness. "Maciver," he goes on to say, "is under the influence of that unfortunate and still prevalent way of thinking of the psychic as identical with the conscious which has given endless trouble in psychology; because it has prompted the hopeless attempt, constantly renewed, to describe the structure and organisation of the mind in terms of conscious stuff, ignoring the all-important distinction between mental activity, which is sometimes, though perhaps

not always consciousness, and mental structure which is not. The structure and organization of the spirit of the community is in every respect as purely mental or psychic as is the structure and organization of the individual mind" (p. 20). It is obvious here that McDougall intends to speak of the group mind as a form of social structure, not of activity. But as the book proceeds the distinction is obscured and we soon find McDougall speaking of "national self-consciousness," "group volition," *etc.* (see for example page 214), in a sense which carries him back very definitely to the "consciousness psychology." With such confusion reigning on the meaning of mind, it is inevitable that the term "Group Mind" should have an emotional rather than an intellectual significance.

A similar confusion vitiates the discussion of the relation of collective psychology to individual psychology, and more generally of the group to the individual. The first part of the book is largely devoted to the thesis that man in society behaves quite differently from man in isolation (see for example pp. 13, 62), that the life of the organized group elevates the man above what would be his private or individual level. This seems to presuppose that we know, presumably through the efforts of individual psychology, how human beings act apart from group life. But we obviously do not. The "individual" and his "level" are in this sense pure abstractions. To attribute the moral and intellectual "elevation" of social life to the "group spirit" rather than to the social qualities of human nature, strikes me as a combination of mysticism and propaganda. The "group" as something over and above the individuals composing it is equally an abstraction. And if "collective psychology" has a subject matter quite independent of "individual minds," as McDougall claims, it seems to me to be closer akin to German philosophy than to empirical psychology; and it leads indeed to the same concepts—to a "collective good" which is the good of nobody in particular and to a "general will" which is the will of nobody in particular.

In this connection I want to mention the difficulty I have in understanding a passage like the following: "A nation is essentially the realization of an idea, the idea of a nation; only in so far as the idea of the nation exists and operates in the minds of the members of the nation, controlling their conduct and directing it to actions having reference to the nation as a whole, does a nation come into and continue in existence" (p. 409). It seems to me that there is a great difference between speaking of a nation as the realization of an idea (which is good idealistic philosophy), and speaking of the idea which the members of a nation have of the whole or "national

self-consciousness." I think most of the time McDougall is speaking of the latter, but this is not the only passage in which the confusion occurs. The two ideas certainly do not imply each other. Merely that individuals have an idea of their common nationality does not imply that the nation is the realization of an idea. Similarly I fail to understand the logic of the following passage which McDougall quotes with approval from Barker's *Political Thought in England*: "That [speaking of an Oxford college] group of minds, in virtue of the common substance of an uniting idea, is itself a group-mind" (p. 25). Does Mr. McDougall mean by the group-mind merely a group-of-minds? Then why use such confusing language?

I shall mention only one more source of confusion, and I am speaking now primarily of Part III. Mr. McDougall uses the terms racial and national too loosely. We find him arguing innate racial differences between nations, in spite of the fact that he makes it clear that most nations are a conglomeration of races. And conversely, he argues from national differences, which are for the most part cultural differences, to innate racial differences. Though this is a common confusion, one seldom finds it so thoroughly exploited.

My remarks are intended to suggest that the *Group Mind* is a contribution to idealistic philosophy rather than to collective psychology. The author appears to be interested not so much in clarifying the current confused ideas about group life, as in exploiting these confusions for the sake of a philosophy of mind and of progress. For this reason I make no apologies for reviewing at such length in a journal of philosophy a book on psychology written by a prominent modern philosopher!

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Annales de l'Institut supérieur de Philosophie. Tome IV. Année 1920. Louvain: Institut supérieur de Philosophie. Paris: Librairie Félix Alcan. Pp. 624.

The University of Louvain, which had been one of the victims of Teutonic barbary, comes back to the world with a new life, and offers to the student of medieval philosophy the fourth volume of the *Annales de l'Institut supérieur de Philosophie*.

It is a bulky volume of 624 pages, and consists of a certain number of essays of different lengths, the titles of which are the following: *Aristote et l'éducation.* *La Morale à Nicomaque.* *Remarques métaphysiques sur la causalité.* *La Morale kantienne et l'Eudémonisme.* *Pestalozzi et Herbart.* *La Philosophie française à la veille de la guerre.* *L'Œuvre d'art et la beauté.* *Le Droit*

international chrétien. Un sociologue catholique, Henri Lorin. L'Idée de Création. De quelques conditions de la Renaissance thomiste.

The first thing which strikes us when we go over these different essays is the number of pages devoted to the study of Aristotle. In point of fact, of the 624 pages of the volume, 218—that is to say, more than one third—is devoted to the study of the Stagirite. No special study is made of any other philosopher previous to the Christian era, although, as was to be expected, in the studies on Aristotle, Plato is often mentioned.

The scholastics of Louvain thereby seem to assert once more that it is to Aristotle we must trace back the scholastic philosophical system, and not to Plotinus, as François Picavet has been teaching for many years. In point of fact, Picavet's brilliant theory does not seem to have gained many adherents. It may be true to a great extent in so far as scholastic theology is concerned, but the philosophical principles of St. Thomas Aquinas are evidently to be traced back to Aristotle and not to Plotinus.

Of special interest is the treatise entitled "*Aristote et l'éducation*," work of the famous Hellenist Defourny, to whom we owe an excellent work on the economic and political teachings of Aristotle, published in the third volume of the *Annales*. In both of these works, M. Defourny penetrates deeply into the spirit of Aristotle and illuminates with a new light the life of ancient Greece.

A considerable part of the volume is devoted to modern philosophy. We have an essay on Kant, one on Pestalozzi and Herbart, and a short, but very illuminating article on French philosophy at the eve of the great war, in which the author, P. Nevé, makes a thorough analysis of the different elements to which the philosophy of Bergson can be traced back.

The treatise entitled *La Morale kantienne et l'Eudémonisme* is a masterpiece of reasoning and deep thought, and ought not to be neglected by any student of Kant. The author, C. Janssens, exposes in a clear and lucid way the well-known objections of Kant to Hedonism and appears as an irrefutable champion of Hedonism against the author of the *Critique of Practical Reason*.

Among the articles devoted to the exposition of the scholastic principles, we will mention the able essay on the conception of creation, written by A. D. Sertillanges. The scholastic conception of creation had already been exposed by the same writer as far back as 1907 in a work entitled *L'idée de création dans saint Thomas d'Aquin*, which the present work reproduces with very little change.

Both of these works are the ablest expositions of the Thomistic doctrine of creation with which we are acquainted.

We are almost surprised to notice that a volume which probably represents the work of the great neo-scholastic center during the past year does not study any scholastic philosopher except St. Thomas Aquinas. In point of fact, were it not that the medieval philosophers are incidentally mentioned in the article of J. Maritain on the Thomistic revival, we might suppose that St. Thomas was the only philosopher of the Middle Ages.

He is the greatest and the one whose influence has been most lasting but a serious study of the Middle Ages ought to embrace the different writers of that time in their historical setting. It ought to take into account the different elements which have influenced them, and to show how their philosophical principles have made out modern philosophy, and have built our own views of the world. It is in this fruitful and only scientific spirit that medieval philosophy is studied at the Sorbonne, under the able direction of M. François Picavet. In American universities, if scholastic philosophy is studied at all, it is as a mummified system of thought, dead for a long time, unconnected with the philosophy of our day. And thus Descartes appears to us as a creator, who built a system out of nothing, as the true father of modern thought, whereas Descartes is as decidedly a scholastic as St. Thomas Aquinas.

I do not mean that scholastic philosophy is studied at Louvain in such an unscientific spirit. The numerous volumes on medieval writers published by the Institut supérieur de Philosophie, and the able essays on Ockam which have just appeared in the *Revue Néoscholastique* prove that such is not the case. We simply suggest that in a volume which seems to be representative of the work of the great neo-scholastic center, some study of that kind ought to have appeared.

J. L. PERRIER.

NEW YORK.

JOURNALS AND NEW BOOKS

SCIENTIA. May, 1921. *The Problem of the Variable Stars in its Present State* (pp. 341-344): J. G. HAGEN (Rome).—Most, and perhaps all, periodic variability in the light of stars is due to eclipse by dark companions. But variables of more than four months' period are so different in many respects from short period variables that this explanation is still doubtful in their case. *La contribution que les divers pays ont donnée aux progrès de la physique. I. Physique Newtonienne et Physique de Fresnel-Max-*

well-Clausius (pp. 345-360): ABEL REY (Paris).—Until well into the nineteenth century physics was dominated by the analogy of Newtonian gravitation, centers of force and law of inverse squares. France developed what England originated. Then, in the later nineteenth century came the period of ether media and electro-magnetic forces. England and Germany developed what France originated. *Come la paleontologia rivela l'origine e l'evoluzione animale e vegetale* (pp. 361-370): GIUSEPPE SERGI (Rome).—A strikingly interesting paper, maintaining that all the evidence of paleontology, like that of Mendelism, favors a separate origin for distinct species, and tells against transformism. *La Cour permanente de justice internationale* (pp. 371-380): GIULIO DIENA (Turin).—Brief statement of what has been accomplished towards establishing permanent international courts. *Reviews of Scientific Books and Periodicals*.

Guastella, Cosmo. *Le Ragioni del Fenomenismo*. Volume I. Palermo: Emanuele Priulla Editore. 1921. Pp. 869. Lire 30.

Sorley, W. R. *Moral Values and the Idea of God*. Second edition. Cambridge University Press. Pp. xix + 527.

Science of Legal Method. Select Essays by Various Authors. Translations by Ernest Bruncken and Layton B. Register. New York: The Macmillan Co. 1921. Pp. lxvii + 593.

NOTES AND NEWS

The fifteenth annual meeting of the American Association for Labor Legislation will be held at the William Penn Hotel, Pittsburgh, on Wednesday and Thursday, December 28-29. The general subject for consideration is "Unemployment, and What Should Be Done about It." The speakers will be announced later. In addition to the main topic, authorities on workmen's compensation will discuss recent important developments in that field. All sessions are open to the public.

M. Émile Boutroux, professor of philosophy at the Sorbonne since 1885, died in Paris on November 22 at the age of seventy-six.

The *Revue de Métaphysique et de Morale* for 1922 may be obtained for \$1.20. Subscriptions may be sent to Professor James H. Woods, 16 Prescott Hall, Cambridge, Massachusetts, who will be glad to collect them and send them to Paris.

THE JOURNAL OF PHILOSOPHY

ON MY FRIENDLY CRITICS¹

NOW that for some years my body has not been visible in the places it used to haunt (my mind, even then, being often elsewhere), my friends in America have fallen into the habit of thinking of me as dead, and with characteristic haste and kindness, they are writing obituary notices, as it were, on my life and works. Some of these reach me in this other world—the friendly ones, which their authors send me; and without the aid of any such stratagem as Swift's, I have the strange pleasure of laughing at my own epitaphs. It is not merely the play of vanity that enters into this experience, nor the occasional excuse for being unfair in return: there comes with it a genuine discovery of the general balance of one's character. A man has unrivalled knowledge of the details of his life and feelings, but it is hard for him to compose his personage as it appears in the comedy of the world, or in the eyes of other people. It is not true that contemporaries misjudge a man. Competent contemporaries judge him perfectly, much better than posterity, which is composed of critics no less egotistical and obliged to rely exclusively on documents easily misinterpreted. The contemporary can read more safely between the lines; and if the general public often misjudges the men of its own time, the general public hears little of them. It is guided by some party tag or casual association, by the malignity or delusion of some small coterie that has caught its ear: how otherwise should it judge ideas it has not grasped and people it has not seen? But public opinion is hardly better informed about the past than about the present, and histories are only newspapers published long after the fact.

As to my person, my critics are very gentle and I am sensible of the kindness, or the diffidence, with which they treat me. I do not mind being occasionally denounced for atheism, conceit, or detachment. One has to be oneself: and so long as the facts are not misrepresented—and I have little to complain of on that score—any judgment based upon them is a two-edged sword: people simply condemn what condemns them. I am not in the least abashed at being called names which so easily turn into compliments: I can al-

¹ This article, much too personal and poetic in places for a scientific journal, is one of a forthcoming collection of *Soliloquies in England*. I hope the reader will understand and forgive.

ways say to myself that my atheism, like that of Spinoza, is true piety towards the universe and denies only gods fashioned by men in their own image, to be servants of their human interests; and that even in this denial I am no rude iconoclast, but full of imaginative sympathy with the impulses of idolaters. My detachment from things and persons is also affectionate, and simply what the ancients called philosophy: I consent that a flowing river should flow; I renounce that which betrays, and cling to that which satisfies, and I relish the irony of truth; but my security in my own happiness is not indifference to that of others: I share their joy in their true loves. That I am guilty of vanity, it would be folly to deny: what artist, what thinker, what parent does not over-estimate his own offspring? Can I suppress an irresistible sense of seeing things clearly, and a keen delight in so seeing them? Frankly, I think these attitudes of mine are justified by the facts; but I entirely understand how offensive they must be to anyone who thinks they are not justified, or who fears that they may be. Let the irritant work. The arrows of anger miss their mark. Aimed at some imaginary evil bird in the heavens, they scarcely startle the poet wandering in his dell. He hears them pass over his head and bury their venom far away in the young grass. Far away too his friends are designing his hollow cenotaph, and inscribing it with seemly words in large capitals.

On the other hand, in respect to my impersonal opinions, which I have always tried to express with the most scrupulous clearness, I notice a little bewilderment, and some obtuseness. Of course, if people are repelled by the subject or by the manner (which is an integral part of the thought) and find it all unintelligible, that is no fault of theirs, nor of mine: but I speak of the initiated and of such as are willing to lend their minds to my sort of lucubration. For instance, when more than twenty years ago, I wrote my *Interpretations of Poetry and Religion*, this is what William James said of it: "What a perfection of rottenness . . . how fantastic a philosophy! as if the 'world of values' were independent of existence. It is only as *being* that one thing is better than another. The idea of darkness is as good as that of light, as ideas. There is more value in light's *being*." William James was a "radical empiricist," so that for him the being of light could not have meant anything except its being in idea, in experience. The fantastic view must therefore be some other, apparently that in the realm of unrealized essences, apart from any observer, one essence can be better than another. But how could anyone attribute such a view to me? The whole contention of my book was that the glow of human emotion lent a

value to good poetry which it denied to bad, and to one idea of God which it denied to another. My position in this matter was that of empirical philosophy, and of James himself. In his book on *Pragmatism*, he says that the being of atoms is just as good as the being of God, if both produce the same effects in human experience; and I remember once mildly protesting to him on that point, and asking him if, apart from these effects on us, the existence of God, assuming God to be conscious, would not have a considerable value in itself: and he replied "Of course; but I was thinking of our *idea*." This was exactly the attitude of my book; I was thinking of our religious and poetic ideas, and reducing their value to what they stood for in the elements of our experience or in our destiny.

I think I see, however, where the trouble lies. The practical intellect conceives everything as a source of influence. Whether it be matter or other people, or tutelary spirits, that which we envisage in the first instance is not our idea of those objects but their operation on us, or our operation on them. Now a source of influence can not be non-existent. Accordingly, what concerns earnest people in their religion is something, they know not what, which is real. They are not interested in forming poetic or dramatic pictures of the gods, as the Greeks did in their mythology, but rather in finding a living God to help them as even the Greeks did in their home cultus and their oracles. This living God, since he is to operate and to be worked upon, must exist; otherwise the whole practise of religion becomes a farce. So also in love or in science, it would be egotistical and affected to gloat on our own ideal, turning our backs on the adorable person or the natural process before us. It is the defect of empirical and critical philosophy, that it turns our attention too much to the subjective: legitimately, I think, if the purpose is merely to study the growth and logic of our beliefs, but illegitimately (as I have always maintained) if the purpose is malicious, and if it is assumed that once we have understood how our beliefs are formed we shall abandon them and believe nothing. Empiricism and idealism are, as Kant called them, excellent cathartics, but they are nasty food; and if we try to build them up into a system of the universe the effort is not only self-contradictory (because we ought then to possess only ideas without beliefs) but the result is, in the words of William James, fantastic and rotten.

Now, however much I may have studied the human imagination, I have never doubted that even highly imaginative things, like poetry and religion, express real events, if not in the outer world, at least in the inner growth or discipline of life: like the daily experience of the senses and like the ideas of science (both of which are,

also symbolical) they form a *human language*, all the terms of which are poetical and its images dream-images, but which symbolizes things and events beyond it and is controlled from outside. This would be perfectly evident to any other animal who should discover how men see the world or what they think of it: why should we be less intelligent than any other animal would be about ourselves? Enlightenment consists in coming nearer and nearer to the natural objects that lend a practical meaning to our mental discourse: and when the material significance of our dreams is thus discovered, we are lost in admiration at the originality, humor, and pictorial grandeur of the imagery in which our experience comes to us, as we might be at the decorative marvels of tapestry or of stained glass: but now without illusion. For we can now discriminate the rhythms and color proper to our mental atmosphere from the extrinsic value of discourse as a sign for things and events beyond it. These external things and events make up what we call nature, the reel round which our dreams are wound, the all-governing influence that controls them. It is nature, or some part of nature, or some movement of nature occurring within us or affecting us, that is the true existent object of religion, of science, and of love. The rest is a mere image.

My naturalism is sometimes taxed with being dogmatic, and if I were anxious to avoid that reproach, I might easily reduce my naturalism to a definition and say that if experience has any sources whatever, the sum and system of these sources shall be called nature: and such is the etymological meaning of the words *natura*, *φύσις* and *genesis*—the way of birth or the breed of whatever comes into existence. I know what speculative difficulties cluster about the notion of cause, which in one sense is quite unnecessary to science: but so long as time, process, and derivation are admitted at all (and there could be no natural science or history without them) events may be traced back to earlier events which were their sources; and this universal flux of events will be called nature. Any existing minds, and any gods exercising power will evidently be parts of nature. But I am not concerned to avoid dogmatism on such a point. Every assertion about existence is hazarded, it rests on animal faith, not on logical proof; and every argument to support naturalism, or to rebut it, implies naturalism. To deny that there are any facts (if skepticism can be carried so far) is still to dogmatize, no less than it would be to point to some fact in particular: in either case we descend into the arena of existence, which may betray our confidence. Any fact, if admitted, commits us to naturalism, to an existence which discourse plays about and regards, but does not create.

It is the essence of the practical intellect to prophesy about nature, and we must all do it. As to the truth of our prophecy, that is always problematical, because nature is whatever nature happens to be; and as to our knowledge, starting as it does from a single point, the present position of the thinker, and falling away rapidly in clearness and certainty as the perspective recedes, it can not pretend to draw the outlines of nature *a priori*: yet our knowledge of nature, in our neighborhood and moral climate, is very considerable, since every known fact is a part of nature. It is quite idle to deny, for instance, that human life depends on cosmic and hygienic influences; or that in the end all human operations must run back somehow to the rotation of the earth, to the rays of the sun, to the moisture and fructification of the soil, to the ferment there of vegetative and dreaming spirits, quickened in animals endowed with locomotion into knowledge of surrounding things: whence the passionate imaginations which we find in ourselves. I know things might have been arranged otherwise: and some of those alternative worlds may be minutely thought out in myth or in philosophy, in obedience to some dialectical or moral impulse of the human mind; but that all those other worlds are figments of fancy, interesting as poetry is interesting, and that only the natural world, the world of medicine and commerce, is actual, is obvious; so obvious to every man in his sane moments that I have always thought it idle to argue the point. Argument is not persuasive to madmen; but they can be won over by gentler courses to a gradual docility to the truth. One of these gentler courses, and the one I have always taken, is this: to remember that madness is human, that dreams have their springs in the depths of human nature and of human experience; and that the illusion they cause may be kindly and even gloriously dispelled by showing what the solid truth was which they expressed allegorically. Why should one be angry with dreams, with myth, with allegory, with madness? We must not kill the mind, as some rationalists do, in trying to cure it. The life of reason, as I conceive it, is simply the dreaming mind becoming coherent, devising symbols and methods, such as languages, by which it may fitly survey its own career, and the forces of nature on which that career depends. Reason thereby raises our vegetative dream into a poetic revelation and transcript of the truth. That all this life of expression grows up in animals living in the material world, is the deliverance of reason itself, in our lucid moments; but my books, being descriptive of the imagination and having perhaps some touches of imagination in them, may not seem to have expressed my lucid moments

alone. They were, however, intended to do so; and I ought to have warned my readers more often that such was the case.

I have no metaphysics, and in that sense I am no philosopher, but a poor ignoramus trusting what he hears from the men of science. I rely on them to discover gradually exactly which elements in their description of nature may be literally true, and which merely symbolical: even if they were all symbolical, they would be true enough for me. My naturalism is not at all afraid of the latest theories of space, time, or matter: what I understand of them, I like, and am ready to believe: for I am a follower of Plato in his doctrine that only knowledge of ideas (if we call it knowledge) can be literal and exact, whilst practical knowledge is necessarily mythical in form, precisely because its object exists and is external to us. An arbitrary sign, indication, or name can point to something without at all fathoming its nature, and *therefore* can be knowledge of fact: which an esthetic or logical elucidation of ideas can never be. I am quite happy in this human ignorance mitigated by pictures, for it yields practical security and poetic beauty: what more can a sane man want? In this respect I think sometimes I am the only philosopher living: I am resigned to being a mind. I have put my hand into the hand of Nature, and a thrill of sympathy has passed from her into my very heart, so that I can instinctively see all things, and see myself, from her point of view: a sympathy which emboldens me often to say to her, "Mother, tell me a story." Not the fair Sheherazade herself knew half the marvelous tales that Nature spins in the brains of her children. But I must not let go her hand in my wonder, or I might be bewitched and lost in the maze of her inventions.

Why does a child love stories and a philosopher systems? Because they express the vitality of his dreaming mind. An illusion is such only when wrongly used to describe an alleged existence. It must always be expressive of the soul that breeds it; and if the movement of the soul thus expressed is deep and normal, the idea it evokes will be morally important, even if nothing external corresponds to it: it will be a true ideal. We all smile benevolently at the illusions of lovers, because we know the sound instinct and the sane happiness which that moment of lyric love symbolizes and forbodes, as a sacrament might synthesize a whole life of grace; and I think the perfectly similar illusions of the religious fancy would seem to us quite as innocent (as they did to the Greeks) if an insane attempt to turn religion into science had not made us quarrelsome and bitter on the subject. So the Platonic notion of an Absolute Good is vain and empty if you consider it as a discovery: such an existing object would be blank and not a good at all; but con-

sidered as an expression of a movement in the soul, it is the counterpart of our total nature reduced to harmony: it is the supreme principle of taste and morals. Applied, this principle would dictate a pervasive goodness in all things and all actions; but as these details must take form gradually, according to their occasions, we may express the common, inner fountain of their excellence and call it Love. As love is a vital harmony in a disciplined will, so its object or goal (which is all good things) may be presented to the devout imagination by a single symbol—God, or the deified spirit of some friend of the human soul, become the guide of all aspiration. What renders this mysticism sound is the fact that it expresses a trained human nature. Platonism would be vapid indeed if it were not the poetry of moral experience. As such only I understand and accept it, not as a chimerical metaphysics: and it seems to me merely a heightening of normal human intelligence. Platonism is intuition quickened by love.

Even those sensations which convey the most urgent information are fictions in form: it is not this smoke nor this smell that is burning down the house. Sensible ideas are signals; they prompt our action far more clearly than they reveal their objects; and it is only by prompting us to study those objects further that they begin to reveal them with any degree of accuracy. The whole texture of experience is poetical: the colored and passionate language of sense is a primary literature. Like words, its units are not the units of nature (if nature has units); they are terms invented to abbreviate, cover, and convey their occasions, by rendering them on the human scale and in a manageable notation. A symbol is far better, both practically and poetically, than would be an exhaustive or photographic perusal of natural things in thought. It is enough for nature to exist once; thought supervenes to express the readiness of living souls to meet whole classes of events, taken loosely and on the scale of our bodies. As when I hear the name John, that brief sound, if I understand who John is, prepares me to face all the probable aspects and actions of that person, so every idea of sense or science is a summary sign, on a different plane and scale altogether from the diffuse material facts which it covers—one unexampled color for many rays, one indescribable note for many vibrations, one picture for many particles of paint, one word for a series of noises or letters. A word is a very Platonic thing: you can not say when it begins, when it ends, how long it lasts, or where it ever is; and yet it is the only unit you mean to utter, or normally hear. Platonism is the intuition of

essences in the presence of things, in order to describe them: it is mind itself.

A workman must not quarrel with his tools, nor the mind with ideas; and I have little patience with those philanthropists who hate everything human, and would reform away everything that men love or can love. Yet if we dwell too lovingly on the human quality and poetic play of ideas, we may forget that they are primarily signs. The practical intellect is always on the watch for ambient existences, in order to fight or to swallow them: and if by chance its attention is arrested at an idea, it will instinctively raise that idea to the throne of power which should be occupied only by the thing which it stands for and poetically describes. Ideas lend themselves to idolatry. There is a continual incidental deception into which we are betrayed by the fictitious and symbolical terms of our knowledge, in that we suppose these terms to form the whole essence of their objects. I think I have never failed to point out this danger of illusion, and to protest against idolatry in thought, so much more frequent and dangerous than the worship of stocks and stones: but at the same time, as such idolatry is almost inevitable, and as the fictions so deified often cover some true force or harmony in nature, I have sometimes been tempted in my heart to condone this illusion. In my youth it seemed as if a scientific philosophy was unattainable: human life, I thought, was at best a dream, and if we were not the dupes of one error, we should be the dupes of another: and whilst of course the critics must make this mental reservation in all his assents, it was perhaps too much to ask mankind to do so; so that in practise we were condemned to overlook the deceptiveness of fable, because there would be less beauty and no more truth in whatever theory might take its place. I think now that this despair of finding a scientific philosophy was premature, and that the near future may actually produce one: not that its terms will be less human and symbolical than those to which we are accustomed, but that they may hug more closely the true movement and the calculable order of nature. The truth, though it must be expressed in language, is not for that reason a form of error. No doubt the popularizers of science will turn its language into a revelation, and its images into idols: but the abstract character of these symbols will render it easier for the judicious to preserve the distinction between the things to be described and the science which describes them.

Was it, I wonder, this touch of sympathy with splendid error, bred in me by long familiarity with religion and philosophy, that offended my honest critics? Now that I show less sympathy with it, will they be better satisfied? I fear the opposite is the case.

What they resented was rather that in spite of all my sympathy, and all my despair about science, it never occurred to me to think those errors true because they were splendid—except true to the soul. Did they expect that I should seriously debate whether the Ghost in Hamlet really came out of Purgatorial fires, and whether Athena really descended in her chariot from Olympus and pulled Achilles by his yellow hair when he was in danger of doing something rash? Frankly, I have assumed—perhaps prematurely—that such questions are settled. I am not able nor willing to write a system of magic cosmology, nor to propose a new religion. I merely endeavor to interpret as sympathetically and imaginatively as I can, the religion and poetry already familiar to us: and I interpret them, of course, on their better side, not as childish science, but as subtle creations of hope, tenderness, and ignorance.

So anxious was I, when younger, to find some rational justification for poetry and religion, and to show that their magic was significant of true facts, that I insisted too much, as I now think, on the need of relevance to fact even in poetry. Not only did I distinguish good religion from bad by its expression of practical wisdom, and of the moral discipline that makes for happiness in this world, but I maintained that the noblest poetry also must express the moral burden of life and must be rich in wisdom. Age has made me less exacting, and I can now find quite sufficient perfection in poetry, like that of the Chinese and Arabians, without much philosophic scope, in mere grace and feeling and music and cloud-castles and frolic. I assumed formerly—being more abstractly psychological in method than I am now—that an idea could have depth and richness only if somehow redolent of former experiences of an overt kind. I had been taught to assign no substance to the mind, but to conceive it as a system of successive ideas, the later ones mingling with a survival of the earlier, and forming a cumulative experience, like a swelling musical movement. Now, without ceasing to conceive mental discourse in that way, I have learned, with the younger generation, to rely more on the substructure, on the material and psychical machinery that puts this conscious show on the stage, and pulls the wires. Not that I ever denied or really doubted that this substructure existed, but that I thought it a more prudent and critical method in philosophy not to assume it. Certainly it is a vast assumption: but I see now an irony in skepticism which I did not see when I was more fervid a skeptic: namely, that in addressing anybody, or even myself, I have already made that assumption: and that if I tried to rescind it, I should only be making another, no less gratuitous, and far more extravagant: I should be assuming that the

need of making this assumption was a fatal illusion, rather than a natural revelation of the existence of an environment to a living animal. This environment has been called the unknowable, the unconscious and the subconscious—egotistical and absurd names for it, as if its essence was the difficulty we have in approaching it. Its proper names are matter, substance, nature, or soul; and I hope people will learn again to call it by those old names. When living substance is thus restored beneath the surface of experience, there is no longer any reason for assuming that the first song of a bird may not be infinitely rich and as deep as heaven, if it utters the vital impulses of that moment with enough completeness. The analogies of this utterance with other events, or its outlying suggestions, whilst they may render it more intelligible to a third person, would not matter much to its inward force and intrinsic beauty. Its lyric adequacy, though of course not independent of nature, would be independent of wisdom. If besides being an adequate expression of the soul, the song expressed the lessons of a broad experience, which that soul had gathered and digested, this fact certainly would lend a great tragic sublimity to that song: but to be poetical or religious intrinsically, the mystic cry is enough.

I notice that men of the world, when they dip into my books, find them consistent, almost oppressively consistent, and to the ladies everything is crystal-clear; but the philosophers say that it is lazy and self-indulgent of me not to tell them plainly what I think, if I know myself what it is. Mr. Bertrand Russell once observed (probably in fun) that mine were the hardest books he had ever read: and Mr. G. E. Moore quite seriously avers that *The Life of Reason* is so confused as to be useless. Useless for what? Of course every possible view is played with there, fast and loose; but where is the imagination of a person who does not see that it is imagination I am speaking for? Because I describe madness sympathetically, because I lose myself in the dreaming mind, and see the world from that transcendental point of vantage, while at the same time interpreting that dream by its presumable motives and by its moral tendencies, these quick and intense reasoners suppose that I am vacillating in my own opinions. My own opinions are a minor matter, and there was no need, for the task in hand, that I should put them forward: yet as a matter of fact, since I reached the age of manhood, they have not changed. In my adolescence I thought this earthly life (not unintelligibly, considering what I had then seen and heard of it) a most hideous thing, and I was not disinclined to dismiss it as an illusion for which perhaps the Catholic epic might be substituted to advantage, as conforming better to the impulses of the soul;

and later I liked to regard all systems as alternative illusions for the solipsist; but neither solipsism nor Catholicism were ever anything to me but theoretic poses or possibilities; vistas for the imagination, never convictions. I was well aware, as I am still, that any such vista *may* be taken for true, because all dreams are persuasive while they last; and I have not lost, nor do I wish to lose, a certain facility and pleasure in taking those points of view at will, and speaking those philosophical languages. But though as a child I regretted the fact and now I hugely enjoy it, I have never been able to elude the recurring, invincible, and ironic conviction that whenever I or any other person feign to be living in any of those non-natural worlds, we are simply dreaming awake.

In general, I think my critics attribute to me more illusions than I have. My dogmatism may be a fault of temper or manner, because I dislike to stop to qualify or to explain everything: but in principle it is raised more diffidently and on a deeper skepticism than most of the systems which are called critical. My "essences," for instance, are blamed for being gratuitous inventions or needless abstractions. But essences appear precisely when all inventions are rescinded and the irreducible manifest datum is disclosed. I do not ask anyone to *believe* in essences. I ask them to reject every belief, and what they will have on their hands, if they do so, will be some essence. And if, believing nothing, they could infinitely enlarge their imagination, the whole realm of essence would loom before them. This realm is no discovery of mine: it has been described, for instance, by Leibniz in two different ways; once as the collection of all possible worlds, and again as the abyss of non-existence, *le néant*, of which he says: "The non-existent . . . is infinite, it is eternal, it has a great many of the attributes of God; it contains an infinity of things, since all those things which do not exist at all are included in the non-existent, and those which no longer exist have returned to the non-existent." It suffices, therefore, to deny a thing for us to recognize an essence, if we know at all what we are denying. And the essence before us, whether we assert or deny its existence, is certainly no abstraction; for there is no other datum, more individual or more obvious, from which the abstraction could be drawn. The difficulty in discerning essences is simply the very real difficulty which the practical intellect has in abstaining from belief, and from everywhere thinking it finds much more than is actually given.

Profound skepticism is favorable to conventions, because it doubts that the criticism of conventions is any truer than they are. Fervent believers look for some system of philosophy or religion that shall be *literally* true and worthy of superseding the current assumptions

of daily life. I look for no such thing. Never for a moment can I bring myself to regard a human system—a piece of mental discourse—as more than a system of notation, sometimes picturesque, sometimes abstract and mathematical. Scientific symbols, terms in which calculation is possible, may replace poetic symbols, which merely catch echoes of the senses or make up dramatic units out of appearances in the gross. But the most accurate scientific system would still be only a method of description, and the actual facts would continue to rejoice in their own ways of being. The relevance and truth of science, like the relevance and truth of sense, are pragmatic, in that they mark the actual relations, march and distribution of events, in the terms in which they enter our experience.

In moral philosophy (which is my chosen subject) I find my unsophisticated readers, as I found my pupils formerly, delightfully appreciative, warmly sympathetic, and altogether friends of mine in the spirit. It is a joy, like that of true conversation, to find that we can look and laugh and cry at the world so unfeignedly together. But the other philosophers, and those whose religion is of the anxious and intolerant sort, are not at all pleased. They find my morality very loose: I am a friend of publicans and sinners, not (as they are) in zeal to reform them, but because I like them as they are; and indeed I am a pagan and a moral skeptic in my naturalism. On the other hand (and this seems a contradiction to them) my moral philosophy looks strangely negative and narrow; a philosophy of abstention and distaste for life. What a horrible combination, they say to themselves, of moral license with moral poverty! They do not see that it is because I love life that I wish to keep it sweet, so as to be able to love it altogether: and that all I wish for others, or dare to recommend to them, is that they should keep their lives sweet also, not after my fashion, but each man in his own way. I talk a great deal about the good and the ideal, having learned from Plato and Aristotle—the living have never shown me how to live)—that, granting a human nature to which to appeal, the good and the ideal may be defined pretty accurately. Of course, they can not be defined immutably, because human nature is not immutable; and they can not be defined in such a way as to be transferred without change from one race or person to another, because human nature is various. Yet any reflective and honest man, in expressing his hopes and preferences, may expect to find many of his neighbors agreeing with him, and when they agree they may work politically together. Now I find that I am sometimes blamed for not laboring more earnestly to bring down the ideal good of which I prate into the lives of other men. My critics suppose, apparently, that I mean by the ideal good

some particular way of life or some type of character which is alone virtuous, and which ought to be propagated. Alas, their propagandas! How they have filled this world with hatred, darkness, and blood! How they are still the eternal obstacle, in every home and in every heart, to a simple happiness! I have no wish to propagate any particular character, least of all my own; my conceit does not take that form. I wish individuals, and races, and nations to be themselves, and to multiply the forms of perfection and happiness, as nature prompts them. The only thing which I think might be propagated without injustice to the types thereby suppressed is harmony; enough harmony to prevent the interference of one type with another, and to allow the perfect development of each type. The good, as I conceive it, is happiness, happiness for each man after his own heart, and for each hour according to its inspiration. I should dread to transplant my happiness into other people; it might die in that soil; and my critics are the first to tell me that my sort of happiness is a poor thing in their estimation. Well and good. Let them take their own course: but how should I be able to speed them on it against my judgment? They do not place their happiness in the things I have, or can give. My theory of the ideal, and my experience of it, assure me that it is an adventitious denomination and a moral category. Anything is an ideal, whether existent or non-existent, if it fulfills the demands of some living being. Let, then, every soul consider what it requires and in what things it might find an unpoisoned happiness. No man can set up an ideal for another, nor labor to realize it for him, save by his leave or as his spokesman, perhaps more ready with the right word. To find the comparatively right word, my critics seem to agree, is my art. Do I not practise it for their benefit as best I can? Should I leave writing, and go and dig? Is it I who am indifferent to the being of light? Who loves it more, or basks in it more joyfully? And do I do nothing that the light may come? Is it I who tremble lest at its coming it should dissolve the creatures begotten in darkness? Ah, I know why my critics murmur and are dissatisfied. I have no earnestness. I do not endeavor to deceive myself, nor to deceive them, nor to aid them in deceiving themselves. They will never prevail on me to do that. I am a disciple of Socrates.

GEORGE SANTAYANA.

A DISCUSSION OF "MIND DISCERNED"

AFTER reading Professor Woodbridge's interesting account¹ of the basis of interpretation by a determinate mind of the total universe of discourse, I find in myself the same attitude to-

¹ This JOURNAL, Vol. XVIII, No. 13, pp. 337-347.

ward his viewpoint that he felt toward the passage from Santayana which he quoted. I should not care to defend an opposite standpoint. I feel the "haunting suggestiveness" of all that he says. It is because I believe that he would extend his argument so as to reach certain uncongenial conclusions that I venture to state what I believe to be its true implications.

Professor Woodbridge's chief point is that the possibility of interpretation rests, not upon the fact that determinate minds inhabit certain animal bodies, but on the fact that the transcendental mind has or is a structural unity, *i.e.*, that the total universe of discourse is characterized by a logical structure that is real. I find no difficulty in such a proposition. I would pass on at once to consider the function of the determinate mind in interpretation were it not for a certain ambiguity which appears in a comparison of "Mind Discerned" with a previous article, "Structure."² In "Mind Discerned" it is noted that the physicist, the psychologist, and the plain man all deal with the same subject-matter. Here the constant character of the total universe of discourse appears to be based on the persistence of certain fundamental qualities which compose its subject-matter and which may be talked about, although interpreted variously. On the other hand, in "Structure" the logical web of relations is declared to be the one element of the universe that is discoverable and permanent. It is implied that subject-matter is in constant flux, and that qualities are convertible into one another. Now I can not believe that Professor Woodbridge would attempt to evolve "matter" out of "form," and this belief leads me to suggest a reconciling principle, which he states in another connection, namely, that subject-matter and interpretation are never divorced. The qualities, therefore, that are momentarily embodied in a specific structure, can not exist apart from some embodiment, nor can the structure exist apart from the subject-matter that is embodied. You can not separate the qualities of a watch from its structure.

In the total universe of discourse different types of structure appear to embody subject-matter in characteristic ways. In any inquiry, therefore, we have to consider both the type of structure involved and the qualities which the structure embodies. Let us do this in respect to the determinate mind.

Professor Woodbridge notes that interpretation occurs only in connection with animal bodies. He admits with Bergson their "privileged character," that the scope of inquiry is extended by their ability to move about. He finds the possibility of interpreta-

² *Ibid.*, Vol. XIV, No. 25, pp. 680-688.

tion to rest upon a congeniality of structure which applies both to them and to the objects interpreted. He *seems*, however, to exclude the determinate mind (understanding by this no more than the nervous system) as a chief factor in interpretation. One of the grounds of such exclusion is the fact that the animal body may be studied just as other objects, all lying within the same universe of discourse. Granting that the initial possibility of interpretation is due to the structure of the total universe of discourse, mind in the transcendental sense, let us proceed to examine the behavior of the human body when interpretation occurs. Quite aside from any "subjective" implications, we may observe two persons make two distinct drawings of the same object, and we may observe that the drawings, apart from technical accuracy, differ markedly in character. Or we may listen to two individuals make different sounds to denote the color of the same object. We have here, evidenced in behavior, a diversity of interpretations. To what is the difference of interpretations due? Consider the form of these examples. It is not assumed that certain ideas of a determinate mind get united with a constant subject-matter. We point rather to two diverse interpretations lying within the same universe of discourse. In Professor Woodbridge's language, we have differences due to the universe as a whole which may imply no more than the interdependence of its parts.

As I have stated, I agree that the possibility of interpretation, meaning genuine understanding, lies in the presence of congeniality of structure between the reacting organism and the subject-matter reacted to. It is to be expected that psycho-physical monism, in its further development, will do much toward making clear the nature of this congeniality. But I can not account for the variability of interpretation without assuming that the reacting organism is a powerful factor in whatever interpretation is made. If one and only one interpretation were made in each instance, the interpretation might be explained by referring to a structure common to both organism and environment. In such a case, the functioning of the reacting organism would be passive. But since many interpretations are possible, some of which are branded later as true, some as false, it is most natural to ascribe the divergency, which at times may attain to error, to the part played by the reacting organism.

Another fact which leads me to believe that animal bodies are not on a par with other objects as objects of study is that I can not predict their total reactions as I predict chemical reactions. The behavior of an animal body in the presence of other objects would

therefore seem to be due to factors within the body, rather than to observable features. Thus, the distinctive characteristic of higher animal organisms, the nervous system, would appear to be important in cases where interpretation occurs, not only for its commonness of structure and subject-matter with other objects in the total universe, but also for its own distinctive structure and subject-matter.

It is easy, I believe, to point out cases where structure is embodied in subject-matter, both of which are peculiar to animal bodies. I am on a par with other human bodies in being capable of making interpretations. Now within the total universe of discourse are my emotions and feelings. I can not, however, observe them, or similar items in the universe, in connection with any animal body other than my own. I can, it is true, observe reactions of the body in others which are similar to those that I make in what I conceive to be similar situations, and I infer that similar emotions and feelings are present in connection with bodies other than my own. But I can not perceive them. I do not regard this fact as indicating the need of postulating a supernatural mind, for I believe that if I had the means I could view the emotions and feelings of others as items in the one universe of discourse. But from the facts that emotions and feelings *do* differ "as objects of study" from other objects, and that they are hidden from me save in connection with my own body, I believe that I should find them, not as items common to bodies and other objects in the total universe, but as qualities embodied in the animal brain. I am forced to conclude, therefore, that emotions and feelings are subject-matter located in a particular time and space, appearing to any individual immediately only in introspection, and mediately as nerve-tissue.

The same argument might be applied in the case of certain sensations, notably those of touch and temperature. I prefer here, however, to enlarge upon the theme of difference of interpretation of the same subject-matter by different individuals. As science progresses, qualities seem less stable than structure. To the physicist, the leaf of a tree becomes an organization of molecules, these in turn being regarded as organizations of atoms and electrons. As, however, "form" and "matter" are always conjoined, subject-matter never entirely disappears, although it may degenerate into the subject-matter of formulae. But where the existent universe is talked of, some conception of an ultimate substance (not in the metaphysical sense) remains. Now even if qualities are shown to be thus fleeting, they are real in so far as they are themselves. Further, if I am able to refer to a green leaf as subject-matter and

am not under some hallucination, but react to an object, some continuity of structure of my reacting organism with that of the other object, "tree," must be presupposed. Now one of the characteristics of structure is that it is discovered. I learn what it is when I have for some time "come up against it." So that just as I may not expect to discover the molecular structure of a leaf by simple inspection, so I must not expect to discover the structure that underlies the quality "green" by mere observation. I can experience it, possibly exhibit it, but its fundamental structure will be discovered if it be known at all.

Common psychological data lead me to connect green with the reacting organism rather than with the other object "leaf." And so, just as the watch has its own structure, I conclude that the structure of "green" is peculiar to certain animal bodies. This conclusion implies no supernatural mind. It means, rather, that if I were able to inspect the structure of the human nervous system, I should perceive there a complex of subject-matter and structure which I know as "green," and which I may call a green-sensation. But owing to the fact that I am unable to inspect either my own or another's nervous system to the fullest extent so as to disclose its characteristic structure, I am able to know a green-sensation only as *it functions* in my own reacting organism.

I conclude, therefore, that, although the possibility of all interpretation may be said to rest on a community of structure between all objects, animal bodies, and especially the human body, have organs that possess a characteristic matter and form of their own. This "privileged character" of animals possessing a nervous system is important in deciding what is the nature of objects in the total universe of discourse in which nervous systems are included. Epistemology is that branch of philosophy which endeavors to set these matters straight. It does not attempt to divorce subject-matter and interpretation, but to examine the nature of certain of their offspring.

MAURICE PICARD.

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REVIEWS AND ABSTRACTS OF LITERATURE

Les Philosophies Pluralistes d'Angleterre et d'Amérique. JEAN WAHL. Paris: Alcan. 1920. Pp. 323.

M. Wahl has given us in this volume an interesting and competent study of one of the recent tendencies in English and American thought. His discussion of contemporary pluralistic philosophies is divided into five sections. The first section treats of the monisms

formulated in England and America under the influence of German idealism, monisms which because of their abstractness and seeming contradiction of experience led to the pluralistic revolts. The second deals with "the formation of the pluralism," through the criticisms of the prevailing monisms by such writers as Fechner and Lotze in Germany, Lutoslawski in Poland, Ménard and Renouvier in France, and Mill, Bain, Myers, and Peirce in England and America. The third and longest section is devoted wholly to the work of William James. The fourth describes the various movements which arose under the influence of one or another of James's leading ideas. Of these movements, fairly full accounts are given of Schiller and the school of Oxford, of Howison and the school of California, and of neo-realism, while brief mention is made of Dewey and the Chicago school and of the beginnings of the critical realism. The fifth section is devoted to summary and criticism of the diverse pluralisms, with interesting generalizations on the significance of the whole recent development.

If it were not for the concluding section of M. Wahl's work, the book might well have been entitled "The Philosophy of William James, its motivations, sources, and influence." Such a title would be less likely to disappoint M. Wahl's readers. James is viewed as the first real pluralist, and also as almost the last real pluralist. Except in the case of James, no one of the pluralisms dealt with is presented in quite its proper emphases and with sufficiently sympathetic understanding. All others are viewed as preparations for or consequences of his work. Throughout the book M. Wahl gives frequent comparisons between James and the other writers; and although these comparisons are always illuminating, they often tend to lead one away from the controlling ideas of the other writers. While there is much of value in the discussion of the other writers and in the excellent bibliographies about them, the historical sections of M. Wahl's volume must be judged primarily by his treatment of James. And as a treatment of James, the book is indeed admirable. It is thorough and accurate. It both portrays the general spirit and atmosphere of James's philosophy and analyzes the technical details of his metaphysics and epistemology. M. Wahl takes the fundamental element in James's thought to be his radical empiricism, which he regards partly as a sense for concrete fact, partly as an insistence upon the existence of relations as well as terms in our experience (as over against the supposed atomism of Hume's empiricism), and partly as a willingness to regard the emotional as well as the intellectual parts of experience as possessing noetic value. M. Wahl then proceeds to show how James's other ideas follow from his radical

empiricism. (1) Radical empiricism leads to pluralism, because the multitude of concrete facts are in such constant flux, entering into and departing from relations with other facts. "If radical empiricism leads to pluralism, it is precisely because these superficial, momentary, extrinsic relations are so numerous in the world" (p. 126). And with pluralism goes a belief in contingency, real alternatives, genuine possibilities, and an uncertain future. (2) Radical empiricism leads to anti-intellectualism, because it is nominalistic, distrusts general ideas, and regards concepts as misrepresenting the real. "Reality is essentially foreign to reason, to what we conceive as reason" (p. 137). Reality is characterized by an interpenetration of things, while thought is characterized by an exclusiveness of concepts. (3) Radical empiricism leads to temporalism, because experience gives us perpetual change, growth, plasticity, pulsations of movement. "Empiricism asks us to take things one by one, each in its turn; it implies time" (p. 146). (4) Radical empiricism leads to a group of related ideas of importance for ethics, to a conviction of liberty, of free choice, of creation of the future by the human will, hence of moral responsibility. This "moralism" of James, keenly aware of existing evils as well as of existing goods, and holding bravely to a belief in the insecurity of the world, inclines, however, to an optimistic faith, either in the certain, or at least the probable, triumph of the good—hence meliorism. (5) Finally radical empiricism leads to a religious romanticism and a mysticism in which alternative beliefs find at times generous expressions, from the finite God, through "coarse supernaturalism," to a polytheism which is motivated by strongly democratic social sympathies. M. Wahl never attempts to harmonize James or to present his philosophy as a systematic whole. Rather he goes almost too far in pressing home James's inconsistencies, at least when he proceeds to use them as an argument against pluralism in general (cf. pp. 245-251). "James," he writes (p. 242), "united in an original fashion a theory of the will, an irreducible empiricism, and a mysticism; the vision of Hume and the vision of Carlyle, the influence of philosophers as different as Emerson and Renouvier, empiricism, puritanism, and romanticism are mingled in his thought." James continued to crave for the religious satisfactions of monism at the same time that he asserted the reality of the moral struggle in anti-monistic terms. Hence M. Wahl comes almost to characterize pluralism as a tendency to compromise instead of settling issues, as a refusal to give explicit and categorical answers (cf. p. 169).

In the concluding section of his volume, M. Wahl summarizes the recent tendencies towards pluralism. "Pluralism in a general

way is born of a disposition to see the world in its flux and its diversity, to see things in their disordered struggle and in their free harmony" (p. 240). Pluralism is not the creation of one thinker in spite of James's predominating influence, but the cooperative enterprise of a large number of thinkers. Hence one must not expect to find it a consistent body of doctrine. It is largely a philosophy of protest against the monistic world of fixed and determined outcome. It may be taken as the metaphysics of pragmatism, and is usually tied up to realism. "It is a philosophy outside of traditions, yet one in which at the same time all traditions, all ideas come to meet, from those of Protagoras and Zeno to those of Renouvier and Bergson. One finds here the strangest combination of ordinarily opposed doctrine" (p. 254). M. Wahl shows his acuteness of critical penetration in setting forth that while the real motivation towards pluralism is the emotional appeal of a multiple world with irreducible wills of creative power (p. 242), yet the technical development of contemporary pluralism is tied to the problem of the exteriority of relations (p. 251).

A pluralist, in reading M. Wahl's objective and balanced volume, is none the less likely to feel resentment occasionally at certain gentle aspersions upon pluralism. Every pluralism, according to M. Wahl, is self-contradictory. But by being self-contradictory he seems to mean only that every pluralism fails to constitute of itself a stable and finished system. Pluralism succeeds in each of its expressions "only in lighting up some partial aspect of the real, and consequently, as soon as it has lighted up this one aspect, it is as if constrained to light up a different aspect" (p. 255). It remains to consider whether this inability of pluralism to give a finished picture of the world is a defect or a merit. To assume it to be a defect is to beg the question. One should not object to pluralism on the ground that it does not describe the kind of world which monisms have endeavored to set forth. Perhaps there is no finished, no complete, no inclusive aspect of reality; and if there is not, certainly to light up one aspect of the world and then another would be a great merit. At least it can not be taken for granted that philosophy errs when it gives us successive truths about the world, provided these truths do not contradict—and contradiction is not to be found in lack of synthesis into an inclusive final principle. M. Wahl would probably have done well to omit from his historical study his personal objections to pluralism; and yet it can be at once added that he never permits these personal objections to falsify his analysis of the historical material he is examining.

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The Philosophy of Don Hasdai Crescas. MEYER WAXMAN. Columbia University Oriental Studies, Vol. XVII. New York: Columbia University Press. 1920. Pp. 162.

Crescas was a Jewish philosopher of Spain who lived in the 14th century (1340–1410). He rendered himself famous particularly for his antagonism to the philosophical current of his time, which was primarily peripatetic. Many were the Jewish Rabbis who fought against the introduction of Aristotle into Judaism. But they were not philosophers; they combatted Aristotle from the standpoint of religion and tradition. Crescas waged the battle on purely technical grounds. He, too, was a philosopher; he made a careful study of Maimonides, Gersonides, and through them also of Aristotle.

In his monograph on Crescas's philosophy, Dr. Waxman unfolds before us Crescas's criticism of the chief Jewish peripatetics, Maimonides and Gersonides. Crescas criticized some Aristotelian conceptions, such as space, time and the infinite, and also attacked Maimonides's proof of the existence of God and the theory of attributes which embody the Aristotelian principles. He also shows that the Maimonidian solution of the problem of prescience and the possible falls because the foundation is undermined. Crescas finds still more fault with Gersonides for his radical departures from tradition regarding creation, eternity of the world, miracles, etc.

Along with his analysis of Crescas, Dr. Waxman brings to the surface whatever bears suggestion to Spinoza. He finds many points of contact between the two philosophers, but is greatly on his guard not to over-emphasize the comparisons—not a usual precaution for one engrossed in the search for sources. He would not ascribe to Crescas as large an influence as does Joel in his *Zur Genesis der Lehre Spinozas*; nor would he agree with Kuno Fischer who denies any relationship between Spinoza and his Jewish progenitors.

But what escaped the notice not only of Dr. Waxman, but of our historians as well, is the underlying identity between the philosophy of Crescas and that of Gersonides (1288–1344). This is particularly noteworthy since Crescas himself pretends to supersede Gersonides's erroneous system by his own. It was primarily to refute Gersonides's system and nullify his authority that Crescas was prompted to write his philosophical work *Or Adonai*. What brought Crescas on the one hand to fight Gersonides and on the other to adopt that very system as his own, with some modification of language only, is more than puzzling. Not less surprising is how Crescas succeeded in forcing his misinterpretation of Gersonides for the real meaning, and have the historians look upon him as the antipode of Gersonides. But here is not the place to discuss it. The writer

of this review will attempt to prove elsewhere¹ that contrary to all appearance, and in spite of striking differences, Crescas's system of philosophy is at bottom that of Gersonides, minus the heretical conclusions. Whenever Gersonides's conclusions are not sufficiently orthodox, Crescas rejects them arbitrarily without, however, modifying the fundamental premises. This explains the flaw in some of Crescas's reasonings, which our author calls attention to, but does not account for.

However, as much as this assumption regarding Crescas would put him in a different light, it does not necessarily modify the contents of his philosophy, so faithfully rendered in the present scholarly treatise. How difficult a task our author had before him will best be appreciated by those familiar with the complicated and obscure Hebrew text of Crescas's work, *Or Adonai (The Light of God)*. He has disentangled Crescas's leading ideas from a labyrinth of cumbersome and incidental details and presented them in a clear and pleasant style. It would have been desirable to have a special chapter devoted to the gist of Crescas's philosophy, which would have given us a more concentrated picture of the philosopher's mind. But Dr. Waxman has given us an excellent analysis and criticism of Crescas's philosophy; he points out several germs of modern thought in it, and has made, in addition, a notable contribution to the study of Spinoza's sources.

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NEW YORK.

JOURNALS AND NEW BOOKS

REVUE NEO-SCOLASTIQUE DE PHILOSOPHIE. February, 1921. *Le nominalisme de Guillaume Occam* (pp. 5-25): P. DONCOEUR. — Occam denied relation any objective reality, and professed the strictest nominalism. He admitted, however, that his theory did not apply to God, in whom Paternity really exists. *Les thèmes du "Protagoras" et les "Dissoi Logoi"* (pp. 26-40): E. DUPREEL. — The doctrine which Socrates defends in the Protagoras is not Socratic, but comes from Protagoras. *Notes sur le Probabilisme* (pp. 41-58): P. HARMIGNIE. — There is nothing in the philosophy of St. Thomas against the doctrine of probabilism, which he ignored and was therefore unable to judge. *La formation du tempérament national dans les philosophes du XIIIe. siècle* (pp. 59-72): M. DE WULF. — The three characteristics of Western thought in the thirteenth century are individualism, intellectualism and moderation. German thought, on the other hand, is already inclined to

¹ In a monograph on Gersonides.

mysticism and pantheism. *Comptes rendus*: H. J. Stadler, *Albertus Magnus de Animalibus libri XXVI*: M. DE WULF. C. Van Crombrughe, *Tractatus de Verbo Incarnato*: A. MANSION. J. T. Beysens, *Hoofdstukken uit de bijzondere Ethiek*: A. MANSION. B. Geyer, *Peter Abaelards philosophische Schriften*: M. DE WULF. *Chronique*.

- A. Fouillée, J. Charmont, L. Duguit and R. Demogue. *Modern French Legal Philosophy*. Translated by Mrs. Franklin W. Scott and Joseph P. Chamberlain. New York: The Macmillan Co. 1921. Pp. lxvi + 578.
- Kohler, Josef. *Philosophy of Law*. Translated by Adalbert Albrecht. New York: The Macmillan Co. 1921. Pp. xlv + 390.
- Miraglia, Luigi. *Comparative Legal Philosophy, Applied to Legal Institutions*. Translated by John Lisle. New York: The Macmillan Co. 1921. Pp. xl + 793.
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NOTES AND NEWS

The New York Branch of the American Psychological Association held a meeting in Schermerhorn Hall, Columbia University, on Monday evening, November 28th, 1921. The speakers were Dr. David Mitchell and Dr. Rudolf Pintner. Dr. Mitchell, who is president of the New York State Association of Consulting Psychologists, reported on the work which that organization did last spring. The children who were to enter school this fall for the first time were given the Binet-Simon test. There was an interesting discussion of the results obtained from the Jewish and Italian children of pre-school age.

Professor Pintner presented methods of evaluating mental and educational tests, illustrating his discussion with charts projected by stereopticon lantern. The charts showed certain individuals whose educational measurements were not what would be expected from the mental examinations. Charts were also presented to represent the different schools in a district. The aim should not be to bring all schools to one level, nor all individuals to one educational level, but to the height that can be expected from the mental measurement. Thus schools with poor material, classes with poor material, can not be expected to attain the levels of schools where the mentality is good. Such charts are an excellent means of comparing the individuals, the classes, and the schools.

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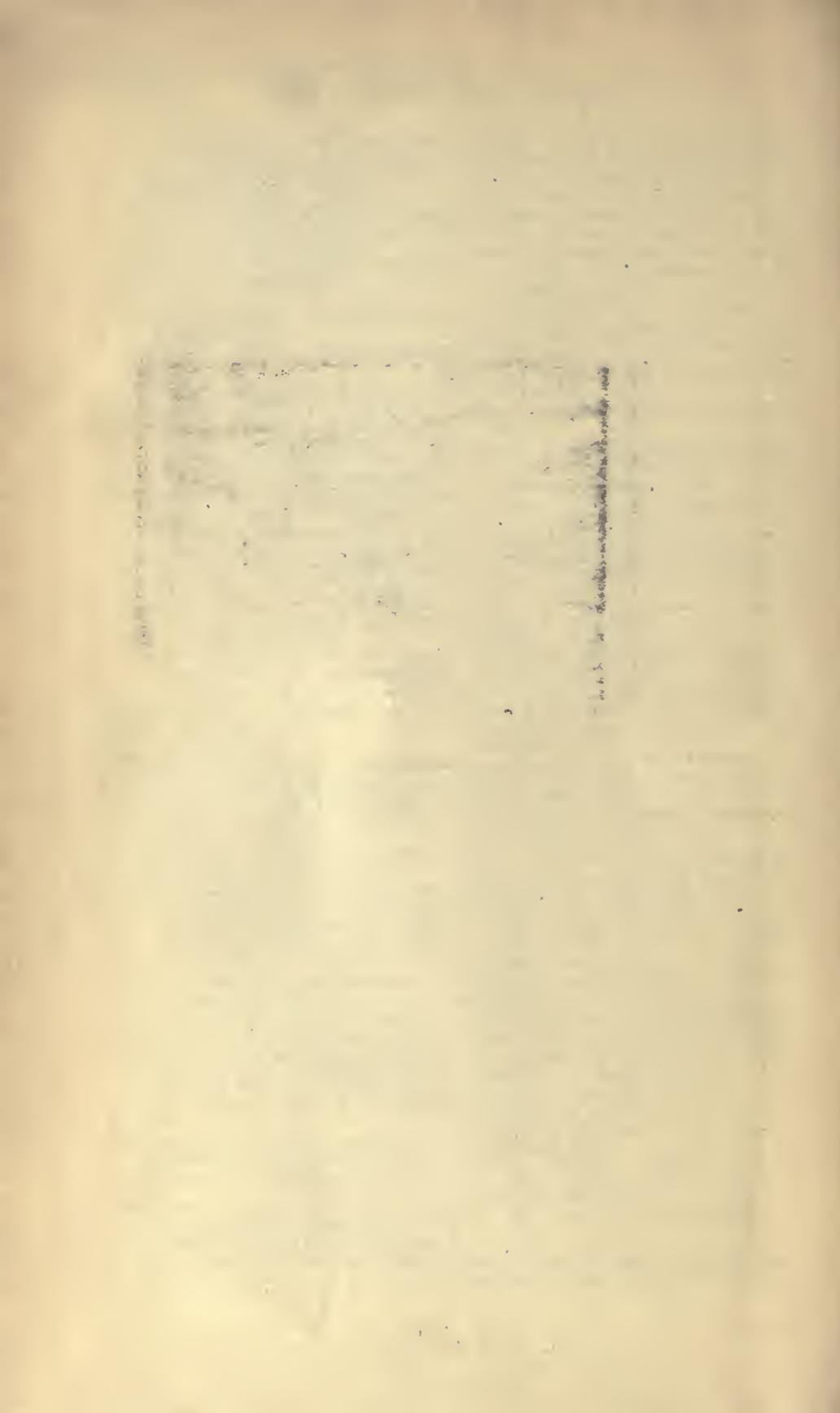
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