ENGLISH PHILOSOPHERS

SIR WILLIAM HAMILTON

BY

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PREFACE

BY

THE EDITOR.

THE appearance of the first instalment of the Series of English Philosophers affords the Editor an opportunity of defining the position and aim of this and the succeeding volumes. We live in an age of series: Art, Science, Letters, are each represented by one or more; it is the object of the present Series to add Philosophy to the list of subjects which are daily becoming more and more popular. Had it been our aim to produce a History of Philosophy in the interests of any one school of thought, co-operation would have been well-nigh impracticable. Such, however, is not our object. We seek to lay before the reader what each English Philosopher thought and wrote about the problems with which he dealt, not what we may think he ought to have thought and written. Criticism will be suggested rather than indulged in, and these volumes will be expositions rather than reviews. The size and number of the volumes compiled by each leading Philosopher are chiefly due to the necessity, which Philosophers have generally con-

sidered imperative, of demolishing all previous systems of Philosophy before they commence the work of constructing their own. Of this work of destruction little will be found in these volumes; we propose to lay stress on what a Philosopher did rather than on what he undid. In the summary will be found a general survey of the main criticisms that have been passed upon the views of the Philosopher who forms the subject of the work, and in the bibliographic appendix the reader will be directed to sources of more detailed criticism than the size and nature of the volumes in the Series would permit. The lives of Philosophers are not, as a rule, eventful, the biographies will consequently be brief. It is hoped that the Series, when complete, will supply a comprehensive History of English Philosophy. It will include an Introduction to the Study of Philosophy, by Professor H. Sidgwick.

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SIR WILLIAM HAMILTON.

CHAPTER I.

BIOGRAPHICAL AND INTRODUCTORY.

Sir William Hamilton was born at Glasgow in the year 1788. His birth took place in the College where his father, Dr. William Hamilton, filled the chair of Anatomy and Botany, which had formerly been occupied by his grandfather, Dr. Thomas Hamilton. He received the names of William Stirling, the latter being his mother's family name; but he dropped the Stirling soon after coming of age, and it appears for the last time when he passed his final examination at Oxford in 1810. He was only two years old when his father died at the early age of thirty-two, leaving his widow and two children—the future philosopher, and a younger brother named Thomas, who afterwards entered the army and attained some distinction in the department of literature. Dr. Hamilton appears to have left his family sufficiently (though probably not handsomely) provided for, and Sir William and his brother received an excellent education. He succeeded to the family baronetcy in 1799, but no estate accompanied the title, his right to which was only proved (with considerable trouble and expense) thirteen or fourteen years later; so that during his school and college days he was known as plain William Hamilton. He con-

tinued to reside in Glasgow after his father's death until the year 1801, when he was sent to school in England, having previously it seems attended the Junior Greek and Latin classes of the University at the age of twelve. The figure of the venerable Reid, whose works he was destined to edit long afterwards, was no doubt familiar to him during early childhood, but the philosophy of Reid and Stewart appears to have been little studied at Glasgow until after he left that University. Notwithstanding his attendance at the classes mentioned, he does not appear to have entered the University of Glasgow until after his return from England in 1803. He then distinguished himself in the department of Logic and Moral Philosophy, and it is worth noticing that Reid's successor—Professor Mylne—under whom he studied, was a Sensationalist in Psychology and an Utilitarian in Ethics. Hamilton's subsequent hostility to these theories cannot therefore be ascribed to early training, and judging from the fact that he records the purchase of Reid's works in one of his letters while at Oxford, it would appear that he was not previously acquainted with that author. Being intended for the medical profession like his father and grandfather, his studies were naturally directed to that object, and in particular he devoted a good deal of time to Chemistry, the only physical science (except Physiology) with which he seems to have had much acquaintance, and which undoubtedly coloured (among other things) his theory of causation. After going to Edinburgh to pursue his medical studies, his mother decided to send him to Oxford, and he entered that University as a student of Balliol College in 1807. He obtained a Snell Exhibition—a prize instituted by a Scotchman for the purpose of assisting deserving youths of his own country to take Degrees at the leading English University—and by refraining from any considerable expenditure, except on books, his

University career did not prove an expensive one. He does not seem to have become acquainted with many of the Oxford students (then unusually numerous) who made names for themselves in after-life, and except his countryman Lockhart, the names of his associates mentioned by his biographer call for no remark. As in one of his letters, however, he takes up the cause of Mr. Copleston rather warmly in his controversy with the *Edinburgh Review*, we may perhaps assume that he came to a certain extent under the influence of the man to whom the revival of Logic as a study at Oxford has chiefly been ascribed. He was undoubtedly a hard reader, and the number of books which he took up for his final examination *in Literis Humanioribus* was regarded as unprecedented. They were mainly philosophical, and included almost all the writings of Aristotle, together with the philosophical works of Cicero; but his books were certainly more numerous than his authors. His name appears in the First Class: but as the names in that class are printed alphabetically and not in order of merit, we are unable to ascertain the precise position which he occupied as regards his contemporaries, none of whom subsequently attained any remarkable distinction. He was not elected to a Fellowship at Balliol College, but that may have been owing to the disfavour with which Scotchmen were regarded at the time. He evidently acquired a high reputation at Oxford as a student of philosophy, but his attainments in that department were only tested indirectly by means of an examination in Greek and Latin philosophical works—the former limited to Aristotle and the latter to Cicero.

Leaving Oxford in 1811 (except for occasional visits) Sir William Hamilton changed his intended profession, and became an Advocate in the year 1813. His success at the Scottish bar was not brilliant, but there seems no reason to doubt that if he had devoted his attention to his profession

he would have earned a respectable livelihood. Reading, however, seems to have been his chief occupation, and in this respect the Advocates' Library had great attractions for him. He had become a book collector at a very early age, and his private library was already attaining considerable dimensions. In 1820 the Professorship of Moral Philosophy in the University of Edinburgh became vacant by the death of Dr. Brown, who had latterly been the colleague of Stewart. Hamilton does not appear to have been acquainted with Brown, though he had resided in Edinburgh since his call to the bar, and it seems to have been on the occasion of his present candidature that he first met Stewart. The appointment rested with the Town Council of Edinburgh. Mr. MacVey Napier, afterwards editor of the *Edinburgh Review*, was at first a candidate with the support of Stewart, but does not seem to have persevered in his canvass: and the contest lay between Hamilton and John Wilson, better known in the literary world as Christopher North. Hamilton was a Whig, and Wilson was a Tory; and as the latter party preponderated in the Town Council, Wilson proved the successful competitor. That the world would have gained much by the election of Hamilton cannot be doubted, but I think the Town Council has been unduly censured for its choice. Hamilton had hitherto published nothing. His prize at Glasgow sixteen years before had been awarded by his fellow-students to a boy in his teens, while his Oxford distinction had been mainly won by his classical knowledge. He had been for several years a practising Advocate, and there was nothing to show (so far as I am aware) that during that period he had been an active student of philosophy. Wilson's philosophical credentials were probably not of a high order, but he was a man of undoubted ability. The selection was certainly not the worst instance of party-spirit that has

occurred with respect to such appointments, nor perhaps are they much purer in the hands of the Government than of a Town Council. Hamilton and Wilson were friends, and the incident did not interrupt their friendship; while many years afterwards Sir William took an opportunity of making a complimentary allusion to Wilson in his own Lectures.[1]

Soon after this, Hamilton was appointed to the chair of History in the University of Edinburgh, the emoluments of which post only amounted to 100*l.* a year, and he also received a small law appointment as Solicitor of Teinds. He appears to have abandoned his practice at the bar and lived with his mother and his cousin, Miss Marshall, reading and making additions to his library, and occasionally astonishing casual visitors by the extent of his erudition. Phrenology had at this period become fashionable in Edinburgh under the auspices of Mr. George Combe. Hamilton made a great number of researches on the skulls of men and other animals (including some experiments on live animals) with the view of testing its pretensions, and afterwards published the result of his inquiries, which were decidedly adverse to the theories of Gall and Spurzheim. A summary of these researches appears in an appendix to the first volume of his Lectures, and if we may judge by them Hamilton would have proved a successful student of Physiology had he been able to devote more time to that science. He retained his interest in it undiminished up to the last; and while his investigations possess the interest of being his earliest publication, I am not aware that his results have ever been displaced.

During the period subsequent to 1820, Hamilton seems to have become better acquainted with Stewart, and in a letter of the latter which is extant he acknowledges his indebtedness to Hamil-

[1] Lect. ii. p. 382. This passage, if not this whole Lecture, must have been written as late as 1854.

ton for "much curious and valuable information about the later philosophers of Germany, whose merits and defects he seems to me to have appreciated with great candour and discrimination." If, however, this "curious and valuable information" was that which Stewart published a few years afterwards in his Dissertation on the Progress of Philosophy, the incident does not redound very much to Hamilton's credit. Stewart, however, in the course of that Dissertation, only refers to him on one occasion when alluding to Eschenbach, who unmistakably anticipated Sir William Hamilton's subsequent doctrine of Natural Realism, though Hamilton himself ascribes it to no modern philosopher except Poiret and Reid (with the possible addition of Sergeant).[1] This doctrine evidently puzzled Stewart, who could not make up his mind as to whether Eschenbach was "right or wrong." I may here remark that Professor Veitch, in his Memoir, tells us that it appears from Hamilton's Common Place Book, that he had adopted the doctrine of Natural Realism, in all its essentials, as early as 1823, and therefore previous to the publication of Stewart's Dissertation; but Stewart refers to him merely as the source of a curious piece of literary information and not as an authority on philosophy.

Sir William Hamilton's mother died in the year 1827, and two years later the future philosopher married Miss Marshall, the cousin who had resided with him and his mother for several years before her death. The union proved a happy one, though many ladies would have objected to the continual work as her husband's amanuensis, which Lady Hamilton cheerfully underwent. That she had much to do with his subsequent distinctions seems to be admitted, and I suspect it was in no small degree owing to her influence that the recluse student became an author for substantially the first time, six months after his

[1] Stewart's Works, i. pp. 584-5. Hamilton's Edition.

marriage, and when he had passed his fortieth year. The immediate cause of his coming before the public, however, was the appointment of his friend, Mr. MacVey Napier, as editor of the *Edinburgh Review* in succession to Lord Jeffrey, in 1829. Napier insisted on Hamilton's supplying an article for the first number of the *Review* which came out under his auspices, and the result was his famous Discussion on the Unconditioned, which revealed to Continental thinkers the unsuspected existence in this country of a great philosopher, who could look beyond the narrow confines of Great Britain. M. Cousin, against whom the article was chiefly directed, conceived the warmest feelings of admiration and respect for its author, with whom he soon after entered into correspondence, and in whose behalf he exerted himself to the utmost when the Chair of Logic in the University of Edinburgh became vacant. The friendship of the two philosophers, indeed, lasted up to Hamilton's death. This Discussion was followed by another on the Theory of Perception in 1830, and a third on Logic in 1833; and Hamilton likewise contributed a large number of articles on other subjects to the *Edinburgh Review* from 1829 to 1836, in which he showed himself particularly zealous in the cause of University Reform, and the admission of Dissenters to the Universities. It may here be remarked that Hamilton was an attached member of the Church of Scotland, in whose subsequent troubles he took much interest, and was always a sincere and consistent believer in Christianity. In politics he was a Liberal, and he adhered to his political views with such firmness as to estrange some of the most intimate of his early friends—for instance Lockhart. With Wilson, however, he always continued on good terms, although they were rival candidates for a chair of philosophy, which seems to have been in a great measure disposed of on political grounds.

Hamilton had completed his forty-eighth year before his appointment to a chair of philosophy, and even then three or four articles in the *Edinburgh Review* were the only contributions to that science to which he could point as credentials. How much more he might have accomplished if he had received the appointment earlier, it is vain to speculate; but it is perhaps the prevailing fault of all Academical patrons to select a middle-aged or elderly man who has already made a reputation, rather than a young man who gives every indication that he is prepared to make one whenever an opening presents itself. We cannot regret that such a choice was ultimately made in Hamilton's case; but the result was that the real scope of his philosophical activity was limited to a period of eight years, and after that period the paralytic man, who tottered down to read the lectures which he had written years before, would, if those eight years had proved less fruitful, have almost afforded a caution against such appointments for the future. Dr. Ritchie resigned the chair of Logic in the University of Edinburgh in 1836. Hamilton's principal opponent was Mr. Isaac Taylor of Ongar, who, like Wilson, had displayed great ability in other departments, but had no special qualifications for the vacant professorship. Hamilton was elected by eighteen votes to fourteen; but he received the chair, which was not a very valuable one, subject to the condition of paying Dr. Ritchie 100*l.* a year for the rest of his life—a serious deduction to one whose family was rapidly increasing. During the first session Hamilton wrote his Lectures on Metaphysics almost in the form in which they were published after his death. He had contracted that habit of procrastination which often accompanies the consciousness of unusual power, and many of these lectures only received the author's final corrections and alterations immediately before they were delivered. He often sat up almost

the whole of the preceding night, busied in preparation, Lady Hamilton sitting up with him, and acting as his amanuensis. Written under such circumstances, the Lectures can hardly be regarded as finished expositions of his philosophical views; yet, from the fact that they were delivered almost unaltered for nearly twenty years, we may conclude that they contain a reliable statement of the substance of the Hamiltonian doctrine. The Lectures on Logic were composed during the next session. The author considered them much more finished, as well as more valuable than those on Metaphysics, but posterity will, I think, reverse the verdict. They were in many instances prepared under the same pressure as their predecessors, and translations from Krug and Esser were often used to supply the unfinished portions of the author's sketches. He seems to have become aware at an early period that anything more recondite than these lectures would not be intelligible to his audience, and consequently to have resolved on bringing a detailed exposition of his system before the public in a different form. For this purpose he chose an edition of the works of Reid—a philosopher to whom, on the whole, he paid more deference than any other, with the possible exception of Aristotle. The selection of such a form of exposition was unfortunate, and circumstances aggravated the evil. First, he quarrelled with his intended publisher, and not having selected another, he got the work stereotyped as far as it had then been printed—thus precluding all correction, or reconciliation of his earlier and later views. Then followed a quarrel with the Town Council of Edinburgh about his lectures, which occupied much of his time, and prevented him from delivering a second and more advanced course of lectures. Then came the death of his brother, to whom he was greatly attached, and the threatened disruption of the Scottish Church, which he laboured hard to avert; and,

finally, when the work was still incomplete, a paralytic stroke almost deprived him of the use of his right side for the rest of his life. This calamity overtook him in the year 1844.

Hamilton's mental faculties were still unimpaired, but he evidently lacked his former energy after his partial recovery, and, moreover, we hear of repeated illnesses from this period until his death, whereas he had formerly been remarkable for strength and activity, as well as for general good health. In 1846 he published his unfinished edition of the works of Reid, one of his supplementary dissertations breaking off in the middle of a sentence. It was never completed; and the materials which his editors collected and published after his death probably form but a small portion of what before his illness he intended to add. The work, however, even as it stands, is one of marvellous labour and research, and though not always containing the author's latest views, is that to which his disciples usually refer as the best exposition of his system. All idea of revising or altering his lectures, except by occasional oral interpolations, was now abandoned, and neither of the works which he announced as preparing for publication at the end of this edition of Reid ever appeared. How much of what he subsequently published was written before 1844, it is difficult to ascertain; but his later publications, in any event, were not extensive. In 1852 he republished his Discussions from the *Edinburgh Review*, with additions and alterations, and shortly before his death he published an edition of the works of Stewart, in bringing out which, however, he confined himself to the task of an editor, and added very few philosophical annotations. He still lectured to full classes, using his old lectures, and the effort of delivery having become painful, these were not unfrequently read by an assistant. He died very shortly after the close of the Academical Session of 1856, after a brief illness; but his

health appears to have been continually becoming worse since his terrible attack in 1844. Latterly he enjoyed a small pension from the Civil List; but he was never in affluent circumstances, and it required great care on the part of himself and Lady Hamilton to bring up his family respectably, while making the additions to his library, which formed almost his sole personal expenditure. His eldest son entered the army some years before his death, and the philosopher seems to have watched over him with almost more than parental solicitude.

Hamilton was much loved by his pupils, and to all who came to him for information he was kind and condescending. His temper, however, was imperious. He was impatient of opposition, and being an ardent reformer, was pretty often opposed; but he was more frequently engaged in a quarrel with some public body than with private individuals. He had all the waywardness of genius, and such were his eccentricities in connexion with his famous articles in the *Edinburgh Review*, that his connexion with that periodical would probably have terminated even independently of his appointment to the chair of Logic. He would at the last moment send in an article far exceeding the limits agreed upon, thus compelling the editor to exclude something else to make room for it, while from the time of its arrival it was impossible to modify its language where the editor deemed it too strong. Afterwards, under the pressure of his infirmity (which he otherwise bore with great fortitude), his temper seems to have become more acrimonious, and those who ventured to enter into controversy with him had no pleasant time of it. He was, however, always a strictly honourable, and sometimes even a generous opponent, and he enjoyed the respect and esteem not only of his friends, but of the public up to the last; and if

"He can't be wrong whose life is in the right,"

we have a strong testimony to the correctness of the Hamiltonian theory.

Something has been already said of the extent of Hamilton's reading. He was from his early years an ardent student of classical literature, and his subsequent speculations were no doubt largely influenced by this fact, and by his having been sent to complete his education at the University of Oxford, where the writings of Aristotle were then held in high esteem. Hamilton's studies, however, soon extended far beyond the limits of the Oxford curriculum. Not content with the works of the ancient Greek and Roman philosophers, he turned with avidity to those of the Schoolmen, and thence to those of the modern Continental philosophers. The Scottish School had hitherto attached too little importance to the writings of its predecessors and foreign contemporaries. Hamilton undoubtedly went into the opposite extreme. In turning over his pages we might frequently imagine that we were reading some curious volume of antiquarian research, rather than a treatise on a science by a professed expositor. His philosophical erudition has probably never been equalled, but it was far too vast to be accurate. It would be difficult to name a philosophical author whose system he had thoroughly mastered, with two exceptions—Aristotle and Reid. If he erred in any respect in his exposition of these writers, it was not from want of acquaintance with their works, but from his desire to assimilate their systems to his own. But even as regards Stewart, I think he cannot always be acquitted of errors of another kind.

His great erudition had another ill effect. When about to write on any subject, he consulted so many authors, and made so many extracts, that the work soon extended beyond all reasonable dimensions, and unless compelled by the pressure

of necessity (as in the case of his lectures) to give the results to the world, he ultimately became disheartened, and abandoned the effort in despair. There can be no doubt that if he had read less he would have produced more, and with his powerful intellect I doubt if his productions would even have been deteriorated in quality. I venture to suggest one more bad consequence arising from the peculiar bent of his studies. His wonderful acquaintance with Formal Logic led him almost invariably to seek for some logical fallacy in an opponent's argument, and when he hit upon a careless expression (arising, perhaps, from a studied disregard of the technicalities of Logic), he imagined he had found it, whereas a more careful examination would have shown him that all appearance of logical irregularity could have been got rid of while leaving the argument intact. The truth is that investigators very seldom really fall into any logical fallacy, though disputants often do so.

Hamilton's latest philosophical writings published in his life-time are to be found in the Appendices to the last edition of his Discussions. After his death his editors published all the materials for his edition of Reid which they could collect, and also his Lectures; and some of his very latest contributions to philosophy—found on his desk after his death—are printed as Appendices to the latter. The Lectures are the only part of his works that can be regarded as in any sense complete, and even they obviously fall short of his original design—partly owing, no doubt, to his quarrel with the Town Council. Most of his logical theories, too, occurred to him after the Lectures on Logic were written. He has left no systematic exposition of his philosophy, and his readers must be satisfied to make the most of the materials he has left. But the imperfect is often more suggestive than the complete, and the real student of philosophy will not, perhaps,

regard the state in which Hamilton's works have come down to us with unmingled regret.

The fundamental principles of the Hamiltonian Philosophy may, I think, be thus enumerated:—1st, His theory of External Perception, or Natural Realism; 2nd, His doctrine of Native, Necessary or *à priori* Truths, and the tests by which they can be discovered; 3rd, His law of the Conditioned, including its application to the Principle of Causality; and, 4th, His consequent views concerning the impossibility of knowing the Absolute and the Infinite. I do not include his doctrine of the Relativity of Human Knowledge,[1] of which so much has been said. So much of that doctrine as is relevant and characteristic of Hamilton falls, in my opinion, under the remaining heads, as is also the case with his polemic against the Association Psychology.

[1] But surely it is competent to a philosopher to maintain the relativity of our knowledge of the external world without limiting himself to the "one special relation" of cause and effect which Mr. Mill insists on.

CHAPTER II.

THE EXTERNAL WORLD—NATURAL REALISM.

It is perhaps by his solution of the problem of the existence of Matter—by his Natural Realism—that Sir William Hamilton is best known. The question had long previously attracted the attention of Philosophers.

All men naturally believe in an external world; but when the reasons of this belief came to be inquired into, the answers given have often been very unsatisfactory. All men, it has been alleged, naturally believed that the sun, moon, and stars, went round the earth every twenty-four hours; but when the grounds of this belief came to be examined, it was found to be an illusion arising from the rotation of the earth upon its own axis. Many philosophers arrived at the conclusion that the belief in an external world is a similar illusion. Nothing existed, they said, but minds and their various states of feeling. Sensations and other feelings succeeded each other according to certain laws, but these laws did not imply the existence of anything but minds, and we had no reason to believe that anything else existed. The best known advocate of this doctrine in modern times was Berkeley, and his denial of the external world was the source of almost all modern speculation on the subject. Hume carried Berkeley's theory farther, and applied it to subvert the substantial reality of Mind as well of Matter. Reid, startled by the

deductions of Hume, abandoned the doctrine of Berkeley which he had at one time accepted, and argued strenuously in favour of an external world. He was followed by Stewart, but vigorously assailed by Brown, who, however, continued to declare his belief in an external world, while rejecting almost all his master's arguments in its favour. Meanwhile Hume had roused Kant to speculation in Germany, and was perhaps the true originator of the English School of Philosophers which seeks to explain the belief in an external world as a natural illusion arising from the operation of the principle of Association of Ideas on original sensations—sensations which they describe as mental feelings and nothing more. In this state Sir W. Hamilton found the controversy, and with the ardour of a true philosopher he resolved, if possible, to clear up the point in dispute,

I am using the phrase External World in the vulgar sense. The vulgar believe that the external world is something real, which exists independent of me or of any other mind (except possibly that of the Creator), and which would equally continue to exist if all finite minds were annihilated. They also believe that this world exists in space, and that the space which contains it, and which it occupies, is equally independent of my own, or of any other mind. No man who has not been instructed in philosophy believes that space, as it exists in bodies, is nothing but the unknown cause of certain sensations in us, and that space, as we perceive or represent it, is purely and exclusively mental. This preface is necessary, because it has lately become fashionable with Idealists, instead of denying the existence of an external world, to admit that in a certain sense it exists, and then to give an explanation which denies its existence in the only sense which the vulgar attach to it. But the question is further perplexed by the introduction of ambiguous and in-

definite language, which is perhaps understood in one meaning by the writer, and in another by the reader. Thus we are told that Matter is admitted to exist in the sense of a Permanent Possibility, or Potentiality, of Sensations. This expression is susceptible of two contrasted meanings. It may signify a *thing* which renders sensations permanently possible —a thing that *causes* sensations—which is probably what the casual reader would understand by it; or it may mean only that it is permanently possible for my *mind* (or some other mind) to feel certain sensations when certain conditions (these conditions being purely mental) are supplied. It may, in short, mean either Permanent Possibility of *producing* the sensations, or a Permanent Possibility of *feeling* them. In the latter sense it can exist nowhere but in a mind, and its existence there was probably never disputed by any Idealist. The vulgar belief undoubtedly goes beyond this. But if it be asked whether the external world in which the vulgar believe is substance or attribute, the answer is not so clear. The distinction of substance and attribute is one about which the vulgar give themselves little concern, and if an external world be conceded to them, they would not perhaps care very much whether it was called a substance, or a collection of qualities or attributes—always assuming that these attributes or qualities are admitted to exist independently of the perceiving mind.

It was a common practice with the earlier philosophers, as, for instance, with Locke, to say that we knew material objects by means of our *ideas* of them. These ideas, it was said, truly *represented* the objects, and Locke even carelessly wrote that our ideas of the primary qualities of matter were "resemblances" of these qualities. Locke defined an idea as "the immediate object of our minds in thought," or in "thinking;" but then he described sensation as one of the modes

of thinking, and he usually employed the phrases "sensation," "idea of sensation," and "sensitive idea," in the same signification. Dr. Reid, however, interpreted the word idea as used by Locke and a great number of other philosophers, as meaning not a mere mental state, but a thing *in* the mind, or even *in* the brain; and he understood them as maintaining that it was this thing, and not the real external thing, which was immediately perceived, or known, in every exercise of the senses. The idea was thus (as Reid interpreted his predecessors) a *third* thing—an intermediate—interposed between the mind and the external world, and was the immediate object of perception, while the real external world could only be perceived mediately and through it. How far Reid correctly understood his predecessors, I need not now inquire. There is no doubt that, with regard to some of them, he was mistaken; and it is also certain that, since his time, no one has ventured to advocate the theory of ideas in the shape in which he opposed it. It is easy to see that this theory of ideas (or ideal theory) was fatal to the external world. According to it, the external world was not perceived at all. Nothing was perceived but the idea. How, then, were we justified in believing that anything existed except the idea which alone was perceived? Or if an external world existed, how could we know that it resembled the idea? The idea was alleged to be a picture, but we could never get the original to compare it with. We could not, therefore, tell whether it was a good or a bad likeness, or whether it was a likeness at all. Nay, we could not know that there was any original. We perceived the idea and nothing else. Why, then, should we assume that there was anything else to be perceived?

Reid easily saw that the Ideal Theory, as he understood it, destroyed the proof of the external world, and finding that Berkeley had founded his Idealism on Locke's admission that

we perceive not the external things themselves, but only our ideas of them, he was naturally led to deny the existence of ideas and to maintain that we perceive external objects immediately and not through the medium of these supposed ideas. He extended this doctrine to memory and imagination. There was there also no third thing—no separate entity—between the mind and the object which we remembered or imagined. There was no intervening idea, and our knowledge was in these cases also immediate. It is surprising, when Reid had got so far as this, that he did not see that whether he had refuted Berkeley or not, the problem of the external world was still unsolved. Memory sometimes deceives us. Imagination often does. Why then should not perception deceive us also, since all three are on a level as immediate cognitions? Reid appealed to our natural belief in the external world. But what he was called upon to do, was to justify this belief, to point out its grounds, and to defend it against objections; and it can hardly be said that this was done, either by Reid himself or by his successor Stewart.

In the meantime Hume had attached a new meaning to the word "idea" which his disciples appear disposed to ascribe to earlier philosophers to whose systems it is quite alien.[1] Hume did not believe in the idea as a separate entity—an intermediate thing—existing in the mind or in the brain; but he distinguished between the *sensation* or original feeling and its subsequent representation in the imagination, to which latter alone he gave the name *idea*. When the term idea had got this meaning, the doctrine of perception by means of ideas got a new meaning also. It no longer meant perception by means of intermediate things—separate entities—but per-

[1] Mr. Mill, for instance, more than once criticizes Locke on the assumption that that philosopher used the term "idea" in the same sense as Hume and James Mill. This is not the case, as already remarked.

ception by means of states of mind which, however, belonged to reproductive or representative, rather than to original or presentative, consciousness. Now it could not be doubted that there were such states of mind. I can call up, for instance, a mental representation of a house, a bridge, or a man that I saw yesterday or the day before. Consequently Reid's assertion, that there were no ideas, would not apply to this new form of the theory. But it was evident that the external world fared no better on this theory than on the former one. If my mental state when I looked at St. Paul's cathedral was of the same nature with my mental state when, after leaving London, I merely imagined it, and if the former state only differed from the latter by being more vivid, or more clear and distinct, the one could no more prove the existence of the cathedral than the other. Men can imagine things that never existed and never will exist; and if perception is a mental state similar in all its essentials to imagination, why may we not also perceive things that never existed and never will exist? When I am said to be looking at St. Paul's cathedral, I have, on this theory, the representation of the cathedral in my mind; but how can I know whether it is like or unlike the original, or whether there is any original? I know nothing but the representation, and the representation is purely and exclusively mental. How can I get beyond it to reach any external world? The philosophy of Reid can here afford us but little assistance.

In this exigency the majority of philosophers seem to have fallen back on the Principle of Causality. This principle has been variously understood. With some it affirms nothing more than certain uniformities of succession in our mental states. Such a principle is here useless. The antecedent state would always be as strictly and exclusively mental as its successor. It might indeed be a mental state which we did

not actually experience, but then the statement that it was an antecedent would only mean that some one else experienced it or that we would have experienced it under other circumstances—circumstances purely mental. Pursuing trains of antecedents and consequents in our mental states can never lead us to anything that is not a mental state, any more than tracing the terms of arithmetical series could lead to the discovery of a new chemical substance. But more usually the principle seems to have been understood as asserting that everything that begins to exist has an efficient cause—a cause which has produced it by an exertion of power. Our sensations, then, it was alleged, had causes, and we inferred the existence of matter or of the external world, as the (otherwise unknown) cause of our sensations. But then the question revived in this form: How do I know that this unknown cause of my sensations may not be another mind—God, for instance, as Berkeley maintained? Or, how do I know that my own mind may not unconsciously produce these sensations, as it seems to do, for instance, in dreaming? Or even assuming that the unknown cause is not a mind, how am I justified in ascribing any of the properties of the effect to it? The cause of my feeling of extension may not be extended: the cause of my feeling of solidity may not be solid: the cause of my feeling of figure may not be figured. Causes are by no means invariably similar to their effects: and, indeed, if the cause of my sensations resembles these sensations, seeing that the sensations are wholly mental, must not their cause be wholly mental also?

The problem would here seem to be reduced to the following question: Do we know the external world otherwise than as the cause of our (mental) sensations? This is the form in which Hamilton has grappled with it, and this is the question which he has answered in the affirmative. His discussion has, indeed,

suffered from his having treated the subject too exclusively in its historical connexion with Reid and Brown; but his solution of the problem is nevertheless sufficiently clear, and it appears to be the only one on which the existence of a veritable external world is likely to be maintained for the future.

It would be foreign to the purpose of the present work to enter into a discussion of the historical questions in dispute at any considerable length. Brown understood Reid as merely denying the existence of the idea in the sense of a separate entity or intermediate thing, and asserting that the perception of matter takes place without the intervention of any such medium. Understanding Reid in this sense, Brown contended first that very few philosophers ever believed in the intermediate idea or separate entity; and, secondly, that Reid's own theory left the existence of the external world open to all the same objections as before. Hamilton controverted both of these assertions, and retorted that Brown's own theory subverted the existence of the external world altogether. That Hamilton was right in the main portion of his argument is practically admitted by Mr. Mill in the last edition of his *Examination of Sir William Hamilton's Philosophy*. He there confesses that the Cosmothetic Idealists (the class of philosophers to which Brown admittedly belonged) cannot make good their case against Berkeley, which was, in fact, the substance of Hamilton's contention against them; while he allows that Hamilton escapes from Berkeley's argument by his doctrine that matter, with its primary and secundo-primary qualities, is directly and immediately perceived.[1] Again, he grants that Reid, like Sir W. Hamilton, affirmed, while Brown denied, that we have a direct intuition of the primary qualities of bodies;[2] and, as will be seen presently, the controversy

[1] *Examination of Hamilton*, p. 207, note (4th Edition).

[2] Id. p. 223 (4th Edition).

related to the perception of material qualities only, no philosopher having been bold enough to maintain that we have a direct intuition of material substance. Granting therefore to Reid his premisses, he was, by Mr. Mill's admission, in a position to resist Berkeleianism. Granting to Brown his premisses, Mr. Mill equally concedes that he only reached the external world by a paralogism. Hamilton is therefore triumphant in this branch of the controversy.

Hamilton's doctrine, which he designates Natural Realism, asserts that we have a direct and immediate consciousness of the external world as really existing, and are not left to infer its existence from the sensations which it is supposed to produce, or from the ideas which are supposed to resemble (or represent) it, or even from a blind faith in its existence, which says "I believe," but can give no reason for believing. I believe that it exists, says Hamilton, because I know it—I feel it—I perceive it—as existing. It becomes necessary, however, to examine with care what external world, according to him, we perceive, and on this point his works are not in complete harmony with each other. He everywhere, indeed, repudiates a direct perception of material substance, but then the mental substance is according to him equally unknown. One of the strongest passages to this effect occurs in the eighth of his Lectures on Metaphysics, where he expounds the axiom that all human knowledge is only of the relative and phænomenal. "Our knowledge," says he, "is either of matter or of mind. Now what is matter? What do we know of matter? Matter or body is to us the name either of something known, or of something unknown. In so far as matter is a name for something known, it means that which appears to us under the forms of extension, solidity, divisibility, figure, motion, roughness, smoothness, colour, heat, cold, &c.; in short, it is a common name for a certain series or aggre-

gate or complement of appearances or phænomena, manifested in co-existence.

"But as these phænomena appear only in conjunction, we are compelled, by the constitution of our nature, to think them conjoined in and by something, and as they are phænomena we cannot think them the phænomena of nothing, but must regard them as the properties or qualities of something that is extended, solid, figured, &c. But this something absolutely, and in itself—i. e. considered apart from its phænomena—is to us as zero. It is only in its qualities, only in its effects, in its relative or phænomenal existence, that it is cognizable or conceivable; and it is only by a law of thought which compels us to think something absolute and unknown as the basis or condition of the relative and known, that this something obtains a kind of incomprehensible reality to us. Now that which manifests its qualities—in other words, that in which the appearing causes inhere—that to which they belong—is called their subject, or substance, or *substratum*. To this subject of the phænomena of extension, solidity, &c., the term *matter* or material substance is commonly given, and therefore as contradistinguished from these qualities it is the name of something unknown and inconceivable.

"The same is true in regard to the term *mind*. In so far as mind is the common name for the states of knowing, willing, feeling, desiring, &c., of which I am conscious, it is only the name for a certain series of connected phænomena or qualities, and consequently expresses only what is known. But in so far as it denotes that subject or substance in which the phænomena of knowing, willing, &c., inhere—something behind or under these phænomena—it expresses what in itself, or in its absolute existence, is unknown.

"Thus mind and matter, as known or knowable, are only two different series of phænomena or qualities; mind and

matter, as unknown and unknowable, are the two substances in which these two different series of phænomena or qualities are supposed to inhere. The existence of an unknown substance is only an inference we are compelled to make from the existence of known phænomena; and the distinction of the two substances is only inferred from the seeming incompatibility of the two series of phænomena to coinhere in one" [substance].[1]

To this doctrine Hamilton steadily adhered throughout his writings; and therefore a theory of the external world, which merely seeks to explain the origin of our idea of material *substance* does not necessarily conflict with our author's Natural Realism. No doubt he believed that the notion of substance and the principle which leads us to refer every phænomenon to a substance, are both *à priori* and incapable of being explained by experience or association of ideas. But his theory of substance formed no element in the doctrine of Natural Realism, which he bequeathed to the world as, perhaps, his most valuable contribution to philosophy. That doctrine relates to material attributes or phænomena only. And it may be remarked that Hamilton uses the term phænomenon in the meaning of attribute, property, or quality, as opposed to substance, and not in the Kantian sense as opposed to thing *per se*, or Noumenon. That we perceive qualities, not substances, is certainly the leading element in his doctrine of relativity. He then adds that things may have a great many qualities which we do not perceive, but which we would perceive if we had additional senses; and though these two heads can hardly be said to exhaust the whole of his doctrine of relativity, they go very far towards doing so.

We have then, according to Hamilton, a direct intuitive perception of the qualities, attributes, or phænomena of matter, just as as we have of the qualities, attributes, or phænomena

[1] Lectures, i. pp. 137-8.

of mind, the substances in both cases being equally unknown. But have we this knowledge of some of the properties or qualities of matter, only or of all of them? And do we perceive these qualities in all matter alike, or in so much of it as comes in contact with our bodily organism, or only in our material organism itself? In dealing with the first of these questions, it is to be observed that Hamilton in some places makes a distinction between primary and secondary qualities of matter, while in others he enumerates three classes, primary, secundo-primary, and secondary; and in some passages he has been understood as excluding at least the secondary qualities from his Natural Realism. Thus, for instance, we find him saying: "Under the primary [qualities] we apprehend modes of the non-ego: under the secundo-primary we apprehend modes both of the ego and of the non-ego: under the secondary we apprehend modes of the ego, and infer modes of the non-ego. The primary are apprehended as they are in bodies; the secondary as they are in us; the secundo-primary as they are in bodies and as they are in us."[1] Again: "We are conscious as objects in the primary qualities of the modes of a not-self; in the secondary of the modes of self; in the secundo-primary of the modes of self and of a not-self at once."[2] The secondary qualities it would thus seem are not perceived, but inferred from our sensations. The colour of the tree before me, for instance, is not an object of direct perception, but is merely an unknown something that produces in me the sensation of colour, and this sensation is all that I am really conscious of. But Hamilton's doctrine on the subject of secondary qualities must not be confounded with that commonly held by his predecessors. For Hamilton's ego or self does not consist of the mind to the exclusion of the body, nor is sensation with him a mere mental feeling.

[1] Reid, p. 857 (a) (Hamilton's Edition). [2] Reid, p. 858 (a).

The secondary qualities, as they exist in external or extra-organic bodies, are indeed (in his opinion) unknown, and are only inferred as causes of our sensations; but it is otherwise as regards our bodily organism itself. In a note appended to the last passage I have cited, he says: "Our nervous organism, in contrast to all exterior to itself, appertains to the concrete human ego, and in this respect is *subjective, internal;* whereas, in contrast to the abstract immaterial ego —the pure mind—it belongs to the non-ego, and in this respect is *objective, external.*"[1] And he then goes on to point out that, even within this animated organism, a further distinction is admissible, and that some of its affections may be regarded as in a special sense affections of the ego, while others are in a special sense affections of the non-ego; the former corresponding to the secondary, and the latter to the primary qualities of matter. A very similar note occurs at p. 880 of his edition of Reid, where the same subject is discussed in connexion with the distinction between Sensation and Perception, and where in the text he says: "The organism is the field of apprehension both to Sensation proper and Perception proper; but with this difference, that the former views it as of the ego, the latter as of the non-ego." We are conscious, according to Hamilton, in every act of sensation, not merely of the mind as affected, but of an "organic affection," which he thinks is always attended with some reference to "locality." "I hold," says he, "with Aristotle—indeed with philosophers in general—that sensation is an affection neither of the body alone nor of the mind alone, but of the composite of which each is a constituent."[2] And as the secondary qualities are apprehended as they exist in our own organism (though not as they exist in extra-organic bodies), Hamilton proposes to employ the phrase "secondary quality"

[1] Reid, p. 858 (a) note. [2] Reid, p. 884 (a).

only in reference to that which is immediately known, and not in relation to its unknown cause. "I shall employ," says he, "the expression *secondary qualities* to denote those phænomenal affections determined in our sentient organism by the agency of external bodies, and not (unless when otherwise stated) the occult powers themselves from which that agency proceeds."[1] As thus understood, secondary qualities are as much the object of direct apprehension[2] as the primary or secundo-primary, and they are perceived as modes of matter no less than of mind. They reveal to us states of our own organized bodies, but not of the extra-organic world. If the tree I look at is not coloured, but merely produces in me the sensation of colour, it is otherwise with the organism of my eye. Colour is a real affection of that organism, and the retina may be truly said to be coloured, though the tree is not. Such is Sir William Hamilton's doctrine of secondary qualities.

Hamilton attached perhaps an exaggerated importance to the scholastic axiom that a thing can only act where it is, and hence concluded that the only extra-organic matter which we can immediately perceive is that which is in immediate contact with our bodily organism. The mind, according to his view, is not located merely in the brain, but is vitally united with the nervous organism in its whole extent, and therefore whatever comes in contact with the organism at any part of the body is capable of being directly and immediately perceived. Whenever he comes to deal formally with the question, he denies the possibility of an immediate perception of the distant, though in some casual illustrations he speaks as if the distant object was immediately perceived. Once, too, he appears to have been shaken in this theory of contact by the indications of an immediate perception of distance afforded by

[1] Reid, p. 851 (b). [2] See Reid, p. 810 (b).

the actions of some of the lower animals;[1] but no trace of this doubt appears elsewhere in his works. All the senses are, he maintains, modifications of the sense of touch—absolute contact between the external object and the sensitive organ being alike requisite to the exercise of each. But while absolute contact is thus necessary in order to *produce* the sensorial affection, the question remains whether what we perceive is merely the sensorial affection thus produced, or also the extra-organic body whose contact produces it. There are some ambiguities and inconsistencies in Hamilton's language on this subject. When he speaks, for instance, of the rays of light in contact with the retina as the *object* of vision, the word "object" may be taken to mean either that which is perceived, or that which immediately causes the perception. In the Dissertations appended to his edition of Reid, he states unequivocally that the primary qualities of matter are perceived in our organism only, and that it is by induction and inference that we learn the existence of similar properties in extra-organic bodies;[2] but in an earlier note to the same work he had affirmed that in vision we have a direct cognition of the *direction* in which the rays fall upon the retina,[3] which seems to imply (as do also other expressions in the same note) that we have an immediate cognition of the rays themselves as well as of the sensorial affection produced by them. Again, he speaks of "outness" (though not distance) as a direct perception of sight, and insists that Cheselden's patient enjoyed this natural perception from the first, and that what he was conscious of was not "a mere affection of the organ."[4] More than once, too, he speaks as if the object of perception was a sort of composite made up of the sensitive organism and the extra-organic object in contact with it, as will be seen in one of the notes already

[1] Lect. ii. p. 181, seq.
[2] Reid, p. 881 (b).
[3] Reid, p. 160, note.
[4] Reid, p. 177, note.

referred to. But his maturer doctrine would seem to be that in the perception of the primary, no less than of the secondary qualities of matter, we are conscious of affections of our own organism only, and not of anything outside or beyond it. The primary qualities are affections of that organism as material or extended—as a part of the non-ego: the secondary qualities are affections of it as animated, and regarded as a part of the ego.[1] In neither case do we get out of our own organism.[2]

Hamilton even thought it possible that what we immediately perceive is not the whole nervous organism as affected, but only the nerve-extremities which terminate in the brain. If we had a direct perception of matter in any shape, he seemed to regard it as sufficient for his purpose. Allow him any hold, however small, on the external world, and he believed he could show how the rest might be reached; but unless some portion of it could be attained directly, we could obtain no sure foothold outside of what he designates "the pure immaterial ego." "It makes no essential difference in this doctrine," says he, "whether the mind be supposed proximately conscious of the reciprocal outness of sensations at the central extremity of the nerves in an *extended sensorium commune*, where each distinct nervous filament has its separate locality, or at the peripheral extremity of the nerves in the places themselves where sensations are excited, and to which they are referred. From many pathological phænomena," he

[1] See Reid, p. 858, note.

[2] This view was probably suggested to Hamilton by the difficulty of obtaining any instance in which there is an absolute contact between the extra-organic body and the nervous organism with which the mind is supposed to be vitally united. In most cases the skin at least intervenes between the outward body and the sensitive nerve. In his last fragment on the subject, however, Hamilton seems disposed to revert to his original view, that we have a direct perception of so much of the extra-organic body as is in contact with our organism (Lect. ii. pp. 522-3).

adds, "the former alternative might appear the more probable."[1] Such a theory would of course not only exclude the perception of extra-organic matter in sensation, but limit our perception of organic extension to the brain. Hamilton does not positively adopt it, but regards it as fairly admissible.

His mode of reaching the extra-organic world was through the locomotive faculty, or the power of muscular effort. This must be distinguished from the muscular sense (or the sensations accompanying our muscular motions), which is, in his opinion, as incapable of attaining anything outside our organism as the other senses are. But it is different, he thinks, with the active effort to move. This, when resisted, makes us aware not only of the feeling of resistance, but of a something that resists us; and this something is not merely inferred as the unknown cause of the resistance which we feel, but is perceived with the same directness and immediateness as that resistance itself. So at least I understand his doctrine, which may perhaps be gathered from the following passages: "How is this resistance perceived? I have frequently asserted that in perception we are conscious of the external object immediately and in itself. This is the doctrine of Natural Realism. But in saying that a thing is known in itself I do not mean that this object is known in its absolute existence—that is, out of relation to us. This is impossible, for our knowledge is only of the relative. To know a thing in itself, or immediately, is an expression I use merely in contrast to the knowledge of a thing in a representation or mediately. On this doctrine an external quality is said to be known in itself when it is known as the immediate and necessary correlative of an internal quality of which I am conscious. Thus when I am conscious of the exertion of an enorganic volition to move, and aware that the muscles are obedient to my

[1] Reid, p. 861, note.

will, but at the same time aware that my limb is arrested in its motion by some external impediment—in this case I cannot be conscious of myself as the resisted relative, without at the same time being conscious—being immediately percipient—of a not-self as the resisting correlative. In this cognition there is no sensation—no subjectivo-organic affection. I simply know myself as a force in energy, the not-self as a counter-force in energy." [1] This resistance in its several modes constitutes what Hamilton designates the secundo-primary qualities of matter, which alone, according to him, reveal to us the extra-organic world. "The existence of an extra-organic world," says he, "is apprehended not as a perception of the primary qualities, but in a perception of the quasi-primary phasis of the secundo-primary" [qualities]; "that is, in the consciousness that our locomotive energy is resisted, and not resisted by aught in our organism itself. For, in the consciousness of being thus resisted, is involved as a correlative, the consciousness of a resisting something external to our organism. Both are, therefore, conjunctly apprehended." [2]

This volition which is resisted is a volition to move our bodies, and consequently Hamilton immediately adds:—"This experience presupposes, indeed, a possession of the notions of space and motion in space." And if the space, in which our bodies are supposed to be moving, is a purely mental form which has no existence out of the ego, as Kant maintained, the motion of our bodies through space, and the resistance to that motion which we experience, must be regarded as not less subjective and mental than space itself. But Hamilton adopted the Kantian doctrine, so far as to maintain that space is a native, or *à priori* notion - a mental form derived from the very constitution of the mind itself, and which it would

[1] Reid, p. 866, note. [2] Reid, p. 882.

have equally possessed if there was no external world. A new difficulty was thus placed in the way of Natural Realism. How can the external world be real, if the space which contains it, and which it fills and occupies, is ideal?

Hamilton's reply to this question was that Space (and Time also) is not purely mental or ideal. Space and Time are not merely forms of thought. They are also "conditions of things;" and besides our *à priori* knowledge of space as a mental form, we have an *à posteriori* knowledge of it as an element of existence.[1] This doctrine has been censured as unphilosophical; but while many writers have put forward strong grounds for maintaining that our idea of space is native or *à priori*, it must be confessed that Hamilton has likewise assigned good reasons for regarding it as a direct apprehension of our sensible experience. And, indeed, Platner appears to have advocated a doctrine similar to that of Hamilton on very similar grounds.[2] Hamilton's principal argument that space or extension is directly attained by the sense of sight is as follows:—"We have by sight a perception of colours, consequently a perception of the difference of colours. But a perception of the distinction of colours necessarily involves the perception of a discriminating line; for if one colour be laid beside or upon another, we only distinguish them as different by perceiving that they limit each other, which limitation necessarily affords a breadthless line—a line of demarcation. One colour laid upon another, in fact, gives a line returning upon itself, that is a figure. But a line and a figure are modifications of extension. The perception of

[1] Lect. i. 403; ii. 114. Reid, 126, note; 841 (a), 882 (b). It is strange that in the face of all these passages (see especially 841 (a)) the late Dean Mansel should have apparently regarded Hamilton's doctrine of space as identical with his own.

[2] Lect. ii. 173.

extension is, therefore, necessarily given in the perception of colours."[1] The space-perceptions of the lower animals also come in to prove the empirical perception of space, and Hamilton insists on another principle, viz. that the imagination, in representing any sensible object, makes use of the organ of sense, by which that object was originally perceived; whence he contends that since we always represent space in imagination as coloured, the perception of space must have been arrived at through the sense of sight.[2] Platner had gone farther, and maintained, as a result of his own observations on a man born blind, that those who have always been destitute of the sense of sight are likewise destitute of the perception of space or extension;[3] but his observations are not wholly satisfactory, and Hamilton, in quoting the passage, does not express his complete concurrence in Platner's conclusion. Indeed, he elsewhere expresses an opinion that there is some perception of space—at all events, of locality—in the every exercise of any of our senses; but his arguments in favour of an empirical cognition of space are mainly derived from the sense of sight.

Sir William Hamilton's arguments in favour of this theory of Natural Realism are two-fold, positive and negative. The positive argument consists of a direct appeal to consciousness —that is, not merely to the consciousness of the individual, but to the general consciousness of mankind, as attested by their expressions and actions. This latter argument is what is known as appealing to Common Sense. "To say that all

[1] Lect. ii. 165. Hamilton takes no notice of the motions of the eye and the muscular sensations which accompany them: but there are strong reasons for believing, 1st, that we can perceive extension when the eye is at rest; and 2ndly, that the motions of the eye mainly act by altering the optical or visual impressions themselves, rather than by associating those impressions with muscular sensations, or muscular movements, of our arms or legs.

[2] Lect. ii. 168-9.

[3] Lect. ii. 174.

men naturally believe in such a knowledge," says Hamilton, "is only, in other words, to say that they believe it upon the authority of consciousness. A fact of consciousness, and a fact of the common sense of mankind, are only various expressions of the same import."[1] But no philosopher can consistently reject any portion of the testimony of consciousness; and as it testifies to our immediate perception or cognition of the external world, every philosopher is bound to accept this testimony as an ultimate truth. We do not find in consciousness a mere belief that the external world exists; we find there a belief that we perceive it—know it—as existing. Convince me, says Hamilton, that I am wrong in thinking that I perceive the external world, and I will readily grant that I am also wrong in believing in its existence. My only reason for believing that it exists, is my belief that I perceive it, and if the latter belief is to be abandoned or declared an illusion, the former must fall along with it. Hamilton would, in some passages, appear, like Reid, to be the advocate of the popular belief in its entirety; but, taking his writings as a whole, it seems clear that his object was rather to point out the element of truth on which the popular belief reposed—to show that it was not a total error, a mere delusion—and that though we did not immediately perceive so large a portion of the external world as the vulgar supposed, we had an immediate perception of some of it, and that from the portion which we perceived, the remainder could be inferred by a simple and legitimate process.[2] "The first problem of philosophy," he tells us, is "to seek out, purify, and

[1] Lect. i. 292.

[2] Accordingly we find Hamilton saying, "It is sufficient to establish the simple fact that we are competent, as consciousness assures us, to apprehend, through sense, the non-ego in certain limited relations; and it is of no consequence whatever, either to our certainty of the reality of

establish, by intellectual analysis and criticism, the elementary feelings or beliefs, in which are given the elementary truths, of which all are in possession; and the argument from Common Sense being the allegation of these feelings, as explicated and ascertained, in proof of the relative truths and their necessary consequences, this argument is manifestly dependent on philosophy as an art—as an acquired dexterity—and cannot, notwithstanding the errors they have so frequently committed, be taken out of the hands of the philosophers. Common Sense is like Common Law. Each may be laid down as the general rule of decision, but in the one case it must be left to the jurist, in the other to the philosopher, to ascertain what are the contents of the rule; and though in both instances the common man may be cited as a witness for the custom or the fact, in neither can he be allowed to officiate as advocate or as judge;" [1] and he immediately afterwards proceeds to blame some of the Scottish philosophers for not proclaiming that the argument from Common Sense was "no appeal to the undeveloped beliefs of the unreflective many," and for not inculcating that it "presupposed a critical analysis of these beliefs by the philosophers themselves." When the original facts of consciousness are thus separated by analysis from the portions of our acquired knowledge, which in the vulgar mind is intimately connected with them, the philosopher can appeal to the vulgar in support of his theory. Perhaps the most remarkable instance of a vulgar error that history records is the popular belief prior to the time of Copernicus, that the heavenly bodies revolved round the earth every twenty-four hours. The Copernican theory was at first

a material world, or to our ultimate knowledge of its properties, whether by this primary apprehension we lay hold, in the first instance, of a larger or a lesser portion of its contents." (Reid, p. 814 (a).)

[1] Reid, 752 (a).

regarded as a strange paradox, but its advocates were able to point out many instances in which our own motions produced the same sensible effects as those of external bodies—in which, when we ourselves moved, the body we were looking at appeared to do so. There was thus an element of truth in the popular belief. There was a motion and a motion of revolution, though not that which mankind in general supposed. Now if a controversy had afterwards arisen between the Copernicans, and another school of philosophers who denied that there was any motion at all in the case and explained the whole appearance as an illusion, the Copernicans would have been justified in appealing to the popular belief of mankind in proof that there was really some motion or other, and a motion which produced similar effects on the senses to that which the vulgar believed in. This example will illustrate the position of Sir William Hamilton in relation to the Idealists. He admits that when the vulgar believe in the immediate perception of a non-ego outside of, and at a distance from, our bodily organism, they are in error; and yet he appeals to their belief as a proof that some external non-ego is perceived, and that the idealistic theory which explains this non-ego and its externality as a total delusion, is erroneous. But Hamilton goes beyond this, and maintains that even the philosophers who denied that we have an immediate perception of the external world are compelled to admit that consciousness attests the contrary, and to allege that consciousness is in this respect mistaken.[1] It would be impossible here to examine these quotations in detail, but it may be remarked that according to many philosophers our original consciousness becomes largely modified by experience and association, and the additions thus made to it acquire all the appearance

[1] Reid, pp. 747-8. Lect. i. 289-92. See, however, as to Descartes, Reid, 964 (b), and as to Brown and others, Lect. ii. 106.

of originality, and, in fact, become inseparable from the parts which are really original. Consciousness thus very soon arrives at a stage at which its original deliverances are not to be distinguished from subsequent acquisitions by any effort of reflexion, or, to use Mr. Mill's phrase, of introspection ; and a philosopher who entertains this opinion may admit that our *present* consciousness testifies to the (apparently) immediate perception of an external world, while denying that our *original* consciousness did so. He may thus deny that the perception of the external world is really immediate, while admitting the veracity of all the *original* deliverances of consciousness. Hamilton does not appear to have paid sufficient attention to the views of these philosophers, which, if accepted, would very much weaken the force of his appeals to popular belief and to the confessions of adversaries, as well as to the individual consciousness of his reader or hearer. He believed, however, that he had reliable tests for distinguishing between the original and acquired elements of consciousness, the most prominent of these being the test of necessity. When I pressed my hand against the table, for instance, the conviction that the table was there, and that I perceived it, forced itself upon me with an irresistible necessity that proved the original and intuitive character of the perception. The value of this test will be touched on hereafter. It is enough for the present to say that many philosophers maintain that such a necessity may be generated by association of ideas in cases where there was no original necessity, and consequently the positive portion of Hamilton's argument cannot at present be accepted as conclusive. The question would probably have been dealt with more fully if Hamilton had lived to complete his system, for in his sketch of a preface to his edition to Reid, he writes: "An element of thought being found necessary, there remains a further process to ascertain whether

it be, 1st, by nature or education; 2nd, ultimately or derivatively necessary; 3rd, positive or negative." [1] But it cannot be said that such an inquiry actually carried out is to be met with in his writings, except as regards the third of these questions.

Hamilton also argues that a consciousness of a mental operation involves a consciousness of its object, and that since we are conscious of the act of perception, we must be conscious of the object of that act; [2] and that, in fact, since the consciousness of a relative involves that of its correlative, the consciousness of the ego (as such) implies a consciousness of the non-ego.[3] This argument, however, must be taken in connexion with his distinction between immediate and mediate knowledge, which on more than one occasions he developes at considerable length, but which is briefly given in his definitions of them. "They are," says he, "thus defined. Intuitive or immediate knowledge is that in which there is only one object, and in which that object is known in itself, or as existing. Representative or mediate knowledge, on the contrary, is that in which there are two objects—an immediate object and a mediate object—the immediate object, or that known in itself, being a mere subjective or mental mode, relative to and representing a reality beyond the sphere of consciousness—the mediate object is that reality thus supposed and represented." [4] It is plain from this extract, as well as many other passages, that when the doctrine that consciousness of the operation implies consciousness of its object

[1] Reid, p. xviii.

[2] Lect. i. 211, seq.

[3] Lect. i. 225. This was the argument by which Cousin sought to prove that we are conscious of the Infinite. We are admittedly conscious of the finite, but cannot be conscious of one relative without the other. This reasoning, however, Hamilton there rejects. (*Discussions*, p. 18.) But the non-ego is not, in Hamilton's opinion, a mere negative like the Infinite.

[4] Lect. ii. 87-8.

is applied to our mediate or representative knowledge, where there are two objects, it must be understood of one of these objects only—namely, of what Hamilton calls the immediate object, to the exclusion of what he terms the mediate object. But in applying it to our immediate knowledge, where there is but a single object, no such difficulty or ambiguity arises. The correct mode of expressing the doctrine would, in fact, be that the consciousness of an operation implies the consciousness of its *immediate* object.[1] As thus explained, however, Hamilton's argument seems to beg the question, for the Cosmothetic Idealist would deny that the external object is the *immediate* object of the mental operation known as perception. But Hamilton, in the passages referred to, is merely engaged in refuting Reid and Stewart. These philosophers had denied that we are conscious of the

[1] Mr. Mill understands Hamilton as applying this doctrine to the *mediate* object of our representative or mediate knowledge, or rather he seems to take it for granted that this is the only thing that Hamilton could have meant by the term "object," when used in connexion with mediate or representative knowledge. He has, of course, no difficulty in showing that the doctrine, so understood, is erroneous. (*Examination of Hamilton*, p. 150, seq.) The doctrine in question was no doubt intended by Hamilton to apply to belief as well as to knowledge; but in *mediate* belief, as in mediate knowledge, the only object of which we are conscious is the immediate object—the subject-object. This non-recognition of the distinction between the immediate and the mediate object—the subject-object and the object-object—has led Mr. Mill in an other error. He alleges (*Examination*, pp. 223-4) that Hamilton confessed that the distinction which consciousness draws between the ego and the non-ego is sometimes a mistake, and cites a passage in which Hamilton states that in all cognition there is an *object* (Lect. ii. 432), as an assertion that we sometimes regard modes of self "as external and a non-ego." The very words quoted by Mr. Mill ought to have shown him that Hamilton was only speaking of the subject-object—of a mode of the ego which consciousness distinguishes "as an *accident*, from the ego as the *subject* of that accident."

external object, while at the same time they seem to have admitted that the external object is the immediate object of the act of perception. If so, the argument is good as against them, and it was not perhaps intended to be applied generally.

The negative portion of Hamilton's argument is mainly directed against the class of philosophers whom he designates Hypothetical Realists, or Cosmothetic Idealists—namely, those who affirmed the existence of the external world, while denying the immediate perception of it—a class in which, among others, Dr. Brown must undoubtedly be placed. The main scope of Hamilton's argument against these philosophers is to prove that they had no right to believe in an external world at all, and this I think he must be regarded as having established. Some of his reasonings are, no doubt, open to exception. He assumes that they all admitted that consciousness testified that our perception of the external world was immediate or intuitive, but denied that this testimony was veracious; and he enlarges at considerable length on the absurdity of denying the veracity of consciousness, or of alleging that some of its utterances are true and others false, and endeavouring to discriminate between them. Against Brown, he insists on the special absurdity of which that philosopher was guilty in accepting the existence of the external world merely on account of our natural belief in its existence, while denying the truth of our natural belief in the immediate perception of it—which perception, or supposed perception, is in reality our only reason for believing that it exists. Again, since the Cosmothetic Idealists deny that we have an immediate or intuitive knowledge of matter, they are bound to maintain that our knowledge of it is mediate or representative; but in opposing this doctrine Hamilton seems to me sometimes to play on the words "representative" and "representation;" as, for instance, when he calls on the

Cosmothetic Idealists to prove that their representation is ***like*** the object—that it *truly* represents it. This argument is hardly applicable, at all events, to philosophers who maintained, with Brown, that the only relation between the (so-called) representation and the object is that of cause and effect, the object being the unknown cause of the representation, or rather mental modification; and on this ground Mr. Mill vindicates Brown against a considerable part of Hamilton's criticism. With more force Hamilton insists that all representation presupposes a presentation—that all mediate knowledge presupposes an immediate knowledge upon which it rests—but that, as perception is the faculty by which we acquire our *first* knowledge of the external world, it cannot suppose a *previous* knowledge as its condition.[1] But even here Brown could reply that the so-called perception of the external world consisted in nothing but inferring a cause for our sensations, and that the idea of cause being either *à priori* or attainable by means of internal consciousness, no special faculty of External Perception was necessary in order to acquire it. If, however, Hamilton has not dealt with this doctrine of Perception by means of the Principle of Causality as fully as we might have expected, he has left us in no doubt of his opinions upon the subject. As already remarked, even assuming that the cause of our sensations cannot be our own

[1] Lect ii. 106. The passage is strangely misunderstood by Mr. Mill (*Examination of Hamilton*, p. 204, 4th edit.). He understands Hamilton as stating, that we cannot recognize a mental modification as representative of something else, unless we have a *present* knowledge of that something else otherwise obtained; which is, of course, inconsistent with the fact of memory as well as with Sir William Hamilton's description of it. But Hamilton's doctrine is not that I cannot know a picture to be like the original, unless I have a *present* knowledge of the original otherwise acquired, but merely that I could not recognize the likeness unless I had *at some time or other* seen the original. This seems almost a truism.—See further, Reid, 811 (a).

minds, it may be God or some other spirit;[1] and therefore this Principle of Causality (assuming its validity) leads to no external world. Nor is the matter much mended by employing the phrase the *external* cause of our sensations. If by "external" in this phrase is only meant independent of our own minds, God or any other spirit is external in this sense. If by "external cause" is meant the cause of my feeling or perception of externality, there is no reason why that particular feeling or perception should not be produced in me by the agency of God or of some other mind, as well as any other feeling. But if by "external cause" is meant a cause existing in space, the question whether such a cause constitutes a veritable external world will depend on the view which we take of the nature of space. If space is purely mental—if it is a mere feeling or state of the mind which perceives or represents it—a cause existing in space is merely a cause existing in the mind or minds wherein the idea or representation of space is found; while, if space is something independent of my own or of any other mind, a cause of my sensations existing in space must be regarded as likewise independent of them. But the Principle of Causality, which merely refers our sensations to some cause or other, cannot inform us whether this unknown cause exists in space or not. For that purpose we require some further evidence, and it is not easy to see what that other evidence can be, unless we are in some manner informed of the fact by direct perception.

It is, perhaps, too early to form a correct estimate of the value of the doctrine of Natural Realism which Sir William Hamilton has thus bequeathed to philosophy; but it will, I believe, be confessed by the most competent judges that he has

[1] He even asserts in one passage that it *must* be God or some other spirit (Lect. ii. 142); but a few pages earlier (Lect. ii. 120), he admitted the contrary.

logically extinguished Cosmothetic Idealism, and established that, in his own language, "Natural Realism and Absolute Idealism are the only systems worthy of a philosopher."[1] He recognizes, however, certain other Theories of Perception of which it may be desirable to give a short account. There is first Nihilism, which denies the absolute or independent existence either of mind or of matter. If this theory merely denies that either mind or matter exist *as substances,* it is hardly correct to call it a theory of perception; for Hamilton admits that in perception we do not cognize the substances either of mind or of matter, but only their attributes or phænomena Nihilism is indeed a theory concerning the nature of the thing or things perceived, but it is not a theory as to what is revealed in the act of perception, and therefore should not, I think, be classed with Natural Realism and Absolute Idealism as a theory of perception. A similar observation applies to the next system in Hamilton's list—that of Absolute Identity. This system maintains that the ego and the non-ego which we cognize in every act of perception, are both modifications of the same ultimate substance, which is not properly designated either mind or matter. The advocates of this theory can hardly maintain that this identity of the two substances is revealed in the act of perception itself, and therefore this theory, like Nihilism, relates to the conclusions which we form concerning the nature of the ego and the non-ego on some other ground than the mere act of sensitive perception.[2] Lastly, there is Materialism. Here I should state that Natural Realism, as Sir William

[1] Reid, 817, note.

[2] Cousin is mentioned by Hamilton as one of the ablest advocates of this view. But he arrives at the external world by the operation of the Principle of Causality in referring our sensations to unknown causes, and is therefore, so far as the process of perception is concerned, a Cosmothetic Idealist.

Hamilton propounded it, asserts something more than the direct intuitive perception of the external world. It also asserts that the material object thus immediately perceived is distinct from, and independent of, the mind or ego; for which reason he sometimes calls his system Natural Dualism, because it asserts at least *two* ultimate existences—mind and matter—ego and non-ego. Hence a materialist who believes in an immediate perception of the external world is not regarded by Sir William Hamilton as a Natural Realist, but placed in a separate class. It would, perhaps, have been better to have extended the meaning of the phrase Natural Realist so as to include all who believe in an immediate perception of the external world (in the sense already explained), whether Materialists or Spiritualists. Matter is not one thing, but a number of things in many respects dissimilar to each other in their properties, and if the perceived non-ego be matter, its distinction from the ego seems sufficiently preserved, provided the ego is regarded as *other* matter. In the same way the Idealist can preserve the distinction between the ego and the non-ego intact by maintaining that the non-ego is *another* mind. Materialists who believe in an immediate perception of the external world would thus seem to be in truth Natural Realists, while those Materialists who deny that immediate perception should be classed as Cosmothetic Idealists. Cosmothetic Idealism again has, according to Hamilton, two principal forms (which he sometimes expands to three), viz. that which holds that the representative object—which on that theory is the object immediately known in perception – is a modification of mind, and that which denies it to be so. But those philosophers who held that the representative object was not a modification of mind, maintained that it was a modification of matter, situated in the brain or other *sensorium*. Such a doctrine belongs not to

Cosmothetic Idealism, but to Natural Realism; for Hamilton himself, as we have seen, thinks it sufficient if we have an immediate perception of the nerve-extremities which terminate in the brain, and holds that, if we have a direct consciousness of any portion of the material world, it is of no consequence whether that portion is larger or smaller.[1] The philosophers in question may have been mistaken in holding that the objects in the brain which were thus immediately perceived were *like* the objects in the extra-organic world, and that it was by means of this likeness that we were enabled to pass from the one to the other. But an erroneous or defective form of Natural Realism is one thing, and Cosmothetic Idealism is another. It may be added, that the philosophers to whom I now refer—Democritus, Epicurus, and Sir Kenelm Digby, for instance — were confessedly Materialists; a fact which indicates that the several Theories of Perception enumerated by Sir William Hamilton are not really distinct from each other.[2] Natural Realism is, when considered by itself, much more akin to Empiricism than to Intellectualism; and but for the other principles inculcated in Hamilton's philosophy, we might have expected that his disciples would have belonged to the *à posteriori* rather than the *à priori* school of philosophers. It is only by the assumption of a two-fold apprehension of space or extension—the one *priori*, and the other empirical—that Hamilton succeeds in reconciling his Natural Realism with his Intellectualism. The doctrine of Natural Realism, however, is attended with other difficulties

[1] Possibly, however, Hamilton thought it essential to Natural Realism, that consciousness should directly attain to a larger or smaller portion of the *extra-organic* world. If so, the advocates of what he calls "the cruder form of the representative hypothesis," were not Natural Realists.

[2] Accordingly, in an Appendix to his Lectures, Hamilton gives an explanation of the adoption of the representative theory by materialists. Lect. i. 521.

which Hamilton's followers do not seem hitherto to have effected much towards removing. Some of those relating to the immediate perception of our own organism as extended, are mentioned by Hamilton himself in the note to Reid, p. 817, already referred to; and indeed, if we have an immediate perception of our own extended nervous organism, it is not easy to explain how there can be any doubt as to the limits and locality of the extension which we immediately perceive. Again, when we endeavour to pass to the extra-organic world, the question arises whether our locomotive faculty, or locomotive energy, is known to us *as such* in the absence of all sensation? And even assuming that it is, and also that we are conscious that our locomotive energy is resisted, and not resisted by anything in our own organism, does the process which follows involve anything more than inferring an unknown cause for the resistance which we feel? If we have a direct perception not merely of the resistance but of the thing that resists, this perception ought to give us some information as to the nature of the thing in question; but Hamilton describes the extra-organic world as merely revealed to us in its character of *something* that resists and seems to think that all its other qualities are arrived at by inference rather than by direct apprehension. I am far from implying that these difficulties are insuperable, but they seem to me to be worthy of more attention than they have yet received at the hands of his disciples.[1]

[1] With regard to the extra-organic world I may remark, that parts of our organism may be regarded as an extra-organic world relatively to other parts of it. When the motion of my arm is arrested by bringing it against my leg, it is resisted by something outside the moving portion of my organism, though not outside my organism taken as a whole: and here, on principles of Natural Realism, I may be conscious both of the moving arm and of the leg that resists its motion. This may, perhaps, facilitate the passage from our organism to the extra-organic world.

CHAPTER III.

NECESSARY TRUTHS—THE LAW OF THE CONDITIONED.

I NOW pass to Hamilton's doctrine of Native, Necessary, or *à priori* Truths, which also is one on which the scientific world is at present divided. He was a firm believer in such truths, and gives us several tests or characteristics, by which they can be distinguished from the products of experience or association. In his edition of Reid he specifies four of these tests, viz. 1. Incomprehensibility. 2. Simplicity. 3. Necessity and Absolute Universality. 4. Comparative Evidence and Certainty.[1] The first of these characteristics would perhaps be better described as Inexplicableness, and the chief use both of it and of the second test is to distinguish the ultimate principles from those derived from them. This, however, is mainly a question of classification. If there are any first principles which are known *à priori*, and possess perfect certainty, whatever can be logically deduced from them will also be perfectly certain and independent of all experience. Hamilton sometimes expresses the first of these tests or characteristics by saying that first principles are given to us with a mere belief in their truth,[2] or that they are given to us rather in the form of beliefs than of cognitions;[3] for by belief he does not here mean a conviction which falls short of certainty, but a conviction which rests upon itself, and cannot be deduced from

[1] Reid, 754 (a). [2] Lect. i. 270. [3] Discussions, p. 86.

any other portion of our knowledge.[1] What is ultimate, simple, inexplicable, must, in this sense of the word, always depend upon mere belief or faith. I am certain—that is, I *feel* certain—but I can give no reason for my conviction, except that conviction itself. It is, of course, practically as well as theoretically, of importance to distinguish between original and derivative principles; for Intellectualists will generally admit that the vulgar, and even philosophers, have often ascribed absolute certainty to principles which were not logically deduced from ultimate truths, but also depended in part on the teachings of experience. But the main question at the present day being whether there are any principles whose truth is known to us independent of experience, we may pass over the first two of Hamilton's tests and proceed to the consideration of the third and fourth. The fourth resolves itself into the third. What is universally and necessarily believed must appear to us to be more certain and evident than anything in which our belief is not universal and necessary, and thus universality and necessity come to be the final tests by which alone *à priori* truths can be detected. Hamilton, indeed, on one o two occasions seems disposed to make use of a Kantian test, namely, that any notion or principle is *à priori*, if experience—by which Kant did not mean sensations, but empirical knowledge—would be impossible without it. Thus, according to Kant, the idea of cause is *à priori*, because without it we could not distinguish between sensible experience and the illusions of the imagination. If Hamilton recognized this test, however, he makes but a very sparing use of it. His main reliance is on universality and necessity.

These tests are applicable both to ideas and to judgments.

[1] I do not mean to imply that Hamilton invariably employs the word belief in this signification. The context is usually the best guide to his use of it. See however Lect. iv. 70.

In one sense, indeed, our empirical ideas, when once acquired, become necessary, for we cannot completely obliterate them by any effort of the will. But though I cannot thus finally obliterate the idea of fire, for instance, from my mind, I can imagine all the fires in the universe extinguished. On the other hand I cannot imagine all the space in the universe (or, indeed, any part of it) annihilated. The idea of space thus possesses a necessity which the idea of fire does not; and this necessity, according to Sir William Hamilton, affords a proof of its *à priori* origin, though, as we have seen, he was of opinion that it could *also* be derived from experience. Again, there are probably some persons in the world who have no idea of fire, while there are none who have not the idea of space;[1] and we can suppose fire to be absent from certain parts of the world, while we cannot suppose a similar absence of space. The idea of space is thus universal in two senses. It is found in every man, and we cannot avoid supposing it to exist throughout the entire universe. It is therefore, according to Sir William Hamilton, *à priori*. Universality and necessity, indeed, imply each other. A necessary idea, or principle, does not mean one which some individual feels to be necessary, but one which all men feel to be necessary; and that which is strictly and absolutely universal—to which we cannot discover any exception, not only in our experience but even in imagination—is necessary. If we *could* imagine an exception, it seems almost certain that, by giving free scope to our imagination, we *would* do so. Therefore if in fact we never imagine an exception, it may fairly be assumed that we cannot.

The tests are, however, still more obviously applicable to judgments or principles. Take, for instance, the judgment,

[1] This, of course, is intended as an exposition of Sir William Hamilton's views, and not an expression of my own opinion.

Two right lines cannot enclose a space. All men, perhaps, do not form this judgment, but all men who put together the requisite ideas, believe that the proposition or judgment is true. It is thus universally believed in this sense that all men to whose minds the proposition is present believe it. There is, at all events, no one who *dis*believes it. Again, it is universal in the second sense. We believe it to be true of *every* pair of right lines, without any exception. And it is necessary; for we cannot, by the utmost effort we are capable of, imagine two right lines enclosing a space. The proposition in question, being thus universal and necessary, is *à priori*, according to Sir William Hamilton.

How far this necessity, and consequent *à priori* origin of ideas and of judgments coincides, Hamilton has neglected to inquire. In his discussion on causality, he seems to assume that if the idea of cause is not *à priori*, the proposition or judgment that whatever begins to exist has a cause (which is known as the Principle of Causality), cannot be so. It does not seem to have occurred to him that if this assumption was true, the Principle of Causality could not be *à priori* unless the other notion involved in it—that of a beginning of existence—was *à priori* also. Hamilton, indeed, though aware of the Kantian distinction between Analytical and Synthetical (or Explicative and Ampliative) judgments, would sometimes seem to have adopted an opposite view himself, and to have regarded judgments or propositions as mere analyses of our ideas or notions.[1] The Principle of Causality would from this point of view be regarded as a mere analysis of the notion of cause, and the *à priori* character of both Idea and Principle would rest on the same footing.[2] Indeed, in Hamilton's Tabular

[1] See Chapter VI.

[2] In this very discussion, however, he describes the Principle of Causality as synthetical, and says that it cannot be derived from the

Conspectus of the various Theories of Causation, we must understand his phrase "judgment of causality,"[1] as sometimes meaning the *Idea* of Cause, and sometimes the *Principle* of Causality; and the systems of those philosophers who did not identify the two will fall under at least two of the heads in Hamilton's table. Thus, the system of Reid falls under the second head as regards the Idea of Cause, and under the fifth as regards the Principle of Causality.

The value of these tests of universality and necessity has since been the subject of much controversy. Some philosophers have maintained that constant experience and association of ideas is sufficient to produce both, while others have denied that any ideas or propositions are in reality universal and necessary. To enter into this controversy would be foreign to the scope of the present work. I will only say that Sir William Hamilton does not seem to have paid much attention to the Association Psychology, and that those who expect to find in his writings a formal refutation of its later developments will be disappointed. The tests of universality and necessity had long passed current with the greater part of the philosophical world before Sir William Hamilton employed them; and the Associationists themselves are equally ready to appeal to theories which have long passed current, though aware that they are disputed by some—to appeal, for instance, to the acquired perceptions of sight, as defined by Berkeley's Theory of Vision, and the secondary desires as described by Hutcheson. Both sides are indeed too much inclined to accept disputable facts which accord with their own views as established scientific truths, and to expound them as

Principle of Contradiction for this reason (Lect. ii. 396). His own derivation of it from the law of the Conditioned also implies its synthetical character. Parts of this Lecture, however, were written as late as 1854.

[1] Lect. ii. 387; Discussions, 613.

such to their readers or hearers—especially if they have in general met with a favourable reception at the hands of philosophers.

But Hamilton's mode of employing the tests of universality and necessity involves something peculiar to himself, and to which he attached no slight importance. He divides mental facts which involve this necessity upon two distinct principles. "There is one necessity," says he, "when we cannot construe it to our minds as possible that the deliverance of consciousness should not be true. This logical impossibility occurs in the case of what are called necessary truths—truths of reason or intelligence—as in the law of Causality, the law of Substance, and still more in the laws of Identity, Contradiction, and Excluded Middle. There is another necessity when it is not unthinkable that the deliverance of consciousness may possibly be false, but at the same time when we cannot but admit that this deliverance is of such or such a purport. This is seen in the case of what are called contingent truths, or truths of fact. Thus, for example, I can theoretically suppose that the external object I am conscious of in perception may be in reality nothing but a mode of mind, or self. I am unable, however, to think that it does not appear to me—that consciousness does not compel me to regard it—*as* external, *as* a mode of matter, or not-self. And, such being the case, I cannot practically believe the supposition I am able speculatively to maintain."[1] Hamilton thus in one sense rests our *à posteriori* or empirical knowledge, no less than our *à priori* knowledge, on the necessity of believing it, just as Mr. Herbert Spencer rests it on the inconceivableness of the opposite.[2] The necessity of the

[1] Reid, 754 (b).

[2] Hamilton's test must be regarded as superior to Mr. Spencer's by

belief is what distinguishes my perception of the external world from my imagination of it when my senses are inactive. I can represent to myself that this perception is an illusion, and that the entire phænomenon is a mere dream; but though I can make this supposition, and maintain it in speculation, I cannot practically believe it. This kind of necessity is a test of an original fact of consciousness—that is to say, an immediate or direct deliverance of consciousness—but it does not prove that the fact is *à priori*, and arises from the constitution of the mind itself. It rather proves the contrary; for whatever is necessitated by the very constitution of the thinking faculty must be irreversible in thought.

But of the necessary truths proper—truths of intelligence, or those which are irreversible in thought—another division has to be made, and one which Sir William Hamilton regards as of such importance that its recognition determines a new era in philosophy.[1] For the necessity of some principles is of a positive, and of others of a negative, character; and while the former kind of necessity is a test of truth, the latter is far from being so. When a proposition or judgment is positively necessary it is conceivable, while its contradictory opposite is inconceivable. When the necessity is negative, the judgment or proposition, and its contradictory opposite, are both equally inconceivable. Hence the inconceivableness of the opposite of any proposition is no test of its truth; for in all cases where the necessity is negative there are two contradictory propositions, both of which are inconceivable, but one or other

all who admit his distinction between positive and negative necessity. Otherwise the two tests coincide.

[1] Lect. ii. 526-7. See also Lect. ii. 366; Reid, p. 972. Discussions, 833. Notwithstanding the great importance attached by Sir William Hamilton to this distinction, it is quite overlooked by Mr. Mill in his criticism, and some groundless charges of inconsistency are brought against Hamilton in consequence.

of which, on the Principle of Excluded Middle, must be true. Thus we are unable to conceive that *all* space is limited, while at the same time infinite space is equally inconceivable. But space, taken as a whole, must be either finite or infinite, and, consequently, one or other of those inconceivable alternatives must be true. The test or criterion of the truth of an *à priori* principle is thus its own (positive) necessity, and not merely the inconceivableness of its opposite. "The criterion of truth is the" [positive] "necessity determined by the laws which govern our faculties of knowledge, and the consciousness of this necessity is certainty."[1] In such a case, I am conscious of the thought as "an act of power—an act of intellectual force;" whereas, when both alternatives are alike inconceivable, I merely feel a "powerlessness," an "impotence," an "imbecility." To this class of positively necessary data of intelligence Hamilton would refer "the notion of Existence and its modifications, the principles of Identity and Contradiction and Exeluded Middle, and the intuitions of Space and Time;"[2] but, as he adds an "etc.," these are rather to be taken as instances than as an attempt at a complete enumeration. The "positive necessity of so thinking never illudes—is never even the occasion of deception; but the negative necessity of not so thinking is even naturally the source of deception,"[3] inasmuch as in our recoil from one inconceivable extreme we are apt to fall into the other, which is equally inconceivable.

All negatively necessary principles appear to be summed up in the single Law of the Conditioned which Hamilton thus enounces: "All positive thought lies between two extremes neither of which we can conceive as possible, yet as mutual contradictories the one or the other we must recognize as necessary."[4] Inconceivableness here, of course, affords no

[1] Lect. iv. 69. [2] Lect. ii. 367. [3] Reid, 972 (b).
[4] Reid, 911. Similar statements occur elsewhere.

test of truth since both the opposed propositions are equally inconceivable; but we may, notwithstanding, have reasons for believing in the one alternative and rejecting the other. Thus a free action is inconceivable, but it is equally inconceivable that all actions that have ever taken place (whether of God or man) were necessarily determined, which they must have been if there never was a free action. In this exigency the Moral Faculty comes to our aid and turns the scale in favour of freedom. Hamilton gives numerous examples of the Law of the Conditioned. Thus space must be either finite or infinite, but neither alternative is conceivable. It must be either finitely or infinitely divisible, but neither alternative is conceivable. It is the same thing with time. Existence, too, must either have had an absolute commencement or something must have existed from eternity *à parte ante;* but neither of these alternatives is conceivable. God—the ultimate being—must be either in His own nature absolute (that is, finished, perfected, completed), or He must be infinite; but it is impossible to conceive either. These, moreover, are only examples, and must not be regarded as exhausting the law among them.

This Law of the Conditioned has been assailed on various grounds. Sir William Hamilton's opponents, indeed, have rather dealt with his examples of the law than with the law itself; but a law couched in such general terms can hardly be discussed otherwise than through these examples, and any objections which apply to *all* the examples alike may be fairly regarded as objections to the law itself rather than to the author's illustrations of it. On the other hand, the fact that Hamilton had given one or two bad examples would not militate against the truth of the law, if it was sufficiently vindicated in other instances. The objections referred to may, I think, be thus summarized:—1st. The alleged contradictory opposites are not really contradictory, since a third alternative is admissible

They may therefore be, and, in fact, both of them are, false. This is in substance Kant's solution of the problems of the finitude or infinity of the universe, of the finite or infinite divisibility of matter, and of freedom and necessity, at least when that problem is propounded in its crudest form. But the Kantian solution assumes the idealistic basis on which the critical philosophy rests, and is not open to a Natural Realist. The question at issue between Kant and Hamilton must therefore be decided on other grounds. 2ndly. It has been denied that the two contradictory opposites are both inconceivable, or at least that they are both inconceivable in the same sense. Thus Mr. Mill thinks it possible to conceive both the finite and the infinite divisibility of space; and contends that, though we cannot conceive all space as finite, we can conceive it as infinite. Here the controversy turns to a great extent on the meaning which we attach to the word "conceive," and to the corresponding term "inconceivable." That we cannot imagine an infinite space must, I think, be conceded; and it seems equally impossible to picture to ourselves *all* space as finite. When I imagine a finite space I am, in fact, compelled, as Mr. Mill says, to imagine other space beyond it—I cannot imagine it as constituting the whole of space. Both alternatives, therefore, would here seem to be unimaginable; and yet if space is anything real (which the Natural Realist must hold it to be) the conclusion that it must be either finite or infinite seems to be inevitable. As regards infinite divisibility, Mr. Mill's idea of it is that of smallness without limit—of a thing smaller than any finite object. I doubt if any such thing is capable of being imagined; and, indeed, it may be fairly contended that our only idea of a smaller than *any* finite is that of pure nothing, which is clearly unimaginable. On the other hand, when dealing with the conceivableness of a limit to the divisibility of space, Mr. Mill rather attempts to show that,

with a different experience, it might become conceivable than that it actually is so. No one, I believe, can really imagine an indivisible part of space, whether of finite magnitude or infinitely small, and therefore both alternatives are here also inconceivable—that is, unimaginable. 3rdly. Mr. Mill objects to Hamilton's statement, that all that we can positively conceive lies in the *mean* between the two inconceivable *extremes*. This, however, is at best an objection to the language in which Hamilton expresses the law rather than to the law itself. Space or extension is a thing of which we have in some sense a positive conception, for we can positively conceive a right line, a square, and a circle. But, notwithstanding this positive character of the notion of space, we are unable to conceive it either as finite or as infinite, and yet it must be either one or the other. This is the substance of Hamilton's doctrine concerning space, and he extends it to everything of which we have a positive notion. However positive our notion of a thing may be, we shall, when we endeavour to carry our speculations concerning that thing to the utmost limit, find ourselves placed betwixt two contradictory alternatives, both of which are unthinkable, but one or other of which must be true. This doctrine, I think, Mr. Mill can hardly be said to have shaken. When, indeed, he seeks to derive some of the inconceivabilities insisted on by Sir William Hamilton from inseparable association, and not from any original powerlessness or imbecility of the mind, his argument goes to prove that the Law of the Conditioned is not an ultimate mental law; but this part of the discussion leads us back to a question which I have declined to discuss, viz. whether experience and association can give rise to necessity, and, consequently, whether necessity can be relied on as a test of ultimate or *à priori* truths.[1]

[1] On this whole question see the 6th Chapter of Mill's *Examination of*

It is to be observed that it is no part of this theory of the Conditioned that either of the inconceivable alternatives should be self-contradictory, but rather the reverse. The highest kind of positive necessity, in fact, is that which arises when the opposite alternative is self-contradictory. If one alternative was self-contradictory, we could not doubt that the other was the true one; and if both were self-contradictory, it would be equally clear that they were not really *alternatives*—that they were not *mutually* contradictory propositions, one or other of which must be true. On the contrary, both would evidently be false, and there would of necessity be a third possible contingency in which alone the truth was to be found. When, therefore, Hamilton speaks, for instance, of the Absolute and the Infinite as two contradictory opposites, both of which are inconceivable, he does not mean that either of these opposites is self-contradictory; he rather implies that neither of them is so, for otherwise they would not come under his Law of the Conditioned at all. But while a positive notion is very easily distinguished from its contradictory opposite, the distinction is not so easily seen when the notion is negative—that is, inconceivable. In such cases men have sometimes assumed that two notions are compatible when they are really incompatible, and have endeavoured to get over the difficulty of two inconceivable opposites, one or other of which must be true, by forming a complex notion composed of both. This complex notion is, of course, in reality self-contradictory; but since both of the contradictory elements are inconceivable, the contradiction may for a considerable time escape detection. Thus neither the

Hamilton. In that work, I may observe, the order in which the different portions of Hamiltonian philosophy is discussed is often objectionable, and seems to betray a misapprehension as to the connexion between the parts of the system.

Infinite nor the Absolute, as defined by Hamilton, are self-contradictory notions, though both are inconceivable. But many philosophers have applied to their Deity or Ultimate Being a notion composed of the two; and this notion is self-contradictory because the notion of the Infinite is contradictory to that of the Absolute. But since both the Infinite and the Absolute are inconceivable, the self-contradictory character of the notion which includes the two is often overlooked.[1] This remark may be useful in correcting misapprehensions as to the nature of the Law of the Conditioned. In a future chapter Hamilton's doctrine of the Unconditioned will be more fully explained.

[1] This complex notion has no special name, and therefore different philosophers have described it as the Infinite, as the Absolute, and even as the Unconditioned. It is not, however, to be confounded with the Unconditioned of Hamilton, which is not a complex notion made up of the Infinite and the Absolute, but a higher and more general notion including both under it. Both are contained in its extension but not in its comprehension. Hamilton no doubt, in one passage, speaks of the Unconditioned as "self-contradictory" on the ground that it includes the two contradictory opposites, Absolute and Infinite (Discussions, p. 17); but he is evidently speaking of the Unconditioned of his opponents and not of the Unconditioned as defined by himself. On this whole subject see Chapter V.

CHAPTER IV.

THE LAW OF CAUSATION.

One of the best known applications which Hamilton has made of the law of the Conditioned is to explain the Principle of Causality already referred to. This principle he derives from our inability to conceive an absolute commencement. But experience apparently presents us with such absolute commencements. The dew which is deposited on the grass on a fine evening seems to have started suddenly into existence, for no visible wet of any kind was previously falling. But I cannot conceive it to have absolutely commenced, and therefore I am driven to conceive it as a thing that previously existed in some other form; for I have the evidence of my senses that it did not previously exist in the form in which I now see it. Accordingly, I find that, as a matter of fact, it previously existed in the form of aqueous vapour diffused through the air; and this aqueous vapour would thus seem to be the cause of the dew, though, as we shall presently see, Sir William Hamilton did not regard it as constituting the *whole* cause. The principle, however, has a second branch, which does not seem to have met with a formal expression at the hands of any preceding philosopher. If it is impossible to conceive an absolute commencement of existence, it is equally impossible to conceive an absolute termination. The dew insensibly disappears in the sunshine of the following day; but I cannot conceive that it has absolutely ceased to exist. I am therefore driven to suppose that it continues to exist,

though of course in a different form; and as a matter of fact I find that it still exists in the shape of aqueous vapour diffused through the surrounding air, and perhaps partially in the sap or juices of the grass. It has thus produced an effect, and this part of the principle may perhaps be expressed—Whatever (apparently) ceases to exist has an effect.

As thus understood, and limited to the material world, the Principle of Causality would appear to assert nothing more than the permanence or indestructibility of matter. No particle of matter ever begins or ceases to exist in our experience, and when we meet with an apparent commencement or apparent termination of the existence of any material object, we conclude that it is apparent, not real. But Hamilton distinguishes the two principles thus. The principle of the indestructibility of matter depends on the impossibility of conceiving an absolute commencement or termination of existence in *Space;* the Principle of Causality on the impossibility of conceiving an absolute commencement or termination of existence in *Time*. The former he designates the Law of Ultimate Incompressibility, because it asserts that, though bodies can be compressed into a smaller space than they originally occupied, it is impossible to compress them into no space at all—to extrude them, as Hamilton says, from space. The phrase Ultimate Incompressibility is not perhaps well chosen; for the Principle asserts that a thing which occupies space can never cease to occupy space (although the space occupied may become greater or less), and has thus no special reference to compression. And, like the Principle of Causality, it has a second branch, namely, that a thing which now occupies space must have done so at every previous instant of time. Solidity, or occupation of space, is thus an essential attribute of body, which we are enabled to ascribe to it independently of all experience. It is not merely that the

thing would not be *called* body if it ceased to occupy space; but that, in fact, it can never cease—or, rather, can never be conceived as ceasing—to occupy it.[1]

As the Law of Ultimate Incompressibility affirms the impossibility of extruding from space a thing that once occupies space, so the Law of Causation affirms the impossibility of extruding from time a thing which once appears in time. But, while matter only appears in space, both mind and matter appear in time, and thus the Principle of Causality, or Law of Causation, applies to mind and matter alike. But, notwithstanding this greater extension of the Principle of Causality, it may be asked whether the two principles do not coincide in their application to matter. Would not the impossibility of extruding the dew from space, for instance, be sufficient to induce us to look for it in the vapour and sap, after it had dried off the grass, without calling in the Principle of Causality to our aid? and, in fact, if it was extruded from space, would it not at the same instant have had its absolute termination in time? Here, then, it is to be observed that the vapour is not the sole cause of the dew, nor is the dew the sole cause of the subsequent vapour. Cooling was necessary, in the first case, to turn the vapour into dew; and heating, in the second case, to reconvert the dew into vapour.

[1] But this principle, resting on the inconceivableness of an absolute commencement or absolute termination, and an infinite non-commencement or non-termination being equally inconceivable, we cannot regard it as possessing complete certainty or absolute truth. An absolute commencement of material existence may be possible, though we cannot conceive it: and whether existence *has* absolutely commenced or not, cannot be determined on *à priori* grounds. Hamilton, however, has never applied the Law of Ultimate Incompressibility to the *commencement* of material existence, nor indeed to its termination otherwise than by means of compression. The observations in the text, wherever they go beyond this, are my own deductions. See also note, p. 81, of the present work, where another view of the law in question is suggested.

But heat and cold are not supposed to be material objects or substances, to which the Law of Ultimate Incompressibility is applicable; and therefore that law alone cannot explain how the dew first comes to be deposited, and afterwards dries away. It explains the constancy of the matter, but not the change of form. But then, it will be asked, Can the cold in the one case and the heat in the other be regarded as forms under which the dew or the vapour previously existed? Hamilton thinks they can. Everything in the preceding instant of time that contributed to the existence of the (apparently) new phænomenon in the subsequent instant is regarded by him as one of the forms under which that phænomenon previously existed; and since the cold as well as the vapour was present at the instant before the dew was deposited, and since the dew would not have been deposited unless both had then co-existed, he regards both the cold and the vapour as forms in which the dew had previously existed. Both occupied the preceding instant of time, though the vapour only can be said to have occupied space; for heat and cold, though they act in space, are not regarded as occupying it. If we take the state of the entire Universe, mental as well as material, at any two successive moments, we shall find a great many phænomena common to both instants, but also some peculiar to each. The phænomena peculiar to the former moment appear to have absolutely terminated; those peculiar to the latter moment appear to have absolutely commenced. The impossibility of conceiving an absolute commencement or an absolute termination compels us to regard both these appearances as deceptive, and we conclude that the phænomena peculiar to the latter moment previously existed, and that the phænomena peculiar to the former moment still continue to exist—in other words, that the phænomena peculiar to the former moment are the causes of the phænomena peculiar to the latter. The

Principle of Causality, as I understand it, only applies to the *aggregate* of peculiar phænomena in these two successive moments. To analyze this aggregate into parts, and to pronounce that so much of the peculiar phænomena of the former moment is the cause of so much of the peculiar phenomena of the latter, is the work of experience. Experience alone can inform us of the particular causes of particular effects; but that every event has a cause, or rather causes, is known *à priori*.[1]

Thus as the Law of Ultimate Incompressibility asserts the constancy of the quantity of Matter, the Law of Causation asserts the constancy of the quantity of Existence—which Existence may be either material or mental. It is consistent with the transformation of mental into material existence, and *vice versâ*, the former being our notion of creation, and the latter our notion of annihilation. "Form to yourselves," says Sir William Hamilton, "a notion of the universe. Now can you conceive that the quantity of existence, of which that universe is the sum, is either amplified or diminished? You can conceive the creation of a world as lightly as you can conceive the creation of an atom.[2] But what is a creation? It is not the springing of nothing into something. Far from it. It is conceived, and is by us conceivable, merely as the evolution of a new *form* of existence by the fiat of the Deity. Let us suppose the very crisis of creation. Can we realize it to ourselves in thought that the moment after the universe came into manifested being, there was a larger complement of existence in the universe and its author together than there was the moment before in the Deity himself alone? This we

[1] Lect. ii. 408—9.

[2] This passage seems to imply that Hamilton did not regard the Law of Ultimate Incompressibility, as asserting the constancy of the quantity of matter in the Universe. See note, p. 81.

cannot imagine. What I have now said of our conceptions of creation holds true of our conceptions of annihilation. We can conceive no real annihilation — no absolute sinking of something into nothing. But as creation is cogitable by us only as an exertion of Divine power, so annihliation is only to be conceived by us as a withdrawal of the Divine support. All that there is now actually of existence in the universe, we conceive as having virtually existed, prior to creation, in the creator; and in imagining the universe to be annihilated by its author, we can only imagine this as the retraction of an outward energy into power. All this shows how impossible it is for the human mind to think aught that it thinks, as non-existent, either in time past or in time future."[1] *Ex nihilo nihil in nihilum nil posse reverti* expresses, according to Hamilton, "in its purest form the whole intellectual phænomenon of causality."[2] "There is thus conceived," he adds, "an absolute tautology between the effect and its causes. We think the causes to contain all that is contained in the effect; the effect to contain nothing which was not contained in the causes."[3] And after illustrating this by the instances of a neutral salt and of gunpowder, he continues:—"This, then, is the mental phænomenon of causality—that we necessarily deny in thought that the object which apparently begins to be, really so begins; and that we necessarily identify its present with its past existence."[4] Again, "An object is presented to our observation which has phænomenally begun to be. But we cannot construe it to thought that the object —that is, *this determinate complement of existence*—had really no being at any past moment; because, in that case, once thinking it as existent, we should again think it as non-existent, which is for us impossible. What then can we—must we—

[1] Lect. ii. 405-6.
[2] Lect. ii. 377.
[3] Ibid.
[4] Lect. ii. 378.

do? That the phænomenon presented to us did, *as a phænomenon*, begin to be—this we know by experience; but that the elements—the constituents of its existence—only began when the phænomenon, which they make up, came into manifested being—this we are wholly unable to think. In these circumstances how do we proceed? There is for us only one possible way. We are compelled to believe that the object (that is the certain *quale* and *quantum* of being whose *phænomenal* rise into existence we have witnessed) did *really* exist prior to this rise under other forms (and by *form*, be it observed, I mean any mode of existence conceivable by us or not). But to say that a thing previously existed under other forms is only to say, in other words, that *a thing had causes*."[1] Hamilton, it may be remarked, insists that a thing must have had causes, or that it must have previously existed in other forms, using in both instances the *plural* number. But it does not appear whether he thought that this was evident *à priori*, and thus formed a part of the Principle or Law of Causation itself. His examples of causation are usually taken from chemical compounds, where, of course, there being more than one ingredient, the thing did previously exist in different forms rather than in a different form. In popular language it would generally be said that if the thing pre-existed in a different form, there must also be a cause for the *change* of

[1] Discussions, p. 621. As annihilation is conceived as "the retractation of an outward energy into power," Hamilton regards the quantity of existence in this power and in the outward energy as the same, and the constancy of the quantity of existence in the universe (including the creator) thus becomes the constancy of the sum of actual and potential existence taken together. "The sum of being (actual and potential) now extant in the mental and material worlds, together with that in their creator, and the sum of being (actual and potential) in the creator alone, before and after these worlds existed, is necessarily thought as precisely the same" (Lect. ii. 539). This is one of Hamilton's latest writings.

form; and as Hamilton regards this cause of the change as one of the forms in which the thing previously existed, it would appear that there must in all cases be at least two such forms. But in this reasoning we are assuming the Principle of Causality, which Hamilton is seeking to define and explain. Probably, if pressed, he would have given the following explanation. When a thing is, in popular language, said to change its form, its *quantum* of existence is always increased or diminished, since if there was no change in the *quantum* of existence there could be no change in the thing. But this change in the quantum of existence always implies that some *other* thing is added to, or taken from, the thing which is said to be changed; and this other thing must be regarded as one of the forms under which the *changed* object previously existed. Thus when dew is said to be changed into vapour, there could be no change, if the quantum of existence in the dew and in the vapour was really the same; but it is not the same, for in changing to vapour the dew has absorbed heat. The quantity of existence in the vapour is not the same as in the dew alone, but the same as in the dew and in the absorbed heat taken together. The dew and the heat, therefore, are equally forms in which the vapour previously existed. If it be conceded that a thing cannot change while the quantity of existence in it remains the same, this reasoning seems to be conclusive. But then the Law of Causation asserts that in the absence of a special interposition by the Creator, the quantity of existence in the universe is constant; whence, if the foregoing reasoning be correct, it would follow that all change must be regarded as impossible, or rather as miraculous. The universe cannot change, because to do so the quantity of existence in it must increase or diminish; and if the universe does not change, nothing in it can do so.

Such is the Hamiltonian theory of Causation. The Principle

of Causality depends, according to him, on our inability to conceive an absolute commencement or an absolute termination; but this is a mere negative inability, and the counter-hypothesis of an infinite non-commencement, or an infinite non-termination, is equally inconceivable. We have no right, therefore, to regard this law or Principle of Causality as possessing absolute certainty or unconditional truth. It is a principle which may be either true or false, and we cannot tell which. And, accordingly, when Hamilton insists that absolute creation—existence preceded by non-existence—and absolute annihilation—existence followed by non-existence—are alike inconceivable, he takes care to add, "All this may be possible, but of it we cannot *think* the possibility."[1] Indeed, we know that in its full extent the Principle of Causality is not true. A free act is an act which did not pre-exist in other forms; for the temporal antecedents being the same, it may be different. But if we are not directly conscious of freedom it may be inferred, according to Hamilton, from our Moral Faculty. We ought, therefore we can, was the argument by which Kant established the freedom of the human will. If the Law of Causation possesses a positive necessity, and must consequently be regarded as absolutely true, free-will must be abandoned; but since it possesses only this negative necessity, and since it is, in fact, equally inconceivable that there should never have been at any time a free act by any agent, the Law of Causation must give way to the arguments for human free-will. And it is thus of real importance to show that this principle does not possess a positive and absolute necessity. For if it did, free-will would be impossible, and no arguments in its favour could be entertained; but when the possibility of freedom is conceded, the question of free-will or necessity is to be decided by the

[1] Lect. ii. 400.

evidence which can be adduced in favour of either alternative.[1]

Some of the objections that have been urged against this theory of causation disappear as soon as its uncertain and negative character is adverted to. Thus, when Hamilton describes the effect and its causes as the same thing in different forms, and speaks of the quantity of existence in the creator and the universe together as identical with that which previously existed in the creator alone, he has been accused of favouring Pantheism. But what Hamilton says is that this is our way of *conceiving* creation, but that we have no way of knowing whether this conception is right or wrong; for our inability to conceive creation otherwise than as "the evolution of a new *form* of existence by the fiat of the Deity," does not in the least prove that this was what really took place when the universe was created. In fact, we know the principle to be untrue in the case of human free-will, and must, therefore, accept its other applications with great reserve and caution. Again, he has been accused of confounding actual with potential existence; but the utmost that can be deduced from his expressions is that we *conceive* them as identical, and not that they are so in fact. And, if we bear in mind what Hamilton means by potential existence, there seems to be little ground for quarrelling with this part of his doctrine. A boy has sometimes been said to be potentially a mathematician, provided that by proper instruction and application he may become one. But this is not the kind of potential existence of which Hamilton is speaking. The forms under which the mathematician previously existed are not, in his

[1] Hamilton makes no reference to the evidence which experience affords in favour of the system of Necessity, or rather of Determinism. He deals only with those philosophers who, regarding the Law of Causation as an absolute truth, independent of experience, had applied it to prove that the freedom of the will is impossible.

opinion, simply the boy, but also the instruction and application—everything, in short, that was necessary for his becoming a mathematician; and what Hamilton says is, that the quantity of existence in the mathematician is *conceived* as identical with the quantity of existence in the boy, and in *all* the conditions requisite for his becoming a mathematician taken together. *All* things requisite to produce a phænomenon are on this theory regarded, when taken collectively, as possessing the same quantity of existence with the phænomenon itself; and the phænomenon thus produced is regarded as potentially existing in the sum of all these requisites.[1] Such at least appears to be his general doctrine, though in speaking of creation he describes the universe as pre-existing in the Divine creative power, and not in that power together with the determination to exert it.[2] Even here, however, something may be said in favour of the theory. When God creates any particular thing, which we may call A, He deprives Himself of the power of creating *that* thing. He

[1] But if some of the requisites remain, the total phænomenon produced must not be regarded as the *new* phænomenon only, but the new phænomenon together with such of the requisites as continue to exist unaltered. The quantity of existence in the sum of the requisites is thus conceived as identical with the quantity of existence in the continuing requisites, and in the new phænomenon taken together.

[2] I suppose because he regarded the determination to create as free. But a free act being inconsistent with the Law of Causation, as defined by Hamilton, he ought to have maintained that the Divine volition to create was *conceived by us* as necessarily determined; and that this volition (or rather the conditions which determined it) must be included among the forms in which the universe is conceived to have existed previous to the creation. It is with reference to the necessity of more than one thing concurring to produce any effect that Hamilton says, "I speak only of second causes. Of the causation of the Deity we can form no possible conception" (Lect. ii. 408); but the observation seems to me hardly consistent with his statements regarding the mode in which we conceive creation and annihilation.

can create another thing exactly like it, which we may call B, but His power of creating B equally existed before He created A, and has not been in any way enlarged by that creation. It would thus seem as if every act of creation must be regarded as lessening the power to create to an extent commensurate with the creative act. But the Hamiltonian theory of causation is perhaps objectionable on a different ground. The Divine power is generally believed to be infinite, and as Hamilton admits that infinite power is inconceivable, we cannot conceive the sum of existence—that is of power, in the Deity—at the instant before the creation, in order to compare it with the sum of existence in the Deity and the universe combined immediately afterwards. And if infinite power, or an infinite quantity of existence was conceivable, it would probably be regarded as unsusceptible of increase or diminution by the addition or subtraction of finite quantities, and might therefore be regarded as identical after an absolutely new finite quantity of existence had been added to it. If so, the constancy of the quantity of existence—that quantity being supposed infinite—would not exclude the absolute commencement or absolute termination of the existence of finite objects. To this Hamilton would probably reply that, though the quantity of existence in the Deity and the universe, taken together, may really be infinite, it is necessarily conceived by us as finite. And since the Infinite is confessedly inconceivable, this must be admitted, provided that the quantity of existence in the universe and the Creator, taken together, is a possible object of human conception. But whether it really is so must be regarded as open to question.

Thus Dean Mansel denies that we conceive Existence as a quantity at all. We cannot conceive Existence except in some particular form (this Hamilton would admit), and when so conceived the form is regarded as an essential part of the

existence itself. Who, indeed, would venture to tell us how many minds contain the same quantity of existence with a given portion of the material world? Did the mind of Newton contain only the same quantity of existence with that of an idiot? and are the quantities of existence in a ton of coal and in a ton of gold equal? Existence in the abstract—existence which is not identified either with matter or with mind—is inconceivable, and cannot, therefore, be conceived as having any quantity; and it is of this abstract existence only that the supposed constancy of quantity can be asserted. I have some doubts as to whether this objection applies to the essentials of the theory, or only to the language in which Sir William Hamilton has expressed it. He was fond of borrowing phrases from mathematics, and often employed them rather inaccurately. That the effect may in some sense be regarded as the equivalent of all the things that concurred in its production would seem to be a natural impression. If any of the antecedents had not been present, it would not have occurred, while the popular belief is that when all are present the effect *could* not but have followed. There is thus a mutual equivalence between the effect and the sum-total of its causes or conditions; and the statement that the complement or quantity of existence in both is identical may be only an inaccurate way of expressing this equivalence. But I confess that I have not been able to put the Hamiltonian theory of causation into language which will evade Dean Mansel's objection, while, at the same time, preserving its essentials intact.

Again, it has been objected that Hamilton's theory only takes notice of what Aristotle designated the material cause, and passes over the efficient cause, which is the very thing to which the term "cause" is exclusively appropriated by the vulgar. This objection is, I think, groundless. Hamilton

includes the efficient cause among the forms under which the phænomenon previously existed. Thus, in the case of vapour, already considered, he distinctly tells us that heat and water are together the causes of the phænomenon.[1] It is no doubt a departure from ordinary language to describe the efficient cause of a phænomenon as one of the forms under which it previously existed; but if there is no doubt that Hamilton has done so, he cannot, with justice, be accused of neglecting efficient causes. At the same time his theory seems to me to have been mainly suggested by the facts of chemistry, from which his examples are usually selected. A chemical composite is identical with the sum of its components, in a sense in which few other effects are identical with the sum of their causes; and Hamilton sometimes speaks as if the components were the only causes in such cases, overlooking the force which was necessary to bring them together, and combine them. In other passages, however, the necessity of this translating force is recognized.

It may further be objected that, on this theory, since an absolute commencement and an infinite non-commencement are equally inconceivable, we ought, in addition to the Principle of Causality, to find in the human mind a counter-principle asserting the impossibility of an infinite non-commencement; but no such counter-principle is in fact to be met with. Of this fact Sir William Hamilton gives the following explanation :—"As not obtrusive, the Infinite figures far less in the theatre of mind, and exerts a far inferior influence in the modification of thought than the Absolute. It is, in fact, both

[1] Lect. ii. 408. He, curiously enough, adds that there is a third concause—the atmosphere—the fact being that the presence of the atmosphere retards the formation of vapour. He was probably thinking of the cloud to which he immediately afterwards refers, rather than of the invisible vapour diffused through the air around us. The air is certainly not a cause of this vapour.

distant and delitescent, and, instead of meeting us at every turn, it requires some exertion on our part to seek it out."[1] Conceding this, however, the origin of the principle assigned by Sir William Hamilton affords no evidence of its truth, and therefore offers no explanation of the fact that it is so constantly verified in our experience. According to Kant the Principle of Causality is a condition of experience itself. Without it there would be no distinction between experience and dreaming; and since experience could not exist without the principle, all experience must testify to its truth. With Hamilton, on the contrary, so long as we may remain in the region of pure speculation, the Law of Causation is simply one of two inconceivable alternatives, and is not entitled to any preference over the rival hypothesis. Suggested to us by an imbecility or impotence of thought, its sole evidence is, notwithstanding, to be found in experience; and the origin of the principle, so far from enabling us to anticipate that experience would be found in harmony with it, might even lead us to expect the reverse. And as the Principle thus depends for its evidence on experience, so Hamilton seems more than once disposed to derive the Idea of Cause from the same source. Thus, at the exposition of the two-fold origin of the idea of space in his Lectures, his editors found the marginal jotting, "So Causality:"[2] nor do I think the oral interpolation which they here add as the explanation (but which, it seems, Hamilton made use of on a different occasion, and no doubt in a different connexion) is the true one. "Our internal experience," says he, in another place, "especially in the relation of our volitions to their effects may be useful in giving us a clearer notion of causality; but it is altogether incompetent to account for what in it there is of the quality of necessity."[3] But neither, I presume, could our

[1] Discussions, p. 621. [2] Lect. ii. 114, note.
[3] Lect. ii. 392.

external experience account for the quality of necessity which belongs to our idea of space or extension, of which, nevertheless, Hamilton maintains that we have a direct empirical apprehension; nor is it easy to see how internal experience could be of use in giving us a clearer notion of causality unless by directly apprehending it. The strongest passage on the subject, however, occurs in one of Hamilton's notes to Reid, where he says, "the consciousness of our own efficiency" [in volition] "illuminates the dark notion of *causality* founded, as I conceive, in our impotence to conceive the possibility of an absolute commencement, and raises it from the vague and negative, into the precise and positive, notion of *power*."[1] Either, however, he was not constant in his employment of the term "power," or he afterwards altered his opinion; for we find him almost identifying causality with power in his latest writing on the subject.[2] Returning to his Notes to Reid, he again alleges that, "for the fact of liberty we have immediately or mediately the evidence of consciousness;"[3] but the words "or mediately" evidently refer to the evidence afforded by the Moral Faculty, and we are thus left in doubt as to whether Hamilton held that we are directly conscious of free volitions. Nor is this doubt cleared up by his unfinished Dissertation on Prescience and Liberty, where he says in a note, "The fact of liberty may be proved—1. From the direct consciousness of liberty; see Creuzer," &c.,[4] for he may have merely intended to enumerate the modes in which Libertarians—in particular Creuzer—attempted to prove the fact. In deriving the Idea of Cause from internal experience Hamilton would be involved in the following difficulty. The Principle of Causality, as he explains it, confessedly denies the possibility of an act of free-will. Hence, if we have a direct consciousness of free-will,

[1] Reid, 604, note.
[2] Lect. ii. 538-9.
[3] Reid, 602, note, see also Lect. i. 33.
[4] Reid, 975, note.

the idea of cause thus derived from internal experience not only does not agree with the *à priori* notion of cause, but is actually in conflict with it. If, on the other hand, we derive, from our consciousness of volition, an idea of cause agreeing with the *à priori* notion, we must be conscious that the will is not free; in which case the argument for freedom derived from the Moral Faculty becomes unavailing. This was probably the reason why Hamilton never affirmed the two-fold origin of the idea of cause as decidedly as the two-fold origin of the idea of space. But in opposing the theory which asserts that the idea of cause is derived from our consciousness of volition, he limits his argument to showing that we have no apprehension of any causal relation between the volition and the subsequent bodily movement. This, he says, is impossible, since there are intermediate agencies of which we are not conscious; but he leaves untouched the question whether we have not a perception of causal efficiency in the mental volition itself, merely remarking that this derivation would not account for the necessity which belongs to this notion of cause.[1]

That a principle, whose truth is open to so much question as this Law of Causation, cannot legitimately lead us to infer a First Cause seems sufficiently obvious; for even if it was impossible for us to conceive that there was no first or absolute cause, this negative inability to conceive the absence of a thing affords no proof of its presence. And when Hamilton tells us that "the affirmation of a God" is "a regressive inference from the existence of a particular class of effects to

[1] It will be recollected that in describing resistance to what he calls the "enorganic volition" to move, Hamilton stated that in it I was conscious of myself as a "force in energy," and of extra-organic matter as a "counter-force in energy." A force in energy is certainly a near approach to the vulgar idea of an efficient cause. See Reid, 866 note.

the existence of a special character of cause," [1] his argument does not turn on *à priori*, but on *à posteriori* considerations. It is only by experience, as Hamilton frequently tells us, that we can know the particular causes of particular effects. "The Deity is not an object of immediate contemplation. We can only know Him mediately through His works, and are only warranted in assuming His existence as a certain kind of cause necessary to account for a certain state of things, of whose reality our faculties are supposed to inform us" [2]—these faculties being undoubtedly our faculties of external and internal experience. But, on one occasion, Hamilton seems inclined to employ his Principle of Causality in arriving at the existence of a Deity. In his third Lecture on Metaphysics he describes the process of ascending from causes to their effects, as one which necessarily tends towards simplicity; for since the causes are always at least two in number, and the effect is identical with the sum of the causes, the effect may be regarded as resolved at each step into at least two elements, each of which must, of course, be simpler than their resultant. His examples are, as usual, taken from chemistry, where at each step in the analysis or decomposition we approach nearer to simple substances. Hamilton seems to have confounded this approach to simplicity with an approach to unity, which in chemistry it certainly is not; for every material atom or particle must be regarded as a separately existing object, and chemical analysis tends to increase rather than to diminish the number of these atoms, since it often shows us that what we took for a single atom is really a composite made up of several atoms differing in kind. This analysis of effects into their causes, however, whether in

[1] Lect. i. 26. This whole Lecture shows the mistake which Mr. Mill has made in thinking that Hamilton could have held that the existence of God was known to us by direct consciousness. *Examination of Hamilton*, p. 169, seq.

[2] Lect. i. 25.

chemistry or in philosophy in general, can only be carried to a limited extent; but then, says Hamilton, we neither conceive, nor are we able to conceive, that the analysis is at an end, and that what we have finally reached is not itself an effect. "We therefore carry on the analysis in imagination; and as each step in the process carries us from the more complex to the more simple, and consequently nearer to unity, we at last arrive at that unity itself—at that ultimate cause which, as ultimate, cannot be again conceived as an effect. Philosophy thus, as the knowledge of effects in their causes, necessarily tends not towards a plurality of ultimate or first causes but towards one alone. This first cause—the creator—it can indeed never reach as an object of immediate knowledge; but as the convergence towards unity in the ascending series is manifest in so far as that series is within our view, and as it is even impossible for the mind to suppose the convergence not continuous and complete, it follows—unless all analogy be rejected—unless our intelligence be declared a lie—that we must philosophically believe in that ultimate or primary unity which, in our present existence, we are not destined in itself to apprehend."[1] This passage I find difficult to reconcile with the more formal expositions of Hamilton's doctrine of causation. The mere negative inability to conceive the series otherwise than as continuous and complete affords no evidence of its real character; and a positive deliverance of consciousness to the effect that the series is in fact continuous and complete would seem to involve a Principle of Causality of a more positive character than that recognized by Hamilton. The argument from analogy can hardly be regarded as conclusive; and, indeed, is so evidently dependent on experience that it is rather startling to find it placed in apposition with the words, "unless our intelligence be declared a lie." And the

[1] Lect. i. 60.

whole passage presents a further difficulty. The causes or elements into which any effect can be resolved by philosophical analysis can never, as Hamilton has just told us, be less than two; but how could the process of resolving everything we meet with into two elements or causes lead us back to a single cause or element? To trace everything back to the same *two* causes, seems to be the *ne plus ultra* of this mode of analysis. When that was done, nothing further could be effected in the way of reducing the ultimate number of causes. By resolving one of the pair into two elements we might increase the number of our causes to three, but we could not reduce it to less than two.[1]

[1] But with the latitude which Sir William Hamilton allows himself in the use of the term cause, and of the phrase "forms of existence," he might perhaps say that the ultimate pair of causes were the Divine power and the Divine determination to exert it. Still, I do not see how the Principle of Causality, as he explains it, can be used to *prove* the existence of a Deity.

CHAPTER V.

THE INFINITE AND ABSOLUTE—THE LAW OF SUBSTANCE.

I NOW proceed to Hamilton's application of his Law of the Conditioned to the possibility of knowing the Absolute or the Infinite, and of forming a system of Rational Theology, that is, a theology based on principles of reason, and independent alike of experience and of revelation. The Absolute and the Infinite are, in fact, the two opposite poles (both inconceivable) between which all positive thought lies. Thus, in the case of the Principle of Causality, the two inconceivables were an absolute commencement and an infinite non-commencement in time, while with the law of Ultimate Incompressibility they were an absolute termination, and an infinite continuance of existence in space.[1] These, accordingly, were special applications of the notions of the Absolute and the Infinite, which we now come to deal with more generally. The Absolute and the Infinite are included by Hamilton under the common designation of the Unconditioned—a term which he does not define, and which has occasioned some embarrassment to his critic, Mr. Mill. Hamilton, in fact, seems to have used the term "condition," with its various

[1] This principle is not very fully described by Hamilton, and possibly what he intended to assert was that we cannot conceive a material body, either as expanded into an infinitely large, or compressed into an infinitely small, space. In the one case it would be infinitely rare; in the other infinitely dense. But apart from our experience of expansion and contraction, would we have conceived a body as changing its bulk at all?

cognates, in a sort of twofold reference, both of which, however, are justified by common language. Thus we say that one thing is a condition of another, or that one thing is conditioned by another, meaning that the two are related, or perhaps specially related by way of causation; for though a condition is not equivalent to a cause, the cause must be regarded as the sum-total of the conditions.[1] Again, we say that a thing is in a certain condition, meaning that it is in some particular state or mode—as, for instance, we say that matter can exist in three conditions, the solid, the fluid, and the gaseous. This latter meaning of the word condition—which Mr. Mill does not notice—was, I think, that which was most prominently present to the mind of Sir William Hamilton. "Existence is not cognizable absolutely, and in itself, but only in special modes,"[2] would thus seem to be equivalent to the statement that we know not absolute, but only conditioned, existence; though probably Hamilton would have adduced the other two respects in which our knowledge of existence is immediately afterwards declared to be relative, as affording a further proof, or explanation, of the same statement. If I know a thing only in a certain condition, mode, or state, and that thing is capable of existing in other conditions, modes, or states, my knowledge of it is not absolute—meaning by absolute "finished, perfected, completed." It can hardly be said to be absolute, even if by that term we mean non-relative; but as Hamilton expressly says that these special modes of existence can only be cognized in so far as

[1] To define a cause as "the sum-total of the conditions from which a phænomenon *unconditionally* follows" is tautologous. If the phænomenon in question followed from the antecedents conditionally, it would only follow when a certain condition (or number of conditions), in addition to these antecedents, was supplied; in which case the antecedents mentioned could not be the *sum-total* of its conditions.

[2] Lect. i. 118.

they are related to our faculties, I need not further discuss this point. The statement that we know nothing but the Conditioned, would thus seem to be equivalent to stating that we know existence only in certain special modes related to our faculties.[1] The Unconditioned will of course be the opposite of this Conditioned. The Conditioned, Hamilton otherwise designates as the conditionally limited, the contradictory of which—the not-conditionally-limited will evidently include two cases, viz. the unconditionally limited (or Absolute), and the unconditionally unlimited (or Infinite). I may here remark that when Hamilton contends that thought is only of the conditioned because "to think is to condition,"[2] this phrase need not have occasioned any perplexity to Mr. Mill. Hamilton himself explains it immediately afterwards, and in his explanation brings in the two elements already referred to. "Thought," says he, "cannot transcend consciousness; consciousness is only possible under the antithesis of a subject and object of thought, known only in correlation, and mutually limiting each other; while, independently of this, all that we know either of subject or

[1] In the passage of the Lectures already referred to (Lect. i. 148) Hamilton proceeds:—"The modes thus relative to our faculties are presented" (Mr. Mill prints this word "assented") "to, and known by, the mind only under modifications determined by these faculties themselves." He can hardly, however, consistently with his Natural Realism, and his defence of the veracity of consciousness, intend to convey that these latter modifications are naturally regarded by us as modifications of the object presented—though of course unreflecting or uncritical minds might easily fall into that error. He does not mean that what is presented to us *as object—as non-ego*—is really a composite made up of some objective and some subjective elements; but that, along with the presentation of the object, there is always a simultaneous presentation of the subject, the two being mutually related to and limited by each other. Both object and subject are thus known as relative, limited, conditioned, existences.

[2] Discussions, p. 14.

object—either of mind or matter—is only a knowledge in each of the particular, of the plural, of the different, of the modified, of the phænomenal."[1]

The Absolute has sometimes been understood in the sense of the non-relative, but that is not the sense in which Hamilton employs it in this controversy. The non-relative is, in fact, nearly equivalent to the Unconditioned,[2] and Hamilton's Absolute and Infinite are both equally non-relative, the one being the *unconditionally* limited, and the other the *unconditionally* unlimited. Instead of "limited," he sometimes uses the terms "finished, perfected, completed," but the meaning is nearly the same. Now it seems to be conceded by nearly all philosophers that there must be an ultimate being[4] of some kind, and that this ultimate being cannot, in His own nature, be of the relative and conditioned character which Hamilton ascribes to all the objects of human knowledge, and of (positive) human thought. Hamilton, accordingly, reasons as follows:—We can know and (positively) think nothing but the conditionally limited; but the ultimate being cannot be the conditionally limited; therefore, He cannot be an object of knowledge or of positive thought. And after thus laying down his own theory, he proceeds to deal polemically with the systems which represented the ultimate being as an object of knowledge, of (positive) thought, or of both. We can now see how far Mr. Mill is correct in saying that, in the discussion in question, God is veiled under the abstract names, the Absolute and the Infinite, and, also, how

[1] Discussions, p. 14.

[2] The non-relative of course means that which is not related *to anything*. A thing is not absolute in this sense, merely because it is not related *to us*.

[3] Accordingly, Hamilton's Absolute is "that which is *out of relation*, &c., as finished, perfect, complete, total." Discussions, p. 14, note.

[4] Or ultimate beings. The question of one or more is not material to the argument at this stage.

far Dean Mansel is correct in stating that the Absolute and the Infinite were regarded by Hamilton not as predicates of God, but as predicates of a nonentity.[1] If there be a God, as an ultimate being, He must be *unconditioned;* and therefore the question of the cognoscibility of God depends on that of the cognoscibility of the Unconditioned. But unless we are to give the name God to any ultimate being, no matter what its attributes may be, the Unconditioned is not necessarily God, nor does the cognoscibility of the Unconditioned involve that of the Deity. Persons who are generally (and I think correctly) described as Atheists, have believed in the Unconditioned, and have even founded their so-called Atheism on their peculiar views as to its character. But while God, if He exists, must be identified with the Unconditioned, He cannot, according to Sir William Hamilton, be identified with *both* the Absolute and the Infinite, since these are contradictory opposites. He must be identified with one, and with one only. But then we cannot determine which. The two contradictory opposites stand on the same footing. We have no means of deciding which of them corresponds to the real nature of the Deity, and, consequently, Rational Theology is impossible. Such, I believe, to be the substance of Hamilton's argument; and, if I understand it correctly, Dean Mansel is as much in error in stating that Hamilton did not regard either the Infinite or the Absolute as predicates of the Deity, as Mr. Mill is in assuming that he regarded both of them as such predicates. The very point of his theory—like all other applications of the Law of the Conditioned—is that the Deity must be one of the two, and one only, but that we cannot tell which. Mr. Mill is, perhaps, justified in suggesting that the Deity may be infinite in respect of some attributes, and absolute in respect of others; but, at all events, He cannot be both

[1] *Examination of Hamilton*, p. 45 (4th ed.).

absolute and infinite in respect of the same attributes; while He must be either the one or the other.[1] Either He is limited, without being limited by anything else, or He is in His very nature unlimited. The only choice is between self-limitation and the absence of all limitation.

The phrases, The Infinite and The Absolute, seem rather to refer to the existence of the ultimate being than to any particular attributes. But as the Infinite must apparently be in all respects infinite, and the Absolute in all respects absolute, an inquiry into the attributes in which the one (if it exists) is infinite, and in which the other (if it exists) is absolute, may not be out of place. Of course the Absolute cannot be represented as absolute in all attributes positive and negative alike. This would make it, as Mr. Mill says, a fasciculus of contradictions, to which no being could correspond as long as the Law of Contradiction is held to be valid. For the same reason, the Infinite cannot be represented as infinite in all attributes, positive and negative alike; nor does Hamilton ever describe either of these notions in this manner, whatever ground Dean Mansel may have given Mr. Mill for making that charge against him. In fact, negative attributes are only called attributes by a kind of courtesy. When taken in their strict meaning, they imply the absence of some positive attribute: when taken in a looser signification, they imply that it is deficient in quantity. We cannot speak of an attribute as being *infinitely* absent; and though we sometimes speak of its *absolute* absence, we are not then using the word absolute in the sense in which Hamilton employs it in this controversy. We merely mean to convey by the use of the word absolute, that we are using the term absence, with which

[1] That is if the attribute be a positive one. Negative attributes are, in fact, mere names for the absence or deficiency of positive attributes, and hence cannot be regarded as either absolute or infinite.

it is joined, in its proper signification, and not in the looser meaning in which it is often employed to imply a great deficiency in quantity. There is no difference between saying that a man escaped "absolutely unhurt," and that he escaped "unhurt," except that the latter form of expression might be deemed consistent with the subsequent statement that he had sustained some very slight degree of pain or injury—a statement which would be inadmissible if the word unhurt was taken in its strict signification. Accordingly, no philosopher, so far as I am aware, ever represented his ultimate being as alike possessed of all attributes, whether positive or negative. The current idea was that of the *ens realissimum*, the most perfect being, or the sum of all reality—positive attributes being, at this stage of abstraction, identified with reality and perfection, and negative attributes with unreality and imperfection. It was also described as the sum of all possibility; for when we abstracted from experience, the only test of the possibility of a thing was assumed to be the positive character of our conception of it. This notion of the *ens realissimum* is fully described in the section of Kant's Transcendental Dialectic, entitled, "Of the Transcendental Ideal (Prototypon Transcendentale)."[1] Nor does even Hegel, in the passage cited by Mr. Mill,[2] give a different description of the Absolute. "What kind of Absolute Being," he asks, "is that which does not contain in itself all that is *actual*, even evil included?" The argument here seems to be as follows:—The Absolute Being must contain in Himself all that is *actual* (or positive); but evil is actual

[1] See Meiklejohn's *Translation of the Critic of Pure Reason*, p. 352.

[2] *Examination of Hamilton*. p. 60. The explanation here offered of this passage is equally applicable to the expressions cited by Mr. Mill from Mansel, at p. 118, of his Examination. There is, however, no objection to the Absolute including two contradictory opposites in its *extension*. What renders a notion inconceivable is the attempt to include two contradictory opposites in its *comprehension*.

(or positive): therefore, it must be included in our conception of the Absolute Being. Leibnitz would have replied to this, that evil is not anything actual or positive, being only a mere negation or absence of the good; but this seems to be the only ground on which Hegel's conclusion could be resisted by a philosopher who identified the Deity, or ultimate being, with the *ens realissimum*. Hamilton was only dealing with the notions of the Absolute and the Infinite which had been advocated by preceding philosophers, and was not in any way bound to combat the phantoms conjured up by Mr. Mill, even if the latter has grammatical usage in his favour.[1] But if the Absolute and the Infinite need not be absolute and infinite in all attributes whether positive or negative, neither does the notion of a thing absolute or infinite in respect of any one attribute, or in respect of certain attributes only, come up to our ideas of The Absolute or The Infinite. The Absolute and the Infinite are subdivisions of the Unconditioned, and it is not true that everything that is absolute or infinite in some one attribute is unconditioned. Absolutely pure water,[2] to take an example of Mr. Mill's, is not an unconditioned or ultimate being in any sense. It may not be an object of human cognition, because we may never have expe-

[1] One of the great defects of Mr. Mill's criticism is, that he so frequently endeavours to determine on grammatical or philological grounds what Hamilton and his opponents ought to have meant by the language they employed, instead of seeking to discover in their writings what they really intended to convey.

[2] *Examination of Hamilton*, p. 48. But does "absolutely pure water" mean anything more than "pure water" in the strict sense, and not merely in the comparative meaning of water purer than usual? And is purity itself (at least when employed in relation to water) anything more than the absence of all elements other than oxygen and hydrogen in the proper proportions? If so, the attribute is negative, and absolutely pure water is not a thing which is absolute in respect of any (positive) attribute.

rienced water which did not contain some impurity, however slight; nor, perhaps, is it an object of possible cognition, since impurity might exist in such minute quantities as to baffle not only our senses but our finest instruments. But, be this as it may, the possibility of the existence, or of the cognition, of absolutely pure water has nothing to do with the question at issue between M. Cousin and Sir William Hamilton. And whether Cousin would have described his ultimate principle (or Deity) as infinite or absolute in *all* (positive) attributes or not, he would probably have had no hesitation in describing Him as infinite or absolute in all *His* attributes. None of the attributes which the ultimate being possessed could be regarded as conditionally limited, and a being which was absolute or infinite in some attributes only, and possessed other attributes in respect of which he was neither absolute nor infinite, could not be regarded as an ultimate being—as the Unconditioned, the Infinite, or the Absolute.[1]

[1] M. Cousin, who may be presumed to have understood his own theory better than Mr. Mill, never professed to have discovered the paralogisms in Hamilton's Discussion that Mr. Mill detects. On the contrary, he complimented his antagonist on the fairness with which his system had been expounded and combated. Nor did Hamilton ever maintain that an Absolute Cause was a contradiction in terms. What he contended was, that an Absolute Cause—a thing which existed only as a cause—could not be identified with *the* Absolute. It would, in fact, be in its nature "inchoative and imperfect," and thus contradictory to the Absolute in the sense of the "finished, perfected, completed" (Discussions, p. 35). And when Mr. Mill asks (*Examination of Hamilton*, p. 57), "Why is M. Cousin under an obligation to think that if the Absolute, or, to speak plainly, if God, is only known to us in the character of a cause, He must exist merely as a cause?"—he forgets that this is the very question with which Hamilton was pressing his adversary. Cousin apparently had inferred from the fact that God is only known to us in his character of a cause, that, therefore, He existed only in that character—that Absolute Cause was a definition of the Absolute which explained its nature, and might be used as such an explanation in a system of Rational Theology—

As, granting the existence of an ultimate being, we cannot determine whether He is infinite or absolute, we must, according to Sir William Hamilton, renounce all efforts to obtain a definite knowledge of Him on *à priori* or speculative grounds. He is, in fact, neither an object of knowledge nor of positive thought. But three other opinions on the subject are possible, and, according to Hamilton, have been actually held. Kant was of opinion that the Unconditioned was a positive and necessary thought or idea, but that we had no means of ascertaining whether any Being corresponded to it, and therefore it remained in our minds as a regulative notion, which failed to convey to us any knowledge of an object. The Unconditioned was therefore, in Kant's opinion, conceivable, but not cognizable. On the other hand, Schelling maintained that the Unconditioned was not conceivable—that it was not an object of *thought*—but that we could nevertheless know it immediately by a kind of *perception* which he designates Intellectual Intuition; while Cousin maintained that it was both cognizable and conceivable, and was, in fact, a necessary object both of knowledge and of thought to every member of the human race. Owing to the fact that the Absolute and the Infinite are both inconceivable, most of these philosophers had overlooked, according to Hamilton, that one of these notions was the contradictory of the other, and they in consequence employed the terms Unconditioned, Absolute, and Infinite, as if they were all identical in meaning. In expounding Hamilton's philosophy, it is unnecessary to give

and he had even argued that since God existed only as Absolute Cause, creation was necessary. As to Hamilton's argument on the necessity of creation (*Examination of Hamilton*, p. 57, note), it seems impossible to conceive that in a void time (or rather a time occupied by the Deity alone), a period could arrive at which it *first* became better to create than not to create; but even this would not save M. Cousin's doctrine, which affirms a necessity of creation irrespective of any time-conditions.

his special refutations of Kant, Schelling, and Cousin. His own theory may be correct, even if some of his arguments against his opponents are objectionable; and, on the other hand, these special arguments may in many cases be admitted without accepting the Hamiltonian theory. His main argument, however, against all the advocates of Rational Theology, or rather of Ontology, is thus expressed:—"Those," says he, "who, with M. Cousin, regard the notion of the Unconditioned as a positive and real knowledge of existence in its all-comprehensive unity, and who consequently employ the terms Absolute, Infinite, Unconditioned, as only various expressions for the same identity, are imperatively bound to prove that their One corresponds either with that Unconditioned which *we* have distinguished as the Absolute, or with that Unconditioned which *we* have distinguished as the Infinite, or that it includes both, or that it excludes both. This they have not done, and we suspect have never attempted to do."[1] It will be seen that this argument does not at all turn on the assumption that these philosophers were using the terms Infinite and Absolute in the same sense in which Sir William Hamilton employed them. He rather states the reverse. But having shown that the Unconditioned admits of two subdivisions, which *he*, for the sake of distinction, calls the Infinite and the Absolute, he challenges them to state under which subdivision their Unconditioned (to which *they* applied the terms Infinite and Absolute) is to be placed. If they cannot do this, Rational or Speculative Theology is, as he believes, extinguished. Our knowledge of God and of the Divine attributes must be derived from experience (external and internal) or from revelation. Hamilton accords no preference to one of these sources over the other. He merely says that the Divine nature cannot be known *à priori*.

[1] Discussions, p. 29.

Instead of arguing that the Deity *must* possess this or that attribute, we must be content to say that we have this or that evidence for believing that He in fact possesses it; and if the evidence is doubtful or conflicting, we must modify our assent accordingly.

All this is perfectly consistent with a belief in the existence of God. The notion of the Unconditioned is not self-contradictory, and the want of self-sufficiency in the Conditioned almost drives us to believe that the Unconditioned exists. Neither are the notions of the Absolute, or of the Infinite (as defined by Hamilton) self-contradictory. God may—nay, *must*—be either the one or the other; but speculative reason gives us no aid in determining which. I may believe in the existence of a planet in addition to those now recognized by Astronomy, without being able to state its magnitude, its distance from the sun, or the shape and inclination of its orbit. In like manner I may believe in the existence of God without knowing any of His attributes,[1] or being in a position to construct any science of Theology. And though I identify this Deity with the Unconditioned, a science of Theology is impossible so long as I cannot identify Him with either of those subdivisions which Hamilton designates the Infinite and the Absolute. I might even *know* the existence of a thing (that is, it might be a necessary deduction from other parts of my knowledge) without being able to construct a science of the thing itself; just as the existence of Neptune was known before that planet was actually discovered. In this last observation, however, I go a step beyond what Sir William Hamilton has expressed; but the knowledge of the

[1] Except of course the attributes implied in the connotation of the word God, which are not very clearly defined; just as in the other case my belief must extend to all the attributes implied in the connotation, or meaning, of the word planet, but no farther.

existence of a thing does not seem necessarily to imply the knowledge of any of its attributes, except those which are implied by its name. Even this exception moreover may be avoided by giving it a name of merely negative import; which is the case with the names Unconditioned, Infinite, and Absolute.

All this is so consonant to the spirit of the Experience-philosophy, that we might have expected to find our author safe from attacks on that side; and if Empiricists have sometimes taken up the cudgels on behalf of the Rationalists, the explanation seems to be that many of them regard the Deity as an ideal, rather than as a real, being, and are in the habit of placing religious systems higher or lower in the scale, according to what they consider the perfection of their respective ideals, rather than according to the evidence for their truth. They thus return to the old ontological notion of the most perfect being (though possibly they would not identify it with the *ens realissimum*), not with the view of proving its existence, whether by an analysis of the notion itself or by independent evidence, but only for the purpose of using it in Morals as a subjective standard of perfection. Mr. Mill would hardly have penned a well-known passage in his Examination [1] (which, however, was written in reference to Mansel, not Hamilton), if he had believed in a really existing God, and a really existing hell; and his objection to Mansel's doctrine is not that it is disproved either by Natural Theology, or by revelation, but that it is "morally pernicious." [2] Those who believe that God has bestowed on man a Moral Faculty capable of discerning between right and wrong, may, perhaps, with reason, reject any proposed doctrine on the ground of its moral perniciousness. But whether a theory is morally pernicious or not, is frequently a matter of opinion. Mr. Mill would have strenuously denied

[1] Examination, pp. 128-9. [2] Examination, p. 113.

that the doctrine of Necessarianism or Determinism was "morally pernicious;" but there are not wanting philosophers of eminence who regard that theory as subversive of all true morality. And the days have, I believe, gone by when a mere moral system could be successfully propounded as a religion. In uncultivated ages a great moralist, or a great legislator, was often regarded by his contemporaries or successors as a supernatural being, and his writings were treasured as sacred books. But ancient Greece had attained such a state of civilization as to prevent the works of Epicurus, Zeno, or Aristotle, from being thus regarded, and modern Europe is, in this respect, not inferior to ancient Greece. The propounder of a new religion will, henceforth, have to inform us on what evidence it rests, and if he can afford no other evidence of its truth than that its acceptance would be for the benefit of mankind or would cultivate their moral sentiments, I venture to predict that his religion will *not* meet with general acceptance. Creeds are not among the useful articles that can be made to order.

There is one passage, however, in the course of this Discussion, in which Hamilton seems to adopt the mode of reasoning afterwards adopted by Mansel, and to contend that the Absolute and the Infinite are inconceivable, because self-contradictory. "The negation of the commencement of time," says he, "involves the affirmation that an infinite time has, at every moment, already run; that is, it implies the contradiction that an infinite has been completed. For the same reason we are unable to conceive an infinite progress of time; while the infinite regress and infinite progress, taken together, involve the triple contradiction of an infinite concluded, of an infinite commencing, and of two infinites not exclusive of each other."[1] And among his un-

[1] Discussions, p. 30. See, too, as to the Unconditioned Discussions, p. 17.

finished posthumous papers we find a list of no less than fifteen "Contradictions proving the Psychological Theory of the Conditioned."[1] But in the former passage the context, I think, sufficiently shows what Hamilton intended to convey. "Time," says he, when introducing the subject, "is only the image or the concept of a certain correlation of existences —of existence therefore, *pro tanto*, as conditioned. *It is thus itself only a form of the Conditioned.*"[2] (The italics are Hamilton's own.) Now, it is natural to suppose that if we take a form of the Conditioned, and attempt to unite it in thought with the idea of the Unconditioned—the Infinite—the result will be the formation of a self-contradictory notion; but the self-contradiction is not to be found in the notion of the Infinite when taken by itself, but only arises when we endeavour to join it to the conditioned notion of time. The self-contradiction is not found in the notion of infinity, but in the complex notion of infinite-time. A similar explanation is, I believe, applicable to most of the "Contradictions proving the Psychological Theory of the Conditioned." They are all, or nearly all, contradictions which arise when we endeavour to join the notion of infinity to some other notion, which, according to Hamilton, is in its very nature conditioned. In the Discussions, it may be remarked, Hamilton finds this contradiction only in the notion of an infinite, and not in that of an absolute, time; but in the unfinished paper already referred to, the Absolute occurs as well as the Infinite. To represent the notions of the Absolute and the Infinite, as in their own nature self-contradictory, would, as already remarked, be to subvert the Hamiltonian theory *in toto*. The Law of the Conditioned would, in that case, be inapplicable, and the notions in question would fall under the Law of Contradiction, whose necessity, according to Hamilton, is of a positive

[1] Lect. ii. 527–8. [2] Discussions, p. 29.

character, and whose truth is, for that reason, indisputable. We are always entitled to affirm of a self-contradictory notion that no real being corresponds to it.

In expounding Hamilton's views on the Infinite and Absolute, we must bear in mind the distinctions drawn with respect to the former in his letter to Dr. Calderwood. "There is," says he, "a fundamental difference between *The Infinite* (τὸ ἓν καὶ πᾶν), and a *relation* to which we may apply the term *infinite*. Thus time and space must be excluded from the supposed notion of *The Infinite*, for The Infinite, if positively thought it could be, must be thought as under neither space nor time."[1] The attempt to unite in thought this notion of *The Infinite* with that of either space or time might thus be naturally expected to result in a contradiction, though space and time may with truth (or at least without self-contradiction) be called infinite in the relative sense already alluded to—namely, greater than any finite.[2] Again, when Dr. Calderwood contended that the relative was not incompatible with the Infinite, provided the relation was not restrictive, Hamilton replied, "But restrictive I hold the relative always to be, and therefore incompatible with *The Infinite* in the more proper signification of the term though infinity, in a looser

[1] Lect. ii. 531.

[2] Mr. Mill thinks the notion of Infinite too obvious to need explanation and yet he gives two inconsistent definitions of it. At p. 48 of his *Examination* he defines it as "that to the magnitude of which there is no limit." This definition excludes both eternity *a parte ante*, and eternity *a parte post*, since each of these is limited by the present moment. It likewise excludes the infinitely small. Again at p. 62 of his *Examination*, he defines Infinite (meaning infinitely large; he has a corresponding definition of infinitely small at p. 108) as "that which is greater than any given quantity," or "greater than any finite." This definition would include the infinite regress and infinite progress of time which the former definition excludes. Mr. Mill does not seem to have noticed the distinction drawn by Hamilton in his letter to Calderwood.

sense, may be applied to it;"[1] and on the next page he applies the observation specially to space and time, both of which he regards as restrictive. *The Infinite* is that which is infinite in all relations and respects. It cannot, therefore, have a beginning or an end, and the notions of eternity *a parte ante*, and eternity *a parte post*, are alike inconsistent with it. But these may, notwithstanding, be called infinite in the relative or looser sense of the term, for they are both greater than any finite time. It is only when Infinity is used in the strict sense, for that which is, in all relations and respects, unlimited, that any conflict arises between the notion of The Infinite and that of Time; and that a contradiction should arise in this case appears to be consistent, both with the Law of the Conditioned, and with the general system of Sir William Hamilton. Many of the "Contradictions proving the Psychological Theory of the Conditioned" may, I believe, be cleared up by this distinction.

While I am confident that the foregoing remarks express the views which Sir William Hamilton systematically upheld, there are one or two passages in his writings in which he deals with self-contradictory notions in a less satisfactory manner. Thus, on one occasion, he says, "It is on the inability of the mind to conceive either the ultimate indivisibility, or the endless divisibility, of space and time, that the arguments of the Eleatic Zeno against the possibility of motion are founded—arguments which at least show that motion, however certain as a fact, cannot be conceived possible, *as it involves a contradiction.*"[2] With Mr. Mill I am unable to reconcile this passage with Hamilton's repeated assertion of the positive necessity, and absolute truth, of the Law of Contradiction. I do not think he would have had

[1] Lect. ii. 532.

[2] Lect. ii. 373. See, too Lect. iv. 71.

recourse to Mansel's device (on a different occasion) of saying that the contradictions were not in the object which we are called on to conceive, but in our mode of conceiving it. When this assertion is made with regard to our ideas of the Absolute and Infinite, it seems to expose its advocate to a two-fold rejoinder. First, how do you know that there is any object which you are called upon to conceive? Secondly, even if you are certain that there is a thing of which you are trying to form a conception, why apply to it the name of a self-contradictory conception to which you are well aware that neither it nor any other real thing can correspond? This reasoning, however, is inapplicable to motion, because motion is admittedly a fact to which our perceptive faculties bear witness. There is, therefore, something to be conceived; but why, on any principle of the Hamiltonian philosophy, may we not form a conception of that fact without falling into self-contradiction? If we conceive motion as a conditioned—if we avoid thinking of it either as absolute or as infinite—why should we not be able to form as clear and positive a notion of it as of any other fact in our experience? Hamilton, it will be seen, prefaces the observation on which I am commenting by stating that the arguments of Zeno turned on our inability to conceive either the absolute or the infinite of the divisibility of space. Possibly, therefore, he meant to affirm nothing more than that, although it was certain that motion must be either absolute or infinite in this respect, the absoluto-infinite of motion was inconceivable, because it included two contradictory alternatives. This would indeed be putting a great deal of force on his language, but without placing an unnatural interpretation on the passage I do not see how to reconcile it with his system.[1]

[1] Zno's arguments, whatever their value may be, apply only to continuous motion, and experience can never tell us that the motion which

The Principle of Substance and Phænomenon (it will be recollected that with Hamilton these terms are correlatives), or Substance and Accident, is according to our author another application of the Law of the Conditioned; but his explanation of this Principle is given only in one of the unfinished Dissertations to the edition of Reid. It is as follows:—"I am aware of a phænomenon—a phænomenon, be it of mind or of matter—that is, I am aware of a certain relative, consequently a conditioned, existence. This existence is only known, and only knowable, as in relation. Mind and matter exist for us only as they are known by us, and they are so known only as they have certain qualities relative to certain faculties of knowledge in us, and we certain faculties of knowledge relative to certain qualities in them. All our knowledge of mind and matter is thus relative—that is, conditioned—and so far in conformity with the principle, that we are conscious only of existence as conditioned. But further. I am aware of a certain phænomenon, be it of mind or matter. This phænomenon—a manifestation of what exists for me only as known by me, and of what, as known by me, exists only in relativity to my faculties—how is it that I cannot even conceive it to exist solely in the relativity, in which solely it is known—that I cannot suppose it to be a mere phænomenon, an appearance of nothing but itself as appearing—but am compelled by a necessity of my nature to think that, out of this relativity, it has an absolute or irrelative existence, i. e. an existence" [which] "as absolute or irrelative" [is]

we see or feel is absolutely continuous. The sensible effect would be the same if there were alternate moments of motion and rest, provided that these intervals succeeded each other with sufficient rapidity. Achilles might thus pass the tortoise during one of its moments of rest. Even, therefore, were we to admit the reasoning involved in the fallacy of Achilles and the Tortoise, it would not conflict with the fact of motion as revealed by the senses.

"unknown and incomprehensible? Why, in short, am I constrained to suppose that it is the known phænomenon of an unknown Substance? Philosophers answer and say, it is an ultimate law of mind. I answer, and say, it is a particular case of the general law which bears" [declares?] "that not only the unconditioned simply, but even the unconditioned *of the conditioned* is unthinkable. Take an object. Strip it by abstraction of all its qualities—of all its phænomena—of all its relativities; reduce it to a mere unconditioned, irrelative, absolute, entity—a mere substance—and now try to think this substance. You cannot. For either in your attempt to think, you clothe it again with qualities, and thus think it as a conditioned; or you find that it cannot be thought, except as a negation of the thinkable. This is an instance of the unconditioned simply, and an ordinary application of the law. Take now, of the same object, a quality or phænomenon. A phænomenon is a relative—*ergo*, a conditioned—*ergo*, a thinkable. But try to think this relative as *absolutely* relative—this conditioned as unconditionally conditioned—this phænomenon as a phænomenon and nothing more. You cannot; for either you do not realize it in thought at all, or you suppose it to be the phænomenon *of* something that does not appear; you give it a basis out of itself; you think it not as the absolutely, but as the relatively, relative—not as the unconditionally, but as the conditionally, conditioned—in other words, you conceive it as the Accident of a Subject or Substance. This is an instance of the conditioned, and constitutes the special case—the particular law—of Substance and Phænomenon."[1] Even absolute relativity, as he elsewhere says, is thus unthinkable. We cannot conceive any given object as consisting solely of relations. We seem compelled to think that it would continue to exist after it ceased to

[1] Reid, 935.

stand in any relation to us—that it could exist without being perceived, and even though there was no one to perceive it. But this unperceived existence could only belong to the substratum which is independent of us, since all the qualities of the thing perceived are relative to us. Such seems to be Hamilton's theory of the Law of Substance, which, however, is not very easily reconciled with his Natural Realism. I may add that in one passage at least, Hamilton seems, like Mansel, to affirm that we have a direct perception of ourselves as substances. "As clearly," says he, "as I am conscious of existing, so clearly am I conscious at every moment of my existence (and never more so than when the most heterogeneous mental modifications are in a state of rapid succession), that the conscious ego is not itself a mere modification, nor a series of modifications, of any other subject, but that it is itself something different from all its modifications, and a self-subsistent entity."[1] He likewise insists more strongly on the truth of the Principle of Substance than he would be justified in doing if it is a mere exemplification of the Law of the Conditioned, and thus asserts one of two inconceivable contradictories between which we have no means of deciding.[2] On the whole he does not appear to have thoroughly worked out this part of his theory; but his observations may not on that account be less useful as suggestions for future inquirers.

[1] Lect. i. 373.

[2] See, for instance, Lect. i. 155.

CHAPTER VI.

THE GENERAL PSYCHOLOGY OF HAMILTON.

HAVING thus stated the principal theories of Sir William Hamilton, which may be regarded as original (inasmuch as even where he has been partially anticipated his method of treatment is new), I proceed to give a short sketch of the Hamiltonian Psychology.

Hamilton adopted the Kantian division of our mental states into Cognitions, Feelings or Emotions, and Conations, as he terms them, including the phænomena of Desire and Will. Whether it would have been better to have classed the Desires with the Feelings or Emotions, reserving the third of these heads for Volitions only, may perhaps be doubted. Hamilton, however, has written but little on the second of these divisions of the mental phænomena, and hardly anything on the third, so that his researches may almost be said to have been limited to Cognitions. In treating of any of these classes of mental phænomena, we may, according to Hamilton, have three objects in view, namely, to investigate the facts themselves, to discover their laws, and to follow them into their results; and we thus obtain three branches of Philosophy, namely, Phænomenology, Nomology, and Ontology. It seems, however, impossible to separate the study of the facts from that of the laws which govern them, and Hamilton's own Lectures may be regarded as a mixture of what he calls Phænomenology and Nomology. Ontology he apparently

regarded as impossible—at least in the old sense—for Hamilton's description of it is wide enough to include Natural Theology when rested on the Design argument and other proofs derived from experience. Of this subject, however, he has not formally treated.[1] Consciousness is, according to Hamilton, the essential condition alike of the phænomena of Cognition, Feeling, and Conation. There is no cognition no feeling and no conation of which we are not conscious, and whenever we are conscious, it is always of a cognition, a feeling, or a conation. When we are considering cognitions, feelings, and conations relatively to the conscious mind, we call them states of consciousness: when we wish to treat of them each for itself, we call them cognitions, feelings, or conations, as the case may be. Attention again, according to Hamilton, is nothing more than consciousness, or rather concentrated consciousness; but as in all distinct consciousness there is some degree of concentration, so in all distinct consciousness there is some degree of attention.[2] Neither consciousness nor attention, therefore, can be referred to any special faculty. They belong to all mental modifications alike, and are common to cognitions, feelings and conations. Man is always conscious. In the soundest sleep he is dreaming, and if he is unable to recollect his dreams on awaking, it is only because he has forgotten them. In proof of this, Sir William Hamilton relies on several experimental observations; but perhaps it is also manifest *à priori*. Consciousness is to the mind what extension is to matter. It is a sort of primary quality, and it is not possible to conceive mind without consciousness. Con-

[1] It is touched on more than once, however. See especially the second of his Lectures on Metaphysics.

[2] In a general sketch of this kind I do not think it necessary to give specific references, except when I quote the words of the author. This last statement is taken from Lect. i. 248.

sciousness, however, is only possible through discrimination, and therefore involves at least two simultaneous objects of perception or thought; but it is not limited to two, and is capable of embracing six or seven—not that all these are surveyed with vivacity, but only without absolute confusion. It is, however, as we have already seen, a mistake to limit the province of consciousness to the mind, as most philosophers have hitherto done; for we may also be conscious of states of matter, and are, in fact, conscious of these in external perception. And this has been admitted by those philosophers who maintained that the idea or representative object of which (according to them) we are conscious in perception is not a modification of the mind. Consciousness is an immediate knowledge, but it is likewise co-extensive with knowledge in general, for every act of mediate knowledge is also an act of immediate knowledge. I remember, for instance, that I saw St. Paul's Cathedral yesterday. This is a mediate knowledge of the cathedral; but it is an immediate knowledge of my present mental representation of the cathedral, and of the judgment or belief that connects the present with the past. In all mediate cognition, as already remarked, there is an immediate as well as a mediate object, and the immediate object is in all cases a present apprehension of consciousness. There is thus no conflict between Hamilton's statement that consciousness is an immediate knowledge, and his other statement that it is co-extensive with all knowledge, whether immediate or mediate. It is indeed not only co-extensive with all knowledge, but with all knowledge, feeling and conation; for the feelings or conations would not be *mine* unless I had an immediate knowledge or perception of them. I cannot know without knowing that I know, feel without knowing that I feel, or will without knowing that I will; or *vice versâ*. Our mental acts and the consciousness of them

are really identical—they are the same things regarded from different points of view. *I know*, and *I know that I know*, are merely two modes of describing the same mental fact or phænomenon.

Consciousness, being thus the source and condition of all our knowledge, must be accepted as veracious in every sound system of philosophy. If different portions of our immediate knowledge were found to be in conflict with each other, philosophy would be impossible, for we would have no means of determining which was right and which was wrong. Nay, even to affirm that one was wrong would be to affirm the Law of Contradiction, which rests on no higher basis than the veracity of our consciousness; and to assume that one was right would be to affirm the Law of Excluded Middle, which has the same origin.[1] In the event of a conflict between an immediate and a mediate cognition, it would be absurd to give the preference to the latter. For, first, every mediate cognition *is* an immediate cognition; and, secondly, it represents, or relates to, some other immediate cognition. Thus, in case of my recollection of St. Paul's Cathedral, the present representation in memory is an immediate cognition, and it represents, or relates to, a former immediate cognition, namely, my perception of the cathedral when I saw it last. I cannot set it up as veracious, therefore, without postulating two immediate cognitions, and also a relation between them; for if this relation be unfaithfully depicted, the mediate knowledge in question is likewise unreliable. In connexion with this subject, however, Hamilton draws the following distinction. The facts of consciousness, he tells us, are of two kinds—

[1] Hamilton, however, in practice sometimes seems to ascribe to these principles a higher authority than that which he accords to the ordinary facts of consciousness. This turns on the distinction between two kinds of facts of consciousness to be noticed presently.

"First, the facts given in the act of consciousness itself; and, second, the facts which consciousness does not at once give, but to the reality of which it only bears evidence. And," he proceeds, "as simplification is always a matter of importance, we may throw out of account altogether the former class of these facts, for of such no doubt can be or has been entertained. It is only the authority of these facts as evidence of something beyond themselves—that is, only the second class of facts—which become matter of discussion: it is not the reality of consciousness which we have to prove, but its veracity."[1]

This distinction is hardly drawn with Sir W. Hamilton's usual precision. Of course, no philosopher can deny *generally* that there are any facts of consciousness; but, owing to the difficulty of making careful observations on the mental phænomena, there is often a doubt as to whether an alleged fact of consciousness is really such or not. Philosophers are very far from being agreed as to what the facts of consciousness are, even if by facts of consciousness we mean those which may now be found in ordinary men; while the difference is greater if we limit the phrase, "facts of consciousness," to those which are original or primitive. Again, from Hamilton's language, it might be supposed that the second division referred not to the direct presentations of consciousness, but to something admittedly beyond its sphere, but which it nevertheless in some inexplicable manner suggested, represented, or bore testimony to. In this case, if the perception of the external world is to be referred to the second division—and

[1] Lect. i. 275-6. Hamilton had expressed the distinction in a less objectionable way a few pages earlier. "The facts of consciousness," says he, "are to be considered in two points of view—either as evidencing their own ideal or phænomenal existence, or as evidencing the objective existence of something else beyond them." Lect. i. 271.

Hamilton undoubtedly meant so to refer it—the doctrine preached would be that of Cosmothetic Idealism, not Natural Realism. Nothing on such a theory is *given* in the fact of consciousness but the mental state or modification; but then consciousness suggests—represents—bears evidence—that there is a reality beyond that mental state or modification, which may be termed an external world. Probably what Hamilton intended to say was as follows:—The external world, as a thing existing out of and independently of our consciousness, cannot be regarded as *a part* of the facts of consciousness. Though it is presented, not represented, in the fact of consciousness, it is possible (without self-contradiction) to admit the fact and yet to deny that the external world really exists; for why may not presentation be illusive as well as representation? It may, therefore, be said that the external world is not given—*contained—in* the facts of consciousness, though it is given—*presented—by* them. But the language in which Hamilton describes the second class of facts of consciousness still appears objectionable. It is so more especially, if we are conscious of sensation (as Hamilton elsewhere maintains,) not as an affection of the mind alone, but of that composite of mind and matter the animated nervous organism. The state of this organism would in this case appear to be a part of the facts of consciousness themselves, and not something outside them, to which they only bear testimony. The use which Hamilton makes of the distinction between these two classes of facts of consciousness, however, is important. A philosopher may stop at the facts of consciousness considered as mere states of the mind or ego, and refuse to go any farther; but if he *does* go any farther, and declares his belief in anything objective or substantial, he thereby accepts the testimony of consciousness to something more than "its own phænomenal or ideal existence." This testimony is either direct or indirect, but the

indirect depends on the direct, and is inferior to it in point of certainty. The philosopher in question must therefore accept, in part at least, the direct testimony of consciousness, and, accepting it in part, he is bound in consistency to accept it as a whole. Every consistent scheme of philosophy that goes a step beyond Nihilism must accept everything as true that consciousness bears direct testimony to; and as consciousness bears this direct testimony to the perception and existence of the external world (this, Hamilton thinks, is conceded by his opponents), this testimony must in consistency be accepted as veracious.[1] Consciousness is to the philosopher what the Bible is to the theologian. As errors in theology have usually arisen from not accepting the testimony, the whole testimony, and nothing but the testimony, of the Bible, so all errors in philosophy have arisen from not accepting the testimony, the whole testimony, and nothing but the testimony, of consciousness; and as we must appeal to the Bible in correction of the former, so we must appeal to consciousness in correction of the latter. Hamilton has not perhaps taken sufficient notice of the fact that, as the testimony of the Bible is liable to be corrupted by errors of transcription or translation, by interpolations and by the acceptance of apocryphal books as genuine, so the testimony of consciousness is still more liable to be corrupted by similar influences.

Such is Hamilton's account of Consciousness and Attention.

[1] I cannot think that Hamilton ever intended to *prove* the veracity of consciousness. Consciousness must be accepted as veracious, he says, until we see some reason for denying its veracity. If we attempt to represent it as untruthful, we can only do so by making some supposition which seems to carry its improbability on the face of it. One of these suppositions is that of nature acting not only in vain, but in counter-action of herself. Another is that man is the dupe of a perfidious creator. None of them are of such a character as to commend themselves (in the absence of evidence) to any philosopher.

As to the relation between Consciousness and Memory, he is less consistent. He begins by laying down in general terms that memory is a condition of all consciousness; for the notion of ego, or self, which is involved in all consciousness, "arises from the recognized permanence and identity of the thinking subject, in contrast to the recognized succession and variety of its modifications. But this recognition is possible only through memory."[1] This doctrine is not peculiar to Hamilton, but it seems open to some objections. Let us go back to the *first* time that I recognize the permanence and identity of the subject in this succession of its modifications. To recognize the two modifications as different and successive, it may be said that I must recollect the former when the latter is present; but in the former there was no ego or self, since by hypothesis that notion arose for the first time on comparing the former (as represented in the memory) with the latter (as actually present). I was therefore not conscious of the former state, and hence I must recollect that of which I was not conscious when it was present. Again, how could I even inquire whether the subject in these two successive states was identical or otherwise, unless I knew that there *was* a subject in the former as well as in the latter; and if there was a subject in the former state, what could that subject be but the ego? Many philosophers seem to me to have confounded personality with personal identity (which latter cognition, like all other instances of perceived identity, could, as I believe, only arise after we had experienced two states of consciousness, each of which had an ego or person in it), and to have assumed that, previous to the states of consciousness of which the proper expression is "I know," there were other mental states capable of being recollected, which could only be correctly described by some such phrase as "Somebody knows," or

[1] Lect. i. 205.

"There is knowledge." Apart from the prevalent confusion between personality and personal identity, I see no reason to believe that there ever was such a state; but it seems doubly inconsistent for a philosopher who holds that there was such a state, to withhold from it the title of "state of consciousness," while at the same time contending that consciousness is the sole field of philosophy. However, even if it were conceded that memory is, in this sense, a condition of all consciousness, it does not follow that every state of consciousness is *followed* by memory; for according to Hamilton, we can be conscious of six or seven objects at once, and if we recollected one of these when we passed into the next succeeding state of consciousness, it would be sufficient to enable us to represent the two successive states as successive modes of the same ego or self. Hamilton, however, in some passages affirms in the strongest manner that every act of consciousness is followed by memory, and further that every act of memory is preceded by a state of consciousness—which latter statement I am unable to reconcile with his assertion that memory is a condition of all consciousness, inasmuch as it is only through memory that we attain the notion of ego or self, which is involved in all consciousness. "Of consciousness" says he, "however faint, there must be some memory, however short." "It can easily be shown that the degree of memory is directly in proportion to the degree of consciousness, and consequently that an absolute negation of memory is an absolute negation of consciousness."[1] Again, "It is a law of mind that the intensity of present consciousness determines the vivacity of the

[1] Lect. i. 355. It is curious to find the editor and successor of Stewart using this argument against that author, without observing that Stewart denied that there was any such relation between consciousness and memory, and founded the doctrine which Hamilton is combating on this denial. See Stewart's Works, ii. 134 (Hamilton's edition).

future memory. Memory and consciousness are thus in the direct ratio of each other. On the one hand, looking from cause to effect—vivid consciousness, long memory; faint consciousness, short memory; no consciousness, no memory; and on the other, looking from effect to cause, long memory vivid consciousness; short memory, faint consciousness; no memory, no consciousness." [1] But distinct as these declarations are, I meet with others of an equally positive character which I am unable to reconcile with them. When combating Locke's theory, that in sound sleep we do not think at all, Hamilton says, "As to the objection of Locke and others, that as we have often no recollection of dreaming, we have therefore never dreamt, it is sufficient to say that the assumption in this argument—that consciousness and the recollection of consciousness are convertible—is disproved in the most emphatic way by experience." [2] And he then goes on to state the facts of somnambulism, of which he says, "we have no recollection when we awake of what has occurred during its continuance. Consciousness is thus cut in two; memory does not connect the train of consciousness in the one state with the train of consciousness in the other." [3] But this "forgetfulness is not a decisive criterion of somnambulism. Persons whom there is no reason to suspect of this affection, often manifest during sleep the strongest indications of dreaming, and yet when they awaken in the morning retain no memory of what they may have done or said during the night." [4] Moreover something similar to this "rapid oblivion of our sleeping consciousness, happens to us occasionally even when awake. When our mind is not intently occupied with any subject, or more frequently when fatigued, a thought suggests itself. We turn it lazily over and fix our eyes on

[1] Lect. i. 368.
[2] Lect. i. 319.
[3] Lect. i. 320.
[4] Lect. i. 322.

vacancy. Interrupted by the question what we are thinking of we attempt to answer, but the thought is gone. We cannot recall it and say that we were thinking of nothing." [1] In this last instance perhaps it might be said that there was a very short memory of the thought, and that the faintness of the preceding consciousness accounted for the shortness of the memory. But this explanation is inapplicable to the phænomena of somnambulism, for in that state Hamilton affirms that "the various mental faculties are in a higher degree of power than in the natural," and that we must ascribe to it, "not only consciousness but an exalted consciousness." [2] As the passages I have cited are taken from two lectures which Hamilton delivered year after year in immediate succession to the same audiences, it may be assumed that he had some plausible mode of reconciling them, but I have not been able to discover it. If the cases referred to in the 17th lecture are rather instances of very short and very faint memory, than of no memory at all, Stewart might surely be allowed to offer the same explanation of those dealt with in the 18th lecture.

In connexion with consciousness Hamilton has introduced into English philosophy (though there were not wanting some earlier indications of it) a doctrine of considerable importance—that of latent mental modifications, sometimes described as unconscious cerebration. This doctrine may be illustrated by the minima of sense. The *minimum visibile* is probably not a quantity of space (whether absolute or relative) but a quantity of light. This, however, is not material to the present argument. A field seems to me at a distance to be an uniform green. Coming closer, I see for the first time yellow buttercups and white daisies. Returning to the place from whence it looks an uniform green, it is evident that, if a number of the buttercups or daisies were placed together,

[1] Lect. i. 324. [2] Lect. i. 320.

I would see a yellow or a white patch in the green field, although none of them are visible when taken separately. But each of them evidently contributes to the effect which is produced when they are placed together; for if we place together the smallest number that will render the yellow or white patch visible, it will disappear on the removal of a single one. This would be more evident if we took objects of larger size, since then, perhaps, two together would be visible where one was not. When one of these is present, though we are not conscious of any visible effect produced by it, the mind is in a different state from what it would be in if that one was absent; for it will now be rendered conscious by an object which would not otherwise be capable of exciting it to consciousness. A force of one ton applied to raise a body weighing two tons produces no visible effect, but the body is notwithstanding in a different state from what it was before. It can now be raised by a smaller force than would otherwise be required for that purpose. So a thing which produces no separate impression on our consciousness, may nevertheless render us capable of being affected by causes that would not otherwise affect us. Some minimum of time, moreover, seems to be essential to every act of consciousness; and whatever produces a nervous impression, lasting for a time shorter than this minimum, cannot produce any special state of consciousness. But a repetition of such impressions will produce what none of them singly is capable of producing—a great number of undulations being often necessary to produce a sensation of sound, and a still greater number to produce a sensation of colour. In these instances there is no reason to believe that the last of these undulations was more efficacious than the first. They were all similar in character and each produced its separate effect; but it required the combination of a number of these separate effects to produce any consciousness at all,

while a further combination would perhaps change that state of consciousness into another. All states of consciousness may therefore be regarded as made up of a number of latent mental modifications. Consciousness and latency are, in fact, separated by no well-marked line. When we pass gradually from latency to consciousness, the consciousness which first appears is so faint as almost to escape our observation. When we pass in like manner from consciousness to latency, the former fades away so gradually that it is usually impossible to fix the precise instant at which it disappears. Of course, I speak of the consciousness of some particular feeling or state; for, according to Hamilton, we are always conscious. But when one feeling or state of mind is gradually replaced by another (the two being simultaneously present for a time) it is often difficult to fix the moment when the former is finally lost; and if we turn our fading attention back upon it, we may be at a loss to determine whether what we are then conscious of is a continuance of the old feeling, or a representation of it in the memory. Light is very distinct from darkness: but who will undertake to fix the moment when the one passes into the other during our mornings or our evenings? And though, of course, light could not be made up of any quantity of absolute darkness, all darkness of which we have experience is probably but a diminished quantity of light which, if sufficiently multiplied, would reproduce the brightest sunshine. This, in Hamilton's opinion, is the character of all our mental states.

It has been objected to this argument that a certain quantity of the cause may be necessary to produce any of the effect,[1] and that, therefore, though the *minimum visibile* produces consciousness, an object less than the *minimum visible* may produce no mental effect at all. This is perhaps sup-

[1] Mill's Examination, p. 346.

posable; but I doubt if there is any instance in nature in which an agent, which in small quantities produces no effect whatever, begins to produce an effect when the quantity is increased. An increase in the quantity of the cause indeed sometimes alters the kind of effect, as when by increasing the temperature to a certain point, water begins for the first time to boil; but the heat was producing an effect on the water all through, which was previously evinced by its change of volume and its increased evaporation. The same thing takes place, according to Hamilton, when a distant object acts on the sense of sight. Every portion of it, however minute, produces an effect; but when the quantity is increased to a certain definite amount, there is a change in the kind of effect —it passes from latency into consciousness. It may be said, perhaps, that the latent effect is produced not on the mind but on the nerves. This may be so. The difference between the two theories is very slight, and there seems to be no experimental test for distinguishing between them: nor is there any reason why we may not suppose the effect to be produced on both.

There are various degrees of latency. The thousandth part of a *minimum visibile* cannot be supposed to produce as much effect as one half of it; and the general fact of latency is by no means confined to our sensations. On the contrary, every act of memory consists in bringing some state or feeling from latency into clear consciousness. The effect required for this purpose will be greater or less according to the degree of latency of the thought which we seek to recall. No state of consciousness, in fact, is ever wholly obliterated. It has only become latent. What appeared to have been utterly forgotten is often unexpectedly recalled during the peculiar exaltations of consciousness which take place in certain diseases. Every mental energy once commenced

continues throughout our whole lives—at first consciously, then in a state of latency, then, perhaps, again recalled to consciousness, and then again latent.[1] In explaining the theory of the mind latent modifications meet us at every turn. Memory proper—the Conservative Faculty, as Hamilton calls it—is in fact the power of preserving mental states or modifications in the mind, but out of consciousness.

This leads us to Hamilton's enumeration of the faculties of cognition or knowledge, which are: 1. Perception, divided into External and Internal. 2. Memory, or the Conservative Faculty. 3. The Reproductive Faculty. 4. The Representative Faculty or Imagination. 5. The Elaborative or Discursive Faculty, the science of whose operations is Logic. And 6. The Regulative Faculty, which, however, is a mere name for the entire collection of principles or laws, which as universal and necessary must, according to Hamilton, be *à priori*, or derived from the mind itself. These laws or principles, however, Hamilton, unlike Kant, does not seek to enumerate in full. In treating of External Perception the question of Natural Realism naturally crops up, and with it the distinction being the primary and secondary qualities of matter. In Hamilton's Lectures extension and solidity are described as primary qualities, all others being classed as secondary: but in the Dissertations to Reid he divides the qualities of matter into three classes, viz, the primary, which are all reducible to occupation of space; the secundo-primary, which are likewise all reducible to resistance to our locomotive volition; and the

[1] Mr. Mill remarks of this doctrine that, if so, I must still be desiring and willing to rise from my bed yesterday morning (Examination of Hamilton, p. 343, note). Hamilton perhaps would have done well to limit his theory to the persistence of sensible impressions. When reproduced by the imagination these, according to Hamilton, are manifested through the organ which was originally affected by them and may apparently be regarded as weaker forms of the original sensations.

secondary, embracing the remainder. He likewise distinguishes between sensation and perception (in the stricter meaning of these terms), the sensation (proper) being the pleasurable or painful feeling which we experience in the exercise of the senses, and the perception (proper) being the knowledge of objects which we gain by this exercise. The law which connects these two is that they are always co-existent, but in the inverse ratio of each other: which is an instance of the more general law that knowledge and feeling always co-exist, but are in the like inverse ratio. The phrase "inverse ratio," however, is not to be taken strictly. "It cannot be said," says Hamilton, "that the minimum of sensation infers the maximum of perception, for perception always supposes a certain quantum of sensation. But this is undeniable that above a certain limit, perception declines in proportion as sensation rises." [1] This would seem to imply that below this limit we would have a sensation without a perception, in which case Hamilton's statement that they always co-exist would be erroneous. The inconsistency is, perhaps, removed by the corresponding passage in the Dissertations to Reid: "Every perception proper has a sensation proper as its condition; but every sensation has not a perception proper as its conditionate, unless (what I think ought to be done) we view the general consciousness of the locality of a sensorial affection as a perception proper. In this case the two apprehensions" [sensation proper and perception proper] "will be always co-existent." [2] Adopting this explanation of their invariable co-existence, however, it can hardly be said that the one always increases in quantity as the other diminishes. Like many of Hamilton's laws, this one would therefore seem to require more accurate expression. It may be remarked that the strength of a sensation is not always to be estimated by

[1] Lect. ii. 102. [2] Reid, 880 (a).

the amount of pleasure or pain which it produces. There are sensations which are pleasurable in a moderate degree, but painful when they rise very high; and in passing from the pleasurable to the painful stage, there must be a point at which the sensation, though by no means feeble in quantity, is almost indifferent. If this is the point at which perception attains its maximum, it might be true that the perception varied inversely with the amount of pleasure and pain which was felt, though not, properly speaking, with the amount of sensation. I do not, however, find any such explanation as this in Hamilton, though the fact of sensations passing from the pleasurable to the painful by an increase of quantity is noticed.[1] Sir W. Hamilton's doctrine, that all the senses are modifications of touch, has been already noticed. He thinks, however, that a larger number of senses should be distinguished than is usually done, many of the sensations and perceptions usually referred to the sense of touch being different from each other, not merely in degree but in kind. They have nothing in common except that there is no special organ to refer them to.[2]

The Conservative, Reproductive and Representative Faculties are closely connected together. The only proof we can give

[1] It may perhaps be said that in such cases the same cause produces two distinct sensations according to the quantity employed—the sensation produced by a small quantity being a pleasurable, and that by a large quantity a painful, one: and that at the indifference point there is in reality no sensation at all, or rather a sort of fluctuation between very small quantities of the two. Whether this explanation would save the law in question or not, I must leave to the reader.

[2] I need scarcely notice Hamilton's argument to prove that in the perception of sensible objects we begin with the wholes rather than the parts. On principles of Natural Realism the natural inference seems to be that we begin with the organic affection. This perhaps always contains several sensitive minima, but frequently not enough of them to give us what is called a whole, or entire, sensible object.

that anything has been preserved in the memory is that it can be reproduced, and when reproduced it is always represented. Some minds, however, are remarkable for the length of time after which portions of their former knowledge can be reproduced; others for the readiness with which reproduction is effected; and others again for the vividness of the reproduced ideas. The three faculties may therefore be distinguished. It is in this connexion that Hamilton treats of Association of Ideas. He seems to regard its functions as limited to the phænomena of reproduction, but over these its control is absolute. No idea is ever reproduced otherwise than through the agency of the principle of association. Whenever an idea is reproduced, it is because there has been in the mind, immediately before it appears, some other idea which is associated with it. Here, of course, I am taking the word *idea* in its widest sense. Reproduction may be caused by the presence in the mind of a sensation, a perception, an emotion, or a volition as well as of an image or concept. Every present state of consciousness tends to vivify and call into consciousness all latent modifications which are associated with it, and whenever a former mental state is reproduced, it is because it has been thus vivified. It may, however, be vivified not merely by the presence of a state of consciousness associated with it, but by the presence of a latent mental modification associated with it. Suppose two latent modifications, *a* and *b*, are simultaneously present and intimately associated with each other, *a* being *more* latent than *b*. A thought now enters the mind which is associated with *a* but has no direct association with *b*. *a* receives an accession of strength which renders it less latent than before, but is insufficient to force it into consciousness. It will now act with this increased strength on *its* associate *b*, and the latter having been less latent than *a* may appear above the surface. In this way an idea often

seems immediately to excite another whose association with it is only mediate or indirect, the intermediate link, or links, not having risen above the state of latency. The idea which at this instant occupies my consciousness may be regarded as a sort of centre of disturbance. It gives an impetus to all the latent modifications that are in immediate contact with it on any side. These communicate the impulse to the latent modifications in contact with them, and the disturbance spreads outward in wider and feebler circles. But the depression even of a feeble wave may cause an object, which was but a very short distance below the surface, to appear above it; and the objects which appear successively above the surface may not be on the same side of the centre of disturbance, but perhaps in quite opposite directions. Again, several states of mind are often simultaneously present to our consciousness. These are so many different centres of disturbance, and when the waves propagated from two or more of these centres meet, there may be an exaggerated depression which will cause something to appear above the surface that neither of the disturbances by itself was capable of exciting. Similar effects arise when the exciting mental states are not simultaneous but successive—when, for instance, a new sensible impression occurs in the midst of a train of thought. It, in that case, becomes a new centre of disturbance, whose effects are soon blended with the expiring waves of the old one.[1] It may be further remarked that when a state of consciousness, which we may call x, calls up the idea of y, it frequently

[1] These similes are, of course, in one respect inappropriate. The impulses are communicated to the water, and that which appears above the surface is not the water but something in it. No such distinction exists in the case of the process we are describing. That which appears above the surface has itself received an impulse (mediately or immediately), and is of the same nature with everything else that has received it.

continues to exist along with it, and it may even outlast it and call up a new idea z, which is associated not with y but with x. This occurs, for instance, in what is called intentional memory. We know that the idea we are seeking for is associated with x. By keeping x steadily before the mind, we know that it will call up a great number of other ideas, all of which are associated with it, and among these we expect that the one we are in search of will appear. Accordingly we keep x in the mind as long as we can, withdrawing as far as possible our attention from everything that it calls up as soon as we are satisfied that it is not the right thing; and the right thing usually appears in the long-run. On other occasions it becomes necessary, in the acquisition of various dexterities, that a train of associated thoughts should pass through our minds with great rapidity. Here, as a certain minimum of time is essential to consciousness, when the train becomes sufficiently rapid some of the members must drop into latency. This occurs not when the dexterity is imperfect but when it is perfect; and the members of the train are never more influential in practice than after we have ceased to have a separate consciousness of them.

But what is it that thus associates one idea with another, and enables the former ever afterwards to recall—or rather *tend* to recall—the latter? In his Lectures, Hamilton reduces the laws of association to one—the Law of Redintegration—which is thus enounced: "Those thoughts suggest each other which had previously constituted parts of the same entire or total act of cognition."[1] It has two branches; for "to the same entire or total act belong as integral or constituent parts, in the first place, those thoughts which arose at the same time or in immediate consecution; and in the second, those thoughts which are bound up into one by their mutual affinity."[2] These two subor-

[1] Lect. ii. 238. [2] Ibid.

dinate laws are accordingly designated the Law of Simultaneity and the Law of Affinity. In the Dissertations to Reid, however, Hamilton says that the Law of Redintegration is insufficient to explain the whole phænomenon, without the aid of what he terms the Law of Repetition. The latter law is thus enounced: "Thoughts co-identical in modification, but differing in time, tend to suggest each other;"[1] while the Law of Redintegration is thus worded: "Thoughts once co-identical in time are, however different as mental modes, again suggestive of each other, and that in the mutual order which they originally held."[2] There is, however, here no real conflict. What Hamilton calls the Law of Redintegration in his edition of Reid is evidently the same law that he terms the Law of Simultaneity in his Lectures while the Law of Repetition is identical with, or rather included under, the Law of Affinity. The same two laws thus appear in both places, the only difference being that in the Lectures Hamilton includes both of them under a higher law, which in his edition of Reid is left unnoticed, or rather is replaced by one of a still higher and more abstract character—the Law of Associability. It has been observed already that Hamilton was not quite constant in his employment of philosophical terms.[3] It is to be added, however, that Hamilton distinguishes in his edition of Reid between what he calls logical or objective, and psychological or subjective trains of thought. It is over the latter only that the principle of association

[1] Reid, 912 (b). [2] Reid, 913 (a).

[3] I am not sure, however, that the Law of Repetition might not have been dispensed with. When for instance, I feel a peculiar kind of pain and recollect that I felt it before, I always remember some of the circumstances connected with the former pain, thus showing the influence of the Law of Simultaneity. "It is only similarity in the midst of difference," says Hamilton, "that associates" [Reid, 915 (a)]; and as soon as the element of difference is introduced we get beyond the Law of Repetition.

rules supreme. It is not by means of association of ideas that we pass from the premisses of a syllogism to its conclusion; for this is a necessary sequence, and association is incompetent to account for the phænomenon of necessity. In like manner it is not by the aid of this principle that we pass from one of two relatives to the other, for in the thought of either relative that of the other is necessarily implied. There is indeed an ambiguity in the language often employed on this subject which it is necessary to clear up. Premiss and Conclusion, for instance, is in one sense a Law of Association (being a special branch of the Law of Affinity). Thus, one (or both) of the premisses from which I formerly deduced a certain conclusion, occurring to my mind simply as a judgment or proposition, may recall that conclusion under the influence of the Principle of Association; but if both premisses are present to my consciousness, *and I think of them as premisses*, it is not the Principle of Association that calls up the conclusion. That is the act of the Elaborative Faculty, and an act which would equally take place if I had never drawn that conclusion from the same premisses before—an act similar to that which took place when I first inferred it. And this conclusion is not one of many mental states which the thought of the two premisses might recall as more or less connected with them. It follows invariably and necessarily, provided, of course, that I think of the premisses *as premisses*. A train of reasoning can indeed be carried on to a great length with little or no aid from the principle of Association, assuming that the various premisses employed in the argument are brought before the mind in some other way; as, for instance, in reading an argumentative book. The suggestion of the things signified by the signs or words employed, seems to be, in that case, all that is properly ascribed to association.

Besides forming the main subject of Logic, the consideration of the Elaborative Faculty introduces us to the nature of the process of abstraction and the disputes between the Nominalists and Conceptualists on the subject of General Notions or Ideas. According to Hamilton abstraction consists in converging our attention on some parts of an object (or of a number of objects present to the mind simultaneously) whilst not attending to the remaining parts. All objects are at first presented to us vaguely and in confusion. The maxim, *Divide et impera,* is applicable to them all, and without this convergence of attention on portions of them we can get no clear notions at all. Abstraction is as necessary for the formation of the notion of the individual as of the class; for in the early confused state of knowledge, children are apt to confound individuals not only in name but in reality. It is by concentrating attention on the points of difference that children come to distinguish one person from another, as by concentrating attention on the points of resemblance they come to regard both as men.[1] But the parts on which attention can thus be converged are of two kinds. They may be integrant parts of the thing, like the arms and legs of a man, or they may be modes or qualities, such as his figure, size, and colour. Hence there are two kinds of abstraction, which Hamilton designates Partial or Concrete Abstraction, and Modal Abstraction. The latter kind of abstraction, especially, seems to be intimately connected with generalization. The general idea, or concept, is not properly an idea, but that part of a perception, or idea, on which our attention is con-

[1] Hamilton often speaks of abstraction as a negative, not a positive state of mind, consisting merely in non-attention to certain parts of an object. But non-attention to these parts necessarily implies that our attention is converged on the other parts.

"Pluribus intentus, minor est ad singula sensus"

and *vice versâ.*

centrated. It is a mode of considering ideas—a point of view from which they may be regarded. Hence it cannot be pictured in the mind by itself, for it is impossible to realize a way of regarding things, except in connexion with some of the things so regarded. The term Man indicates a way of regarding John Smith, Tom Brown, and every other individual to whom that term is applicable, and it cannot be depicted in imagination apart from some of these individuals. It results, in fact, from a comparison between a number of sensible impressions by which we separate the points in which they resemble each other from those in which they differ; but this act of comparison cannot take place unless we have something (or rather, some things), to compare. We can associate this mode of regarding things with a name, so that whenever the name is pronounced we are reminded of the point of view from which they are to be considered; but it is this mode of regarding things that gives meaning and significance to the name and not *vice versâ*. No name can enable us to regard things from a point of view which would otherwise be impossible. General names, however, have this advantage, that they are associated with the things to be compared, as well as with our mode of comparing them, and they thus recall both at once when it is requisite to do so. They recall, in fact, both their denotations and their connotations. Thus the name Man usually recalls at once one or more individual men, and at the same time reminds us that our attention is to be converged on the points in which these individuals agree, to the exclusion of those in which they differ.[1] But the concept can exist without the general name, whereas without the concept, the general name would sink into a proper name,

[1] Or rather on some of the points in which they agree; for the men we call up in imagination usually agree in more points than those which are connoted by the name Man.

ambiguously applied to more than one individual. The word Man, in fact, would, in that case, *mean* John when applied to John, and Peter when applied to Peter; and being thus subject to greater ambiguities and inconveniences than ordinary proper names, it would very soon sink into disuse. When the true character of the concept is thus explained, Hamilton thinks the dispute between Nominalism and Conceptualism is at an end. When the Conceptualists affirmed the existence of General Ideas, they were supposed by their opponents to mean General Intuitions, or General Images (Imaginations), which do not exist. When the Nominalists denied the existence of General Ideas, their opponents understood them as denying that there were any General Concepts, in which case all generalization would be impossible. Both were really agreed that there are no General Intuitions or Images, but that there *are* General Concepts. That some of the disputes between the Nominalists and the Conceptualists turned on the ambiguity thus signalised by Sir William Hamilton, cannot, I think, be doubted; but it may be questioned whether all of them did so. There is, in fact, no controversy with regard to which it is more difficult to ascertain what was the precise point in dispute. Some Nominalists (for instance, Berkeley) denied the possibility of the process which Hamilton terms Modal Abstraction; but the existence of that process has been admitted by so many professed Nominalists, that it would almost seem a paradox to say that its possibility was the principal subject in dispute. If this distinction were adopted, Hamilton should be classed as a Conceptualist. His own statement of the question, in his Lectures is this: Can we form an adequate idea of that which is denoted by an abstract, or abstract and general, term?[1] But as he apparently answers this question in the

[1] Lect. ii. 296. But is there not at least as good reason for putting the

negative, we can hardly suppose that he thought it was *really* the point in dispute, since he elsewhere represents the differences between the contestants as purely verbal. However, the question, as thus stated, is by no means free from ambiguity. For what is meant by the word "idea," and what is meant by the word "adequate"? If the idea of a class is required to be adequate not only to the class, but to every sub-class and even to every individual comprised in it, such an idea is doubtless impossible; nor, probably, had Locke any intention of asserting the contrary, in the passage of his Essay so often cited on the subject. But if we regard the idea of a class as adequate whenever it is sufficient to distinguish that class from every other class, whether higher, lower, or co-ordinate, then there is no reason why we should not have an adequate idea of that which is denoted by a general term. If my idea of a triangle was adequate to the sub-class right-angled triangle, this would not be a perfection but a blemish. Considered as a representation of the class which it was intended to represent, it would be, not adequate but, redundant. Probably, no one ever has an adequate—meaning by that term a complete, or perfect—idea of the extension of a general term; but there is no reason why he should not have an adequate idea of its comprehension. Hamilton's discussion of the entire subject is, however, confessedly incomplete, since he does not even attempt to carry out in full the design which he states when introducing the subject.[1] He seems to have finally decided on devoting most of the time at his disposal to a refutation of the theory of Brown, and we are thus pre-

question in the form: Can we form an adequate idea of that which is *con*noted by a general term? Possibly Hamilton intended to include this, for he does not seem to have employed the word *de*note in the limited signification—as contra-distinguished from the word connote—in which it is used by Mr. Mill.

[1] Lect. ii. 296.

sented with the negative rather than the positive side of his doctrine.[1]

Connected with this subject is Hamilton's Theory of Judgments,[2] which has also been severely criticised. It is certainly wanting in that clearness and precision which we usually meet with in his writings, but his critics will find it no easy task to convict our author of any positive error. The theory is developed at greater length in the Lectures on Logic than in those on Metaphysics, and in both cases the exposition includes numerous quotations from other authors, in making which Hamilton does not seem to have paused to point out that they were not always using psychological terms in his own restricted meaning. Nay, in some instances, when commenting on these passages, he seems to have slided into employing these terms in the vaguer sense of the authors whom he is citing. Thus, in the Lectures on Metaphysics, he quotes with approbation from Crousaz, "Every time we judge, we compare a total *conception* with a partial, and we recognize that the latter really forms a part of the former;"[3] in commenting on which Hamilton remarks "Judgment is conversant with two *notions*, one of which is contained in the other."[4] (The italics are mine.) Now undoubtedly if the words "conception" (or concept) and "notion" are here taken in their strict sense, these descriptions

[1] From the pleasure which Hamilton expresses in one of his letters to Cousin at finding that Abelard was a Conceptualist, it would seem that at that time he preferred the Conceptualistic doctrine. See Professor Veitch's *Memoir of Hamilton*, p. 199.

[2] Judgment according to Hamilton is involved in every act of consciousness, since there is always a contrast and discrimination of two things at least. The remarks in the text are confined to those judgments which may be translated into propositions with a subject and predicate or to what Dean Mansel terms logical (as opposed to psychological) judgments.

[3] Lect. ii. 336.

[4] Lect. ii. 337.

are objectionable. The conception or notion ruminant, for instance, is not contained in the conception or notion cloven-footed, or *vice versâ:* and when I judge that all ruminating animals are cloven-footed, the subject is not a total conception which I compare with a partial conception (the predicate), nor do I find that the conception cloven-footed is really a part of the conception ruminant or ruminating animal.[1] Thus understood, the description of Crousaz would in fact only be correct if all judgments were what Kant termed Analytical or Explicative judgments. But Hamilton did not, nor probably did Crousaz, intend to convey this meaning. For Hamilton expressly tells us that this relation of whole and part may exist between the extensions, as well as between the comprehensions, of the two conceptions or notions, and he even thinks he has made a valuable addition to the science of Logic, by distinguishing between reasoning in comprehension and reasoning in extension. Now if the words conception and notion are understood strictly, it is absurd to speak of two *notions* or *conceptions* standing to each other in the relation of whole and part, because their extensions do so. The notion Black is not a part of the notion Man, nor is the notion Man a part of the notion Black, because these two notions happen to have, to a certain extent, a common extension. Considered merely as notions, there is no other relation between the notion

[1] Unless we use the terms "conception" and "notion" to include all (known) properties of the class and not merely those which are connoted by class-name—which certainly was not Hamilton's *ordinary* use of terms in question. In this extended meaning, cloven-feet being a (known) property of the class ruminant, forms a part of the notion or conception ruminant, and rumination being a (known) property of the class cloven-footed, forms a part of the notion or conception cloven-footed. Ruminan and cloven-footed are in fact, on this theory, two names for the same notion or conception. This use of language, however, seems to me very con fusing and productive of no benefit.

Black and the notion Man, than between the notion Green and the notion Man, nor could the mere comparison of notions or conceptions lead us to form any judgment as to the connexion of the former pair which was not equally applicable to the latter. Hamilton, therefore, must be understood in these and similar passages as using the words Conception, Notion, Thought, &c., in a signification wide enough to include the extension as well as the comprehension of the terms which form the predicate and subject of a proposition: and of course when he speaks of *comparing* concepts or notions, we must equally understand him as referring to the comparison of their extensions, no less than of their comprehensions. The former comparison may have originally been the work of experience, but when the requisite experience has once been attained, it may not be necessary to go beyond the comprehension and extension of the terms (as recalled to the mind by the enouncement of the proposition), to enable us to judge that the proposition is true. To this, perhaps, I ought to add that judgment does not of itself imply belief. A judgment must be present to the mind in order to be doubted or disbelieved. Logic, as Mr Mill has well remarked, does not concern itself with the act of belief but with that which is believed,[1] or rather perhaps he should have said, with that which is proposed or tendered for belief. That which is proposed for belief is a judgment or proposition: and even if it be true that *when believed*, it is believed on the evidence of experience, the judgment itself, as distinguished from the belief in it, may be the result of a mere comparison of concepts (in the strict sense) by the Elaborative Faculty. I doubt, however, whether Hamilton would have given this explanation of some of the expressions I have cited from him. The real source of the

[1] Logic i. 96 (8th edition). The observation is hardly consistent with some of his criticisms on the Hamiltonian theory of judgment.

difficulty in following his exposition is, I believe, that he has entirely omitted to signalize the distinction between Analytical and Synthetical Judgments in connexion with it (he has noticed it elsewhere), and this omission taken in connexion with the loose employment of the terms conception or concept and notion has left his expressions open to much misconstruction.[1]

The sole operation of the Elaborative Faculty is comparison. When this comparison is made between two concepts, the result is a Judgment. Of concepts, considered in pairs, the great division is into Congruent or Agreeing (that is concepts which can be united in thought) and Conflictive, or those which cannot. Hamilton gives this as a division of concepts "considered under their comprehension," so that, apparently, he could not refer to the extension of the concepts to determine whether they were congruent or conflictive: and as the two sub-classes include the whole class to be divided, all concepts which are not conflictive must be treated as congruent. The conflict between the different elements of a concept, however, may be only mediate, and may therefore require considerable pains to detect. On this division depends Hamilton's fuller expression of the Theory of Judgments. To judge is, according to him, "to recognize the relation of congruence or confliction in which two concepts, two individual

[1] Hamilton evidently was not quite satisfied with his own language on the subject. Thus Lect. iii. 140, he makes applicability to an indefinite plurality of objects (extension) a characteristic of every concept, and speaks of extensive quantity as essential to it. But in a note he suggests as a "better (?)" division, "1. By relation *to themselves*, they" [concepts] "have the quantity of comprehension; 2. By relation *to their objects*, they have the quantity of extension," &c.; thus apparently describing the former quantity alone as intrinsic and essential, and the latter as accidental and dependent on the constitution of the objective world. See also the passage, Lect. iii. 218, which is quoted at pp. 147-8 of this book.

things, or a concept and an individual compared together, stand to each other;"[1] and of course in the more important cases, the relation is recognized as existing between two concepts. When the relation thus recognized between the subject and the predicate is one of congruence, we unite the two into a single thought, and this thought is a judgment. We cannot unite the two concepts into a single concept or notion without making them the subject and predicate of a judgment, nor can we make them the subject and predicate of a judgment without uniting them into a single notion. Congruent concepts being those which are capable of being so united, become the subject and predicate of an affirmative judgment when we bring them together, while conflictive concepts equally fall into the position of subject and predicate in a negative judgment. A further explication of the process, however, would here be desirable; for, to deal with affirmative judgments only, it is evident that the concepts described by Hamilton as congruent may be of two different kinds. They may be such as we must necessarily unite in thought, or such as we may or may not unite according to circumstances.[2] Man and Animal are concepts of the former kind. The comprehension of the concept Animal being part of the comprehension of the concept Man, we see at once that the latter concept is inseparable from the former. They are so congruent that we cannot help judging and believing that all men are animals. But the concept Man and the concept Ten-feet-high are congruent in a different sense. They are *capable* of being united in thought, but we are not under any

[1] Lect. iii. 225-6.

[2] This distinction is indeed essential to a philosophy which, like Hamilton's, distinguishes between *à priori* and *à posteriori*—necessary and empirical—judgments. And as we shall see, it is recognized by Hamilton in his divisions of concepts, though he does not carry it on to his theory of judgments.

necessity of uniting them: or if it be said that whenever concepts capable of being united in thought are brought together in the mind, we in fact unite them and form a judgment; we are at all events under no necessity of believing the judgment so formed, and may indeed doubt or disbelieve it. If we judged universally that all men are ten feet high or that all objects ten feet high are men, these judgments would be disbelieved as inconsistent with the most ordinary experience. But if we judged that some men are ten feet high, there are recorded instances of giants approaching sufficiently near to that standard to render the proposition credible, and the proper position of the mind in regard to it would probably be one of doubt. Hamilton however has omitted to notice this distinction in his theory of judgments, and often speaks as if the recognition of the congruence of two concepts (that is, of their capability of being united in thought) was sufficient not only for the formation of the judgment, but also for our belief in it. He had three courses open to him, none of which he seems to have definitely adopted. First, he might have defined congruent concepts not as those which *may*, but as those which *must*, be united in thought: in which case, however, he could not divide all concepts into the two classes congruent and conflictive without denying the possibility of synthetical or ampliative judgments *à posteriori*. Secondly, he might have expressly told us that he was merely considering judgments or propositions in themselves, as distinguished from the belief in them, and that the recognition of the congruence of two concepts was sufficient for the formation of a judgment, though not for our acceptance of it as true. Or lastly, he might have stated that in order to form a judgment, the two concepts compared must be congruent in their extensions, and that this congruence of extensions required that they should be capable of being united not merely in thought but also in

presentation. The last solution I suspect approaches most nearly to Hamilton's real opinions. But, in fact, the division of concepts into congruent and conflictive is objectionable. There are three classes of concepts not two, viz. those which must be united in thought, those which cannot, and those which may or may not, according to circumstances.[1] With regard to this latter class a partial uniting and partial disuniting often takes place simultaneously. We judge simultaneously that Some Men are Black and Some Men are not Black; and if we are to base the distinction of judgments into affirmative and negative upon the division of concepts into congruent and conflictive, we must apparently describe the concepts Man and Black as both congruent and conflictive.

Elsewhere, as we have seen, he describes the relation between the concepts which form the subject and predicate of a judgment as one of whole and part, and hence he has sometimes been understood as asserting that two concepts were only congruent when one formed a part of the other. But in the face of his explicit statements that this relation of whole and part may exist between the extensions of the two concepts, this interpretation seems inadmissible. That the relation of whole and part exists between the extensions of the subject and predicate of an affirmative proposition is undeniable, at least, if we use the word "part" in a sense wide enough to take in the case of two co-extensive or coincident wholes. Every B is C, asserts that the extension of B is a part of the extension of C. Thus explained the theory appears unobjectionable. The difficulty is to reconcile it with the previous theory of congruence. If the comprehensions of two concepts are quite

[1] Accordingly, before dividing concepts into congruent and conflictive, Hamilton divides them into Identical (or rather Cognate) and Different; but he seems to have forgotten the former division when he came to treat of judgments, though it is on it that Analytical Judgments should apparently have been based. See p. 144.

distinct from, but not inconsistent with, each other, are these concepts to be classed as congruent or as conflictive, according as we find by experience that the extension of one does or does not form a part of the extension of the other? Possibly Hamilton might have replied that in the extension of a concept he included its imaginary, as well as its real, extension—that under the concept Serpent, for instance, he included dragons as well as really existing serpents—and that any two concepts that could be united in thought must possess an imaginary, if not a real, extension in common. He sometimes speaks, however, as if the relation of whole and part in extension always corresponded (though, of course, inversely) with the same relation in comprehension. He speaks as if the truth of the proposition Every B is C implied that the comprehension of the concept B contains or includes the comprehension of the concept C. Thus Man is Two-legged means, according to Hamilton, either that (the concept) Man includes the attribute Two-legged, or that (the class) Man is included in the class Two-legged (or as in this case he prefers to write it, the class Biped),[1] and he employs this instance to explain the

[1] Hamilton's distinction between judgments in comprehension, and judgments in extension seems of little importance. Every judgment can, as he tells us, be read in both ways. But when the predicate is an adjective, our attention is more immediately directed to its comprehension as an attribute belonging to, or as Hamilton would say, contained or included in, the subject; while when the predicate is a substantive, our attention is chiefly directed to its extension, as a class containing or including the subject under it. In the English language the subject is always a substantive, and thus its extension, rather than its comprehension, would seem to be always the primary object of attention; but Hamilton seems to think that in this respect it follows the predicate, so that when the predicate is an adjective, the judgment primarily expresses the relation between the comprehensions of the two concepts, while when the predicate is a substantive, the judgment primarily expresses the relation between their extensions. And he sometimes describes this relation in both cases

nature not of Analytical or Explicative Judgments in particular, but of judgments in general. We can hardly suppose that in this and similar passages, he employs the term concept and its equivalents in the vague sense in which they refer to the extension as well as the comprehension of the general name, for he is speaking of the relations which exist between the comprehensions of the subject and the predicate.[1] There is indeed one mode of interpretation in which we may regard the comprehensions of the subjects and predicates of all affirmative propositions as standing to each other in the relation of whole and part. We may understand All Men are Mortal as a short expression for All Men are Mortal-men, and All B is C as a short expression for All B is C-B. In this case the comprehension of the predicate is always a whole of which the comprehension of the subject is a part, and, understanding *part* in the wide sense already mentioned, the corresponding relations as regards extension would also hold good. This, however, cannot be Hamilton's meaning, for he states that in comprehension the subject is the whole and the predicate the part. I cannot, therefore, profess to have given a complete explanation, or complete defence, of the theory. There can be no doubt, however, that if Hamilton had written a formal treatise on Logic after he had adopted the theory of the Quantification of the Predicate, this part of his exposition would have been largely altered. As regards extension, at least this latter theory abolishes the relation of whole and part,

as one of whole and part, though, of course, the wholes and parts are inverted when we pass from comprehension to extension or *vice versâ*.

[1] Nay, the quantity of extension is sometimes even made to depend on that of comprehension. See Lect. iii., 218. But perhaps Hamilton is there speaking of the comprehension and extension of a single concept, rather than of the mutual relations of two concepts in comprehension and extension.

and replaces it by one of equation, or rather identification. The subject will be dealt with in the next chapter.

In Hamilton's discussion of the Feelings or Emotions the only point specially worthy of notice is his Theory of Pleasure and Pain. Pleasure, according to him, always accompanies the exercise of a perfect energy, while pain similarly attends on an imperfect one. Instead of "energy," we might perhaps substitute "state of consciousness;" for Hamilton tells us that he uses the former term to include mixed states of action and passion, while he is of opinion that no state of consciousness is purely passive. The imperfection of an energy is twofold—it may be repressed or over-strained—it may be in excess or in defect—and this again may be an excess or defect either in degree or in duration. Nay, since the mind is capable of exerting more than one energy, and of attending to more than one object, at the same time, a third kind of imperfection is possible. The mind may either attempt to embrace too many things at once, or the objects of consciousness may be too few to occupy it fully. In either of these cases the resulting feeling is painful. But in all cases when the energy is spontaneous and unimpeded it is pleasurable. When forced or impeded it is painful.

This theory, like many others, has been made the subject of adverse criticism. What, it is asked, is the test of the perfection of an energy? And if no test can be assigned except the resulting pleasure, then it is said that the law in question is a merely verbal one. Pleasure is the concomitant (or the effect) of a perfect energy, simply because we only *call* the energy perfect when pleasure results from it; and pain is likewise the concomitant of an imperfect energy, merely because when the energy results in pain we choose to *call* it imperfect. But there seem to be some consequences of the theory by which its truth may be tested, and an examination

of these results will be found, on the whole, favourable to it. First it follows from the theory, that every pleasurable feeling or state of consciousness will become painful if its intensity is sufficiently increased, or its duration sufficiently prolonged. This appears to be the case; and it will also be admitted that when we are bent on any particular kind of enjoyment the constant intrusion of fresh ideas is a source of annoyance, even though we might have derived pleasure from them under different circumstances. An excess in the extensive quantity of our mental energies is thus disagreeable. Secondly, it follows that every pleasurable feeling may be so weakened, or so shortened in duration, as to be productive of pain instead of pleasure. Where, however, it is weakened, it will only produce this painful feeling provided it continues to be the principal object on which our attention is concentrated; for if it is allowed to slip into the background while a new and interesting object occupies the foreground, the resulting feeling will, on the whole, be one of pleasure. In general the extensive quantity of our mental energies must always be taken into account, as well as their intensive and protensive quantities. With this qualification our second consequence seems to be verified by experience. The abrupt termination of a pleasurable feeling, while still tolerably intense, is always painful, though the feeling which causes the interruption may not be so in its own character: and there is hardly, for instance, an agreeable article of food which may not be rendered unpleasant by simply diluting it with a sufficient quantity of a tasteless fluid like water.[1] A third consequence of the theory is that many painful feelings will become pleasurable when their

[1] Brevity, it has been remarked, is the soul of wit; and how often is the pleasure which we derive from some terse and powerful sentence, changed to disgust on reading a lengthy paraphrase. These facts admit of the same explanation.

intensity is sufficiently lessened, or their duration sufficiently diminished; that many others will become pleasurable when their intensity or duration is sufficiently increased; and that all painful feelings will fall either into the former or the latter of these classes. Here again a good deal may be said for the theory, though much remains to be done before *all* pains can be brought under either of our classes. It is to be recollected, however, that some of our feelings have got no names unless they exist in a degree which is painful—a fact which sometimes gives the Hamiltonian theory an appearance of paradox. It would sound very startling to allege, for instance, that a toothache might be so diminished in intensity as to produce pleasure instead of pain; yet I am not sure that we do not feel a pleasurable sensation in the tooth just as the toothache is ceasing. A pleasure of this kind is sometimes referred to contrast, or relied on to prove that pleasure is the mere negation or the absence of pain; but it may also be accounted for, by supposing that the sensation which had been painful passes through a pleasurable stage before finally vanishing.[1] It may be said, indeed, that on Hamilton's theory it ought to pass through a second painful stage before its disappearance. But this is only true, as already remarked, when it continues to be the principal object of attention. The feebleness of an energy produces no painful results, if other energies of a more vigorous character are simultaneously present. It may be observed that, if true, the Hamiltonian theory would afford a scientific basis for the precepts frequently laid down by practical

[1] After severe pain or any great over-straining of our powers, their spontaneous degree of energy—that degree which alone produces pleasure—will be unusually low. The pleasurable degree of a sensation or other feeling will in such cases be not far removed from the vanishing point. If it falls lower than this—when on Hamilton's theory it should again become disagreeable—it very soon sinks into latency.

Moralists. It would prove that moderation is the true road to earthly happiness, and that if pleasure is pursued too ardently and too exclusively it will not be attained. Work, but not over-work, would seem to be the most pleasurable condition for mankind. These observations will, I trust, satisfy the reader that the theory in question, whether true or not, is not merely verbal or unimportant.

CHAPTER VII.

LOGIC.

In dealing with Sir W. Hamilton's theory of judgments I have, to a certain extent, anticipated his views on the subject of Logic. He adopted a strictly formal view of the nature of that science which he defines as "the science of the laws of thought, as thought," or the science of "the formal laws of thought"—those laws of thought which are alike applicable to all the products of the thinking faculty, which are not limited to any special subject-matter, and which are universal and necessary. Thought, which forms the subject-matter of the science, is to be distinguished both from the presentations of the senses and the representations of the imagination. It is a general name for the products of the Elaborative Faculty, as described in the Lectures on Metaphysics—a faculty whose sole function is comparison, and whose three great products are Conceptions (or rather Concepts), Judgments and Reasonings. As the mental operations can seldom be wholly separated from each other, an act of thought in which no other faculty has intervened may, perhaps, be impossible, and the laws and limitations of other mental faculties operate conjointly with the laws of thought in almost all the products of that faculty: but though some account of these may be taken in what is termed Modified Logic, in Pure Logic we must abstract from them altogether. A concept is a general notion, the nature of which had been already explained in the Lectures

on Metaphysics; a judgment, as we have also seen, expresses a relation of congruence or confliction between two concepts; and a reasoning again arises from a combination of two judgments. Such are the products of thought with which Logic deals, and the formal laws which govern the several operations of thought are the principles of Identity, Contradiction (or Non-contradiction), and Excluded Middle, which Hamilton regards as three different phases of the same fundamental law. To these, in his Lectures on Logic, he adds the principle of Sufficient Reason, or of Reason and Consequent—to which he attributes the form of the Hypothetical Syllogism.[1] In his Discussions, however, he states that the only principle of Sufficient Reason which should be employed in Logic is derived from the other three, to which we may therefore confine our attention.[2] They apply alike to concepts, judgments, and reasonings, but their application to the two former is not so obvious, and it cannot be said that Hamilton has fully explained it. The principles of Contradiction and Excluded Middle can, it is true, be easily applied to concepts, but their use is merely negative. They declare the invalidity of an alleged concept which comprises both or neither of two contradictory attributes, but as regards the formation of concepts they do not offer us any assistance. The principle of Identity, according to Hamilton, "expresses the relation of total sameness in which a concept stands to all, and the relation of partial sameness in which it stands to each, of its constituent characters. In other words it declares the impossibility of thinking the concept and its characters as reciprocally unlike."[3] This, again, does not explain the formation of *concepts*. In fact it seems only applicable to *judgments*, in which we affirm the existence of a relation of total or partial same-

[1] Lect. iii. 337. [2] Discussions, 160, note, 603.
[3] Lect. iii. 80.

ness between the concept and its characters. And accordingly Hamilton, after giving the symbolical expression of the law (A=A), goes on, "The law has likewise been expressed by the following formula—In the predicate the whole is contained explicitly, which in the subject is contained implicitly." This latter expression is clearly referable not to concepts, but to judgments, and is moreover limited to analytical or explicative judgments: and therefore we need not be surprised to find our author adding, "The logical importance of the law of Identity lies in this—that it is the principle of all logical affirmation and definition;" affirmations and definitions being, of course, judgments, not concepts. In like manner he says of the law of Contradiction (No A is non-A), "The logical import of this law lies in its being the principle of all logical negation and distinction";[1] and the law of Excluded Middle (whatever is not A is non-A), he remarks is "the principle of disjunctive judgments."[2] All

[1] Lect. iii. 82. The symbolical expression of this law is printed A = non-A = 0, and Mr. Mill comments on this misapplication of mathematical formulæ (*Examination*, 485). I should have thought that the misprint was obvious to any commentator. The true expression of course is A + non-A = 0, which is identical in meaning with the alternative form A − A = .0

[2] Lect. iii. 84. Hamilton gives no symbolical xpression for the law of Excluded Middle. That which naturally occurs to us is, A + non-A = ∞ (or A − A = ∞) which is mathematically untrue, and also apparently conflicts with the symbolical expression of the Law of Contradiction, viz., A + non-A = 0, or A − A = 0. This latter conflict, however, is only apparent, and arises from the fact that the latter formulæ relate to comprehension, and the former to extension—quantities whose variations are usually of an inverse character. But the fact that both these quantities must be regarded in Logic, renders the application of Algebraical formulæ to that science difficult, if not impossible. If A stands for an attribute or collection of attributes, the equations into which it enters will be very different from those which affect it when it stands for a class or collection of objects.

these passages occur when our author is explaining the relation of these principles to concepts, and he has not, I believe, anywhere endeavoured to show that the formation of concepts is affected by the laws of Identity, Contradiction, and Excluded Middle, otherwise than negatively—unless, indeed, with Dean Mansel, he regarded all analytical or explicative judgments as reducible to concepts—all veritable judgments being thus synthetical or ampliative. A circumstance already alluded to might almost lead us to think that such was his real opinion. In the twelfth of his Lectures on Logic he begins by giving two distinct divisions of concepts, viz. into Identical (or rather Similar or Cognate) and Different, and into Congruent and Conflictive; but when he proceeds to define a Judgment in the thirteenth Lecture, he explains it as the recognition of a relation of congruence or confliction only, without taking any notice of the other relation of cognateness or difference. If this similarity or cognateness is the same with the partial identity which he has elsewhere noticed as existing between a concept and each of its characters (which it appears to be), all affirmative analytical judgments express a relation of cognateness instead of a relation of congruence: and in describing affirmative judgments as recognitions of congruence only, Hamilton seems to be confining his attention to those which are synthetical or ampliative. Other passages of his descriptions, however, are, as we have seen, not only applicable to analytical judgments, but apply to them so exclusively that we might imagine that they were the only kind of judgments which he recognized. A different explanation of the application of the laws of Identity, Contradiction, and Excluded Middle to concepts may perhaps be derived from the following passage: "A concept is a judgment: for on the one hand it is nothing but the result of a foregone judgment, or series of judgments, fixed and recorded

in a word—a sign—and it is only amplified by the annexation of a new attribute through a continuance of the same process. On the other hand, as a concept is thus the synthesis or complexion, and the record I may add, of one or more prior acts of judgment, it can, it is evident, be analyzed into these again. Every concept is, in fact, a judgment, or a fasciculus of judgments—these judgments only not explicitly developed in thought, or formally expressed in terms."[1] This observation may justify the statement that the laws of Identity, Contradiction, and Excluded Middle, are the fundamental laws of all three operations of thought; but then it is only through their application to judgments that we can bring concepts under their authority.

The theory of judgments has been already examined, but the question remains, How can these three laws of thought be applied to them? The law of Identity, we have been told, is the principle of all logical affirmation, but it applies only to analytical judgments. The law of Contradiction, we have heard, is the principle of all logical negation. Its application is equally limited. The law of Excluded Middle has been described as the principle of disjunctive judgments, but it clearly applies only to those disjunctive judgments which are

[1] Lect. iii. 117. This description seems to me unsatisfactory. Take the concept Man, which is generally represented as equivalent to the combination Rational-Animal. According to Hamilton, this concept is the result and record of a judgment in which we affirmed a relation between the concepts Rational and Animal; and that relation is now implicitly contained in the concept Rational-Animal (or Man), and can be extracted from it by analysis. What then was the relation in question? Was it, All Rationals are Animals, Some Rationals are Animals, All Animals are Rational, or Some Animals are Rational? Any one of these four judgments would have led us to form the concept or combination Rational-Animal, and that concept would be exactly the same in whichever of these modes it was formed. How, then, can we, by a mere analysis of the concept as it now exists in the mind, discover any of these judgments in it?

analytical. It shows the truth of a disjunctive judgment of the form Every B is either C or non-C, but it has no bearing on the truth or falsity of a disjunctive judgment of the form Every B is either C or D, where D is a term really distinct from non-C. It is true that these laws appear to have a wider scope in the case of judgments than of concepts. Besides their negative use in excluding absurd or self-contradictory judgments, they have a positive use in showing the truth of analytical judgments. But what of the most important class of judgments—the synthetical or ampliative? Are we to exclude these from our catalogue of "logical affirmations" and "logical negations"? or can they be brought in some indirect manner under the primary logical laws? This difficulty was not unnoticed by Sir William Hamilton. In one of his latest writings, when pointing out the defects of these laws (which, as already remarked, he regards as different phases of the same law), as a criterion of truth, he says, "1. It is negative, not positive. It may refute, but it is incompetent to establish. It may show what is not, but never of itself what is.[1] It is exclusively logical or formal, not metaphysical or real. It proceeds on a necessity of thought, but never issues in an ontology or knowledge of existence." Again, "3. It is explicative, not ampliative. It analyzes what is given, but does not originate information or add anything, through itself, to our stock of knowledge. 4. But, what is its principal defect, it is partial, not thoroughgoing. It leaves many of the most important problems of our knowledge out of its determination, and is therefore all too narrow in its application as an universal criterion or instrument of judgment."[2] And in another passage he says that thought under this condition of non-contradiction is

[1] This would seem even to go beyond what I have said in the text, and to deny its use in showing the truth of affirmative analytical judgments.

[2] Lect. ii. 524.

"merely explicative or analytic,"[1] and cannot therefore (we may presume) give rise to synthetical judgments. Both these passages, however, were written long after the Lectures on Logic; and the distinction between analytical and synthetical judgments not having been noticed in these Lectures, the difficulty does not appear to have then presented itself to the author; while we can hardly expect to find a satisfactory solution of it in the subsequent fragmentary notices, which in their existing shape were probably not intended either for delivery or publication. One solution, indeed, readily suggests itself. The only logical judgments, it may be said, are analytical judgments, and these result directly from the three primary laws of thought. In all synthetical judgments some other faculty intervenes, and, as regards their formation, they are not within the province of Pure Logic. But Pure Logic must nevertheless deal with them in their character of products, because they furnish materials for the third great operation of thought—reasoning; and the reasonings for which they supply the premisses, depend as exclusively on the primary laws of thought as if the premisses were analytical. Non-logical judgments must therefore be taken into account in Logic, because they supply materials for logical reasonings; but non-logical (or inconclusive) reasonings should be omitted from Logic, because they do not furnish materials for any higher operation of thought. I have not, however, found this explanation in Sir William Hamilton's writings, while there are several passages, especially in his Lectures on Logic, which would seem to imply that all judgments are analytical or explicative, and thus come directly under the primary laws of thought. For instance, when comparing the comprehension and extension of concepts, he says, "The quantity of extension is a creation of the mind itself, and only created

[1] Discussions, 603.

through, as abstracted from, the quantity of comprehension; whereas the quantity of comprehension is at once given in the very nature of things. The former quantity is thus secondary and factitious, the latter primary and natural."[1] If this be so, it is only when the comprehension of one notion includes that of another, that we can judge that the extension of the former is contained in that of the latter; and therefore it is only in the case of analytical judgments that we can affirm the total or partial coincidence of the extensions of the subject and predicate. This would exclude affirmative synthetical judgments altogether, unless we suppose that Hamilton was speaking of the relations between the two quantities only in so far as they can be determined by pure thought, without any reference to experience.

Another solution, however, is suggested in Hamilton's Lectures, and has been apparently adopted by Dean Mansel, whose exposition of a similar theory of Pure Logic, in the sixth chapter of his Prolegomena Logica, will be found in some respects superior to that of his master. (Hamilton has referred to this work in terms of approval.) "If two notions," says Hamilton, "be judged congruent—in other words, be conceived as one"—(and he has just told us that this occurs in every judgment) "this their unity can only be realized in consciousness, inasmuch as one of these notions is viewed as an attribute, or determination, of the other. For, on the one hand, it is impossible for us to think as one, two attributes—that is, two things viewed as determining, and yet neither determining or qualifying the other; nor, on

[1] Lect. iii. 218. The dependence of the quantity of extension on that of comprehension is, however, a common doctrine of logicians who have frequently assumed in their expositions that all judgments are analytical. Hamilton may not impossibly have taken this doctrine from them without sufficient examination, and without being himself influenced by it in any other portion of his philosophy.

the other hand, two subjects—that is, two things thought as determined, and yet neither of them determined or qualified by the other. For example, we cannot think of the two attributes *electrical* and *polar* as a single notion, unless we convert one of these attributes into a subject to be determined or qualified by the other; but if we do—if we say, *what is electrical is polar,* we at once reduce the duality to unity—we judge that *polar* is one of the constituent characters of the notion *electrical,* or that what is *electrical* is contained under the class of things marked out by the common character of *polarity.*"[1] It is true that the alternative in this last sentence may suffice to distinguish Hamilton's doctrine from that of Mansel, though, if the relation between the quantities of extension is determined by that which exists between the quantities of comprehension, it would not do so. To understand the passage rightly, however, I think we must regard the word *notion* as used in the vague signification already alluded to. If that word is employed in its strict sense, it is obvious that my *notion* of electrical or electricity could not have any constituent character which I was not previously aware of. Its constituent characters are its comprehension; and if polarity is not included in this comprehension, it is not one of the constituent characters of the notion electrical. But the meaning seems to be, that we first recognize *polarity* as one of the constituent characters of the *thing* (or class of things) *electrical* or *electricity:* and *then,* since we always endeavour to make our notions or concepts correspond with the things to which they are applicable, we reform or enlarge our *notion* of *electrical* or *electricity* by *adding* to it the attribute or notion of *polarity.* What was formerly thought as *electrical* is now thought as *polar-electrical;* and the judgment *what is electrical is polar* has been transformed into *what*

[1] Lect. iii. 227.

is polar-electrical is polar, the truth of which latter judgment is at once made manifest by the law of Identity. In fact, by this amplification of the concept *electrical* (and concepts may retain their names notwithstanding the enlargement of their comprehensions) the synthetical judgment has been converted into an analytical one. Synthetical judgments are thus only analytical judgments in the making, and the ultimate end of all processes of reasoning is the reformation and amplification of our concepts.[1] If it is objected to this, that when the judgment was *first* formed, its truth must have been arrived at in some other way than by the law of Identity, the answer would probably be, that the process by which it was arrived at was not one of pure thought, and that as soon as the judgment *what is electrical is polar* came to express a veritable operation of thought, its truth became manifest by means of the law of Identity alone. This theory, however, not having been explicitly enounced by Hamilton, need not be further discussed here. I will only say, that granting that the two notions must become combined, in the manner stated, in order to constitute a judgment, the combination may take place in a different way, which would leave the distinction between analytical and synthetical judgments unaffected. If instead of the subject becoming amplified by the addition of the predicate, the predicate itself remaining unaltered, the subject remained unaltered while the predicate was amplified by the addition of the subject, the judgment would still be synthetical, and the law of Identity would not suffice to establish its truth. *What is polar-electrical is polar* is a judgment which falls under that law; but *what is electrical*

[1] Neither Hamilton nor Mansel have gone so far as this in any of their published writings, and the last sentence is borrowed partly from Mr. Lewes, and partly from Archbishop Thomson, the latter of whom has, to a large extent, adopted the Hamiltonian view of Logic.

is polar-electrical does not, except negatively. Yet in each of these judgments the duality of the two notions *electrical* and *polar* is equally reduced to unity.

The theory of the Quantification of the Predicate belongs rather to reasonings than to judgments, because its principal effects appear in the doctrine of the Syllogism. This, however, is the most convenient place for giving some account of it.

In the four forms of categorical judgments or propositions ordinarily recognized by logicians, which are denoted by the letters A, E, I, and O, the subjects are quantified, but the predicates are not; and the latter might therefore appear to be at first sight susceptible of being understood with two different quantities, and thus in two different senses. For instance, All B is C may be understood to mean either All B is *all* C or All B is *some* C; and No B is C may be understood to mean either No B is *any* C or No B is *some* C.[1] Logicians had in general laid down that All B is C meant All B is some C, and that No B is C meant No B is any C. But this, Hamilton thinks, may not have been the meaning intended by the persons who used these forms of expression; while even if it was, they should not be debarred from the use of *other* forms of expression which would convey a different meaning. A man may judge, or wish to assert, that two classes are co-extensive. Why not then permit him to affirm that All B is *all* C? Or, instead of denying that any B is a C, he may only wish to deny that any B is *some* C; instead of denying, for instance, that any man is an animal, he may wish to deny that any man is some kind of animal—that any man is a quadruped. Then why not permit him to say that No man is *some* animal? Carrying out this idea, Sir William Hamilton proposed to

[1] But surely no one would say No B is C if he only meant, or only believed, that No B is *some* C. No Man is immortal, seems to me to be quite as unambiguous a statement as, No man is *any* immortal.

increase the number of propositional forms from four to eight, which are thus expressed symbolically :—

(1) All B is all C	denoted	by the letter	U
(2) All B is some C	,,	,,	A
(3) Some B is all C	,,	,,	Y
(4) Some B is some C	,,	,,	I
(5) No B is any C	,,	,,	E
(6) No B is some C	,,	,,	η
(7) Some B is not any C	,,	,,	O
(8) Some B is not some C	,,	,,	ω

Of these the affirmatives, in fact, express equations, and the negatives inequalities. Thus U may be written All B = all C, and A may be written All B = some C.[1] All propositions become simply convertible; for the conversion of affirmatives consists in merely writing the same equation in a different way, and inequalities are also convertible, since if B is not equal to C, it follows that C is not equal to B. And since they are simply convertible, they all reappear in their original shape after reconversion. Thus A is convertible into Y, and this Y can be reconverted into an original A, and then again into Y, and so on as often as we choose to repeat the process. When the predicates are thus quantified, the extensions of the subject and predicate no longer stand to each other in the relation of whole and part. They are always (in affirmative propositions) equal, or rather identical. This alteration gives a completely new direction to the doctrine of the Syllogism. The number of legitimate modes in each figure[2] is augmented to thirty-six, of which twelve are affirmative and twenty-

[1] These equations seem to express relations of extension only, whereas the formula of the law of Contradiction for instance is only true of comprehensions. See note, p. 143.

[2] Hamilton, however, rejects the fourth figure on the ground that it is merely the first figure with the premisses transposed, and the immediate conclusion converted. Thus EIO of the fourth figure is but a bad way of writing 1Eη of the first.

four negative. The latter may be derived from the former by changing the affirmative copula of each premiss successively into a negative copula, and making the same change in the conclusion.[1] The twelve affirmative modes are derived from the sixteen pairs of affirmative premisses by rejecting those in which an undistributed middle occurs, and supplying the proper conclusion to the remaining pairs. The pair of premisses II involves an undistributed middle in every figure. The pairs IA, YA and YI do so in the first figure, and those which do so in the other three figures will be found by performing the conversion or conversions necessary to change the illegitimate pairs IA, YA and YI from the first into the other figures. For every syllogism in the first figure, whether good or bad, has its exact counterpart in each of the other three. By simply converting the major premiss we obtain a precisely equivalent syllogism in the second figure; by simply converting the minor premiss we obtain one in the third; and by simply converting both premisses one in the fourth. The real number of valid modes would thus seem to be thirty-six rather than 144, though there are four ways of stating each of these thirty-six; and the letters standing for the syllogism will sometimes differ with the mode of stating it. Thus AAA of the first figure—the Barbara of the Aristotelians—becomes YAA in the second, AYA in the third, and YYA in the fourth, figures respectively. The whole scheme is worked out by a series of operations resembling those of algebra. It will be seen, however, that two of the new propositional forms, Y and η, are merely two new modes of expressing the old ones A and O. We can convert A into Y, and Y again into A, thus proving the virtual identity of the two; and, indeed, no

[1] Where both premisses are negative, no conclusion can be drawn; as is also the case where the middle term is undistributed. To this extent the Hamiltonian Logic agrees with the Aristotelian.

one could doubt that All B = some C and some C = all B represent the very same equation written in two different ways. The same observation applies to η and O; and on the identity of these two forms with the other two recognized by all logicians, two counter-arguments for and against their admissibility into Logic are based. The Hamiltonian asks, Why not permit me to make in one form the very same assertion that I must confessedly be allowed to make in another? The Aristotelian asks, Why, when I am trying to reduce all propositions to the smallest number of simple forms, should I admit two new ones which assert nothing that cannot be equally asserted by the old ones in common use? And here a very curious cross-argument might arise. The Hamiltonian might say, You ought to admit the two new forms, because they enable you to bring at once under the *Dictum de omni et de nullo*, syllogisms which you are only able to reduce to that principle by the tedious and roundabout process of *reductio ad impossibile*. The Aristotelian could answer, You ought not to admit them, because you reduce all syllogisms to a series of simple equations, and every consequence that arises from such equations when written in one order equally follows from them when written in the other. No algebraist was ever yet assisted in solving a problem by writing his fundamental equation $mx = ny$ instead of $ny = mx$. As soon as one quantity is expressed in terms of the other, no further transformation of the equation is required; and this is done when we put the proposition, as expressed in ordinary speech, into either of these logical forms.

It is obvious to remark that this quantification of the predicate is only applicable to its extensive quantity, though Hamilton's language might sometimes lead the careless reader to suppose the contrary. Every concept employed in a logical proposition is taken in its whole comprehension.

When I say Negroes are some Men, I mean that Negroes are some of the beings which possess *all* the attributes included in the comprehension of the concept Man; and if I said that Negroes are *all* Men, the word "all" would not be used to imply that Negroes possessed all the attributes included in the comprehension of the concept Man (which would be equally asserted if the predicate was quantified particularly or left unquantified), but to imply that Negroes included the whole *extension* of the concept Man. If I meant to affirm of Negroes a part of the comprehension of the concept Man only, I would not employ the term Man, but some other term or terms connoting the particular part of the comprehension which I desired to predicate. I would say, for instance, that Negroes were bipeds, or mammals, or vertebrates, or animals, or organized beings, as the case might be; but if I said they were men, I could only be understood as asserting that the whole comprehension of the concept Man was to be found in them. When, therefore, we find Hamilton using such expressions as, All Man is some Animal, we must not suppose that by the use of the singular number and the capital letter he means to direct attention to the comprehension instead of the extension—to the concept in the mind instead of the class of things which come under it. In fact, if the signs of quantity could be taken in connexion with comprehension, the proper expression for the last-mentioned proposition would be, All Animal is some Man—meaning that the whole comprehension of the concept Animal is included in, and forms a part of, the comprehension of the concept Man. Sir William Hamilton has never given this meaning to his quantified propositional forms, and it would be a very wide departure from common language to do so. All Man is some Animal with him means (as in more than one passage he has stated) All (class) Man is some (class) Animal, not All (concept) Man

is some (concept) Animal. The theory of the quantification of the predicate is for this reason somewhat difficult to reconcile with the passages in Hamilton's works, in which he describes judgments as arising from the comparison of concepts, and as consisting in the recognition of a relation of congruency, or even of whole and part, between them. It is to be recollected, however, that all these passages were written before the theory of the quantification of the predicate was formally enounced by the author, and I have little doubt that had he been able to revise his Lectures on Logic, his theory of Judgments would have been entirely rewritten.

It should be added that in his Propositional Forms, Sir William Hamilton thinks "some" should be used in the sense of some *only* instead of some *at least*.[1] For if All Bs are Cs, they must either be all Cs or some Cs *only;* and since in the former case I ought to quantify the predicate universally, the particular quantification ought to be limited to the case in which All Bs are some Cs only. Whenever we think of the class as a whole, we should employ the term All; and therefore when we employ the term Some, it is implied that we are not thinking of the whole, but of a part as contradistinguished from the whole—that is, of a part only. This, as Sir William Hamilton points out, is not the meaning which logicians generally attach to the word "some;" and for this reason the Propositional Form, which Hamilton calls A, for instance, does not precisely correspond to that which the Aristotelians denote by the same letter. The proposition All B is C with the Aristotelians is consistent with the coextensiveness of the two classes B and C, though it does not assert it. It is thus consistent with the proposition All C is B, or with the U of Hamilton. But Hamilton's proposition All B is *some* C means that All B is some C only—that C is a

[1] Discussions, p. 690, text and note.

larger class in which B is included—and it is therefore inconsistent with the Aristotelian All C is B, as well as with both the Hamiltonian propositions All C is all B, and All C is some B. Thus A and A converse, with Hamilton, cannot both be simultaneously true. Again, if we take the form O, Some B is not any C would, if *some* is taken to mean some only, imply that there are *other* Bs which *are* Cs—an assertion which is not implied by the Aristotelian form, Some B is not C, though it is consistent with it. Accordingly Hamilton recognizes an inference from O to I, and *vice versâ*, which he terms Integration. But, curiously enough, the two systems coincide with respect to the form I. Some B only is C, would indeed imply that there are other Bs which are not Cs; but the Hamiltonian form is, Some B (only) is some C (only), which is quite consistent with the *other* Bs being *other* Cs. The second *only* thus in fact neutralizes the effect of the first.[1] Hamilton, however, has not worked out the results of the quantification of the predicate from this point of view, nor has he given a complete sketch of the alterations which would be introduced into the rules of Logic by employing *some* in the sense of some only. Indeed this meaning of *some* does not occur in his Lectures on Logic.

I have already noticed some of the grounds assigned for the rejection of the new forms Y and η. I may add that U and ω have not escaped criticism. Of ω it has been said that it really asserts nothing, for though some Bs are not some Cs, still the very Bs, of which we are thinking, may be *other* Cs, and the two classes, B and C, may even be co-extensive. Such a proposition, moreover, appears to be meaningless when considered in comprehension. It neither affirms nor

[1] Hamilton, however, has not observed this fact, which seems to interfere with his new inference of Integration when drawn from I to O instead of from O to I.

denies that the some Bs which form its subject possess the attributes included in the comprehension of the concept C. Judgments—according at least to Hamilton's earlier theory—arise from recognizing the congruent or conflictive character of the concepts which form the subject and predicate: but the judgment, Some B is not some C, does not give us the smallest information as to whether the concepts B and C are congruent or conflictive. This last objection would, indeed, be removed by employing the word "some" in the sense of some only, as Hamilton proposes. If it is some Bs *only* that are not identical with the particular part of C of which we are thinking, there must be other Bs which are identical with (or contained in) that part of C. But a new objection now arises, namely, that what is really asserted by ω (on this interpretation of it), is that Some (other) Bs *are* some Cs, and that ω is therefore no more than a different way of writing I. Again, U has been objected to on the ground that it is a compound, not a simple proposition; that it includes two distinct assertions, which may be made the foundation of two different trains of reasoning—that All men are all rational animals, for instance, is the precise equivalent of the two propositions, All men are rational animals, and All rational animals are men. Hamilton's answer to this objection is not very satisfactory. Applying his own system of quantification, he substitutes for the two propositions in question, All men are some rational animals, and All rational animals are some men (of course his opponent could not quantify either of the predicates with the word All, for that would be to admit the propositional form U) and then taking *some* in the sense of some only, he shows that the two alleged components of his proposition U are in fact inconsistent with each other, and cannot be united in thought.[1] But as the Aristotelian does

[1] This seems to be involved in his answer to Mr. De Morgan, Discus-

not use the word some in the sense of some *only*, but of some *at least*, the two propositions in question would, notwithstanding the employment of that word in quantifying their predicates, be quite consistent with each other, and they seem to make up between them the whole of what is asserted by Hamilton's U. I do not think that Hamilton has anywhere asserted that All B is some C ceases to be a simple proposition when we use *some* in the sense of some at least.[1] In fact there would be much more reason for maintaining that it becomes a compound proposition if we use *some* in the sense of some only. But even conceding that All B is (some) C, as employed by the Aristotelians, is a compound proposition, this would not remove the present objection; for if U is made up of two compound propositions, it is even more objectionable than if it was made up of two simple ones.[2]

sions, p. 688; but possibly Hamilton intended this answer as a mere *argumentum ad hominem*. Mansel adopts a similar mode of reasoning. *Prolegomena Logica*, p. 268.

[1] Perhaps he would have sought to evade the difficulty thus. The Aristotelian proposition, All B is some C (at least) is equivalent to the two Hamiltonian propositions, All B *may be* all C and All B *may be* some C (only). The former of these is U and the latter A; for "*may be*" must be treated in Logic as an affirmative copula. The Aristotelian A is thus a compound, the Hamiltonian U being one of its components, and consequently any attempt to deduce the Hamiltonian U from two Aristotelian As (with the terms transposed) involves a circular argument.

[2] Hamilton asks why should All B is all C be treated as a compound proposition when it is admitted that All B is some C is not so? The Aristotelian, I believe, could answer the question. As All B is all C is made up of All B is C and All C is B, so All B is some C is made up of All B is C and Some C is B. But while the former pair are two distinct propositions not inferrible from each other, one of the latter pair can be derived from the other by conversion, and therefore the two component propositions are not distinct and independent. To justify this answer, however, it should be laid down that the predicate of a proposition never has any quantity—that is, while it remains a predicate—and that it *acquires* a quantity for the first time when it is transformed into a subject by

Hamilton believed that this theory of the quantification of the predicate involved the true explanation of the logical nature of an Inductive argument. The form of a logical Induction is in his opinion as follows:—

x, *y*, *z*, &c. (enumerating the individuals) are Cs,
x, *y*, *z*, &c. (enumerating the individuals) are *all* Bs,
Therefore All Bs are Cs.

That this reasoning is valid cannot be doubted, though it could hardly occur in practice, owing to the difficulty of making an individual enumeration of all the Bs. Nor if it did occur, would it be of much value, since the conclusion would be little more than a short way of writing the major premiss. The use of a proposition of the form All Bs are Cs, is in general to tell us that something that we have not already ascertained to be a C is so—which it does when we have first satisfied ourselves that the thing in question is a B, which fact is not always obvious. But if we arrived at the proposition All Bs are Cs, by the reasoning here set out, we could never discover as a new fact that anything was a B; for a knowledge of every individual B is presupposed by the reasoning. Neither from our recognition that a given thing was a B, could we be led as a new fact to conclude that it was a C; for we could not draw that conclusion until we were not only individually acquainted with every one of the Bs, but had likewise ascertained that each of them was a C.[1]

conversion. The quantity which is thus acquired is particular when the convertend is affirmative, and universal when it is negative. This, I believe, is the true meaning of the assertion that the predicate of an affirmative judgment is particular, and that of a negative universal—assertions which can only be understood in connexion with conversion.

[1] Suppose, in fact, that this (so-called) induction was followed by a deduction—

All Bs are some Cs,
β is a B,
β is a C.

It is here plain that β must have been one of the individuals included

That the inductions of the Physical or Empirical Sciences are not reducible to the Hamiltonian form, our author seems to admit; and it can hardly be said that the form in question is in common use. Its only use would therefore seem to consist in pointing out the insufficiency of the Aristotelian table of Syllogisms (and consequently of the Aristotelian list of forms of propositions) by giving an instance of a valid mode of reasoning which cannot be reduced to them. But the Aristotelian would probably reduce it to a Syllogism in Barbara by writing the minor premiss, All B is x, y, z, &c. Whether this reduction is satisfactory I must leave to the reader.[1]

The reduction of all judgments or propositions to equations (or rather identifications) between the subject and predicate in our x, y, z, &c., since otherwise it would not be true that x, y, z, &c. are *all* the Bs. The entire reasoning would therefore run as follows:—

x, y, z, β, &c. are some Cs,
x, y, z, β, &c. are all Bs.
$\therefore$ All Bs are some Cs.

β is a B,
$\therefore$ β is a C.

And we have got back to (a part of) what was stated, not in general terms or even specifically, but individually, in the major premiss of the induction. Whatever be the force of the objection to the Syllogism in general as containing a *Petitio Principii*, there can be no doubt of the futility of this kind of argument. In fact the major premiss of the induction sums up a number of singular propositions, the truth of each of which must have been separately inquired into and ascertained, and one of these singular propositions must have been β is a C, which is the judgment or proposition finally arrived at by this pretended process of reasoning.

[1] The best mode of reducing it would perhaps be as follows:—

Every B is either x or y or z, &c.,
x and y and z, &c. are Cs,
$\therefore$ Every B is a C.

This is a kind of disjunctive reasoning of which the Aristotelian logicians seem to have given a sufficient account.

renders the application of the laws of Identity, Contradiction, and Excluded Middle to the Syllogism more easy than under the Aristotelian system. The same result is still more evident in the case of immediate inferences, such as conversion; and therefore as regards the third logical operation—inference or reasoning—we do not meet with the same difficulties that were experienced in the case of concepts and judgments. No reasonings being admitted except those which are formally conclusive, thought is here really analytical or explicative. The conclusion contains nothing that is not contained in the premisses—not, indeed, in the major premiss, as some opponents of the Syllogism allege, but in the two premisses taken together—and the laws of Identity, Contradiction, and Excluded Middle, being the fundamental laws of explication or analysis, seem sufficient to account for the whole process.

Such is the Hamiltonian Logic. Its deficiencies, as already remarked, seem chiefly attributable to the fact that its author had not fully elaborated his logical theory when he wrote his Lectures on Logic, and that his subsequent writings on the subject took the shape of fragments—some of them posthumous—instead of a connected treatise. It has been rarely accepted in its entirety, but a large number of subsequent logicians have availed themselves of considerable portions of it. Thus Archbishop Thomson accepts Hamilton's additional affirmative forms of Propositions U and Y, while rejecting the negative forms η and ω, and he has, in consequence, developed a Syllogistic scheme differing both from that of the Aristotelians and that of Hamilton. No part of Hamilton's system required the revising hand of the master more than his Logic. If he had signalized the distinction between Analytical and Synthetical judgments, which in his later writings at least was clearly recognized, and at the same time consistently carried out his statement that comprehension

and extension are not two co-ordinate properties of the concept, but that comprehension is the primary one on which extension depends—that it is, in fact, the concept itself, while extension (at least real extension) is a contingent attribute of it—the Hamiltonian Logic must to a great extent have taken a new form, and the exposition of the theory of judgments would have been cleared of the ambiguities, difficulties, and inaccuracies which it now presents. It is, indeed, to Hamilton's life, rather than to his philosophy, that we must look for the explanation of these defects.

It will be seen from the foregoing sketch that incompleteness is one of the characteristics of the Hamiltonian Philosophy generally. For this, perhaps, the author was not to blame; and an incomplete system, provided it contains numerous points of interest and importance, is often more useful in arousing speculation than a complete one. When a system is completed its weak points are usually more or less concealed. Readers are either captivated by its symmetry, and accept it as a whole; or else, satisfied that as a whole it is erroneous, they reject it, without waiting to discover and signalize the joints in its harness. In an incomplete system, on the other hand, defects and inconsistencies generally appear on the surface: but if it has a real value which impresses itself on the student, the faculty of thought will be stimulated either to reconcile these inconsistencies and complete the system, or else to use the valuable materials collected by the author in the construction of a new system presumably different from his own. Accordingly, I believe that no philosophic writer of the present century has had the same influence in cultivating metaphysical speculation as Sir William Hamilton, nor perhaps is there any other in whose works so many important philosophical problems have been mooted, if not solved. "*Prudens interrogatio,*" says Bacon,

"*est dimidium scientiæ;*" and if Hamilton does not always propound his theories in the form of interrogations, they are not (even when erroneous) less valuable as steps towards a final solution. No Idealist, for instance, will deny that philosophy has gained much by having the problem of the external world set before us in the manner in which Sir William Hamilton has stated it. Everything seems now prepared for a final issue, and even if that issue should prove unfavourable to Natural Realism, to Sir William Hamilton will belong the credit of having compelled philosophers to decide it, and of having stated the case on which their decision was given. A philosopher who has left behind him nothing but well-stated problems may have rendered the world a greater service than one who has only attempted to furnish solutions, to say nothing of one who has confined himself to description and illustration. This, I think, was Hamilton's greatest merit,[1] and in dealing with his several theories I have generally aimed at stating them rather in the form of hypotheses, pointing out some of the arguments in favour of each hypothesis and some of the objections against it. And perhaps if the theories put forward by the various schools of Psychology were regarded as hypotheses, and if inquirers attempted to trace out the consequences of two or more rival hypotheses —not for the purpose of refutation, but of *bonâ fide* investigation—pointing out everything favourable and unfavourable to each, but without decidedly committing themselves to either, a final decision on their validity might be sooner arrived at. Physical investigators often do this. Why should not Psychologists?

[1] Hamilton himself regards the pursuit of truth, as a mental exercise, more valuable than the truth itself when discovered. See the first of his Lectures on Metaphysics. To have induced many inquirers to join in this pursuit would therefore be, in his opinion, the highest success that a philosopher could aim at.

APPENDIX.

Hamiltonian Literature.

Such has been the impulse which Hamilton has given to speculative thought in this country that to enumerate the various works in which some portions of his system have been vindicated or criticized—adopted or rejected—would require an erudition almost equal to his own. The reader, however, who desires to pursue the theories which he advocated to their latest developments, and to study the principal animadversions which have been made on them will obtain some information from the following list, which makes no pretension to completeness.

The great criticism on the Hamiltonian system is the late Mr. J. S. Mill's *Examination of Sir William Hamilton's Philosophy*. The first edition of this work appeared in 1865. The fourth edition—the last during the author's lifetime—was published in 1872. The later editions are much enlarged and improved, and contain answers to a number of writers who had defended Sir William Hamilton against the attacks made upon him in the first edition. This book has been frequently referred to in the text, even in some passages where Mr. Mill was not named.

Sir William Hamilton's most illustrious disciple was the late Dean Mansel, who, however, sought to unite with the Hamiltonian System some Kantian elements. His notes to his edition of *Aldrich's Logic* and his *Prolegomena Logica* (1851; but a considerably enlarged edition appeared in 1860) chiefly expand Hamilton's views on the subject of Logic. The latter, however, contains an able discussion on the subject of Necessary Truths, including Hamilton's doctrine of Causality. Dean Mansel's Bampton Lectures on *The Limits of Religious Thought* (1858) are intended as a development of the Hamiltonian doctrine of the Absolute and Infinite. Much of the Hamiltonian system is incorporated in his *Metaphysics;* and after the appearance of Mr. Mill's *Examination* he published *The Philosophy of the Conditioned*, which was intended as a reply to it. He subsequently published an article on the same subject in the *Contem-*

porary Review for September, 1867, which was answered by Mr. Mill in the last edition of his *Examination*.

In addition to a vast number of reviews (many of which are referred to in the note), Mr. Mill, in the later editions of his *Examination*, mentions the following works as called forth by his controversy with Sir William Hamilton in addition to Mansel's *Philosophy of the Conditioned*. (1) *The Battle of the Two Philosophies*, by an Inquirer. (2) *An Examination of J. S. Mill's Philosophy*, by Dr. M'Cosh, who afterwards contributed an article on the same subject to *The British and Foreign Evangelical Review* for April, 1868. (3) *A Criticism of John Stuart Mill's Pure Idealism*, by Mr. H. F. O'Hanlon. (4) *A Commentary on Kant's Critick of the Pure Reason*, by the Rev. J. P. Mahaffy. This work is a translation of Professor Kuno Fischer's Commentary, with an Introduction by Professor Mahaffy, in which the Hamilton-Mill controversy is dealt with. (5) *Recent British Philosophy*, by Professor Masson. The last edition of this work, dated 1877, is somewhat enlarged. He also refers to Mr. Alexander's *Mill and Carlyle*, but that work seems to relate more especially to Mr. Mill's own philosophy, an observation also partly applicable to the works of Mr. O'Hanlon and Professor Mahaffy. Mr. Mill also notices some criticisms comprised in Professor Veitch's *Memoir of Sir William Hamilton*.[1] To these I may add—

Sir William Hamilton: being the Philosophy of Perception; an Analysis, by Dr. J. Hutchinson Stirling.

Inquisitio Philosophica: an Examination of the Principles of Kant and Hamilton, by Mr. M. P. Bolton. Both these works appeared in Mr. Mill's life-time, and are referred to by him in the Preface to the later editions of his *Examination*.

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[1] He mentions also the following reviews:—*Mill* v. *Hamilton*, by Dr. H. B. Smith, in the *American Presbyterian and Theological Review* for January, 1866. A review of Mr. O'Hanlon's work in *Blackwood's Magazine* for January, 1866. A review of Mill's *Examination* in the *Dublin Review* for October, 1865, signed R. E. G. Another in the *Edinburgh Review* for July, 1866. Another in the *North British Review* for September, 1865, ascribed to Professor Fraser. One entitled *Mill* v. *Hamilton* in the *Fortnightly Review* for July 15, 1865, by Mr. Herbert Spencer. One in the *Westminster Review* for January, 1866, ascribed to the late Mr. George Grote. One in the *North American Review* for July, 1866, and one by Dr. Ward in the *Dublin Review* for October, 1871. Mr. Mill also refers to Dr. Ward's work on *Nature and Grace*.

Kant's Critical Philosophy for English Readers, by the Rev. Professor Mahaffy. In the first part of this work, which appeared during Mr. Mill's life-time, but was not noticed by him, Professor Mahaffy resumes the controversy from his former work, and replies to Mr. Mill's strictures. There are some further observations in the second part.

Notes on Mill's Examination of Hamilton's Philosophy, by Thomas Edwards. This work was published in Calcutta, thus affording evidence of the wide-spread interest occasioned by the controversy. It appeared in 1878.

Religious Progress, by the Rev. Dr. M'Ivor. In the notes to this volume a more extreme theory of Natural Realism than that of Hamilton is expounded, and the theories of Hamilton and Mansel are criticized. It appeared in 1871. I have myself advocated a modified doctrine of Natural Realism in a work on *Space and Vision* (1872).

Mill v. *Hamilton*, by T. Collyns Simon—an idealist of the Berkeleian type.

Among the logical treatises most largely influenced by Sir William Hamilton, and also containing criticisms on his theory of Logic, I should notice Archbishop Thomson's well-known *Outline of the Laws of Thought*. Also Professor Spencer Baynes's *Essay on the New Analytic of Logical Forms*. Of course almost every subsequent writer on Logic has had occasion to refer more or less to the Hamiltonian doctrine. Some criticisms on it will be found in my own *Introduction to Logic* (1880).

I should not conclude this Appendix without noticing a pamphlet on *Sir William Hamilton* by Dr. Thomas Maguire, which was published several years before Mr. Mill's *Examination;* nor ought I to omit Dr. Calderwood's *Philosophy of the Infinite*, published in Hamilton's life-time.

GLOSSARY OF PHILOSOPHICAL TERMS.

ABSOLUTE. This word has more than one meaning. Sir William Hamilton proposes to use it in the sense of that which is finished, perfected, or completed; in contrast to the *Infinite*, which can never be completed. He notices as another meaning, the opposite of the *Relative*, viz., that which does, or at least *can*, exist out of relation, whether to the thinking mind or to anything else. Other philosophers used the terms *Absolute*, *Infinite*, and *Unconditioned*, as identical in meaning, and as referring to the ultimate being or first cause. This employment of the term Hamilton thinks objectionable, though in arguing against his opponents he finds himself occasionally compelled to adopt it. In this third sense Absolute is opposed to *Conditioned*.

ABSOLUTE (IDENTITY). Sir William Hamilton gives this name to the system which holds that the thing which we perceive and the mind which perceives it are both fundamentally the same thing, and that the distinction which consciousness draws between them is illusory. This thing is not regarded as either Mind or Matter, but as that which sometimes appears as Mind and sometimes as Matter, both appearances being in fact delusive.

ABSTRACTION. The act by which our attention is converged on certain parts of an object (or on the common parts of several objects), to the exclusion of the rest; or by which certain parts of an object are left unattended to, the remainder occupying the mind exclusively. These parts may be of two kinds, viz., integrant parts which are capable of being perceived or imagined separately, as the arms and legs of a man, which may be perceived or imagined apart from the rest of his body; or else subjective parts (or modes) which can be considered separately though they cannot be perceived or imagined by themselves, as the shape, size, colour, or weight of a man. Hence Abstraction is divided into Partial or Concrete Abstraction, and Modal Abstraction. It is by Abstraction—especially Modal Abstraction—that concepts, notions, or general ideas are formed. See *Attention*.

ACCIDENT. This word is occasionally used by Hamilton in the sense of

quality, attribute, or property, as distinguished from *subject* or *substance*. Every subject or substance has accidents, and every accident belongs to a subject or substance; but it is only the accidents of which consciousness takes direct cognisance. Accident is here used interchangeably with phænomenon.

AFFINITY. The law of Affinity is the law by which similar or contrasted ideas become associated together and thus capable of reproducing each other. It occurs in Hamilton's Lectures, and seems to include what in his Reid he calls the law of Repetition. See *Association*.

AMPLIATIVE (or SYNTHETICAL). These terms are applied to judgments or propositions in which the comprehension, or connotation, of the predicate is not altogether included in the comprehension, or connotation, of the subject. (Instead of comprehension or connotation, Hamilton sometimes uses the word *intension*, as affording a more direct contrast to *extension*). Such judgments are opposed to Analytical or Explicative judgments or propositions in which the comprehension or connotation of the predicate is identical with, or contained in, that of the subject. Thus assuming that the comprehension, connotation, or intension of the concept Man, or of the name Man, is Rational-Animal, All men are rational, All men are animals, and All men are rational animals, are Analytical or Explicative judgments or propositions; while All men are bipeds, and All men are mortal, are Ampliative or Synthetical. A judgment or proposition may be Ampliative or Synthetical although a part of the connotation of the predicate is included in (or identical with) that of the subject, provided another part is not so. Thus All men are two-legged animals, is an Ampliative or Synthetical judgment or proposition, because although the comprehension of the term Man includes the comprehension of the term Animal, it does not, on the above assumption, include that of the term Two-legged.

ANALYTICAL (or EXPLICATIVE). See *Ampliative*.

APPREHENSION. This word is used by Sir William Hamilton for a direct and immediate presentation, perception, or intuition of an object, in contrast to any mediate cognition, or mediate belief, in it, whether arrived at by means of imagination or of inference.

ASSOCIATION (OF IDEAS). Association of ideas is that mental principle which enables one mental state to recall another to the memory. Thus the thought of Waterloo recalls to my memory at once the thoughts Napoleon and Wellington, together with several others. In this case the thoughts Napoleon and Wellington are both said to be *associated* with the thought Waterloo; and it is very possible that the thoughts Napoleon and Wellington may also be directly associated

with each other, so that either will bring its companion into our memory without referring to Waterloo at all. What ideas will be associated in this manner depends very much on the experience and habits of thought of the individual, but in all minds some ideas are associated with others. In the phrase *Association of Ideas* the word *ideas* must be taken in its widest sense, as comprehending all states of consciousness.

ATTENTION. Attention, according to Hamilton, is not any special faculty, or special act, but merely concentrated or vivid consciousness. We can be conscious of probably six objects at once, and if so, whenever we are conscious of less than that number, we may be said to be *attending* to what we are conscious of. The term, however, is sometimes limited to cases in which consciousness is converged on two, or at most three, objects, in which case it will be more vivid than when extended to four or five. It is closely connected with *Abstraction*, already considered; for Abstraction may be described either as Attention directed to particular parts of an object, or as Non-attention to the other parts of it.

ATTRIBUTE. This word is equivalent to quality or property. See *Accident*.

BELIEF. This word frequently occurs in Hamilton, and not always in the same sense. Any inexplicable conviction—any conviction for which we can assign no reason—is often referred by him to Belief or Feeling, as opposed to Knowledge or Cognition. On the other hand, when a conviction falls short of certainty it is sometimes called Belief, while when we feel perfectly certain we are said to know or cognise the object. Again, when we are only convinced of the existence of a thing, but have no knowledge of its properties (beyond those which are implied in its name), we are sometimes said to believe in it, while when our acquaintance with its properties is more extensive we are said to know or cognise it, Thus we believe in a thing if we are convinced *that* it is, but only know it when we know *how* or *why* it is—to adopt the Greek phrases, we may believe the τὸ ὅτι, but only know when we also attain the τὸ διότι. Belief, in Hamilton's writings, is always opposed to knowledge, but the distinction seems in different passages to take these three shapes. See too *Cognition*.

CAUSE, CAUSALITY, CAUSE AND EFFECT. Hamilton intends to employ these terms in the ordinary sense, and to offer explanations of them as so used: and when he explains the cause (or rather causes) of a thing as the forms in which it previously existed, he does not mean to employ the word Cause in a new signification, but to give a scientific

explanation of its ordinary use. Apart from his peculiar theory of causation, cause is with him a name for anything without which the effect would not take place.

COGNITION. This term Hamilton often employs as the equivalent of Knowledge, using the words *cognise* for *know*, and *cognisable* (Mr. Mill writes this word *cognoscible*) for that which can be known. When dividing all mental states, however, into Cognitions, Feelings, and Conations, Hamilton uses the word Cognition in its widest sense, to include all the products of intuition and thought—of the senses and the intellect—thus including both Knowledge proper and Belief. In fact *belief* is not often opposed to *cognition*, though it frequently is to *knowledge*.

COMMON SENSE. This phrase, which belongs to Reid rather than to Hamilton, embraces the primary, original, or ultimate facts of consciousness, on which all the others depend.

COMPARISON. See *Elaborative* (*Faculty*).

COMPREHENSION and CONNOTATION. When we form a concept (see *Conception*) the parts of the object or objects on which attention is converged are called the *Comprehension* of the concept. This comprehension is merely another name for the concept itself. When we say that the comprehension of the concept Man consists of the two elements Rational and Animal, we mean no more than that the concept itself consists of these two elements. But in speaking of the *comprehension* of a concept we generally imply that the concept is a complex one which may be resolved into parts, which these parts constitute its comprehension; as will be seen in the above instance. Instead of *comprehension*, Hamilton sometimes uses the words *intension* or *depth*, as opposed to *extension* or *breadth*, which latter terms apply to the number of individuals which correspond to the concept. When a *term* stands for a concept (or for the collection of things corresponding to a concept) Mr. Mill calls the comprehension of the concept, the *connotation* of the term, and the extension of the concept, the *denotation* of the term. Connotation is thus related to comprehension in the same way that a proposition is related to a judgment—the latter term in each instance referring to the thought in the mind, and the former to its expression in language. Hamilton does not employ the terms *connote* or *connotation*, and therefore probably does not intend to use the terms *denote* or *denotation*, in the limited sense of Mr. Mill.

CONATION. Hamilton uses this word as a general term to include both Desire and Will (or Volition).

CONCEPTION, CONCEPT, &c. The word *Conception* standing both for a mental operation and its product, Hamilton proposes to use the word *Concept* for the latter, thus confining *Conception* to the operation alone. The word *Conception*, however, is often used not only for the act of *forming* a concept but for the act of individualizing it, or calling up in imagination an object which exemplifies it. This seems to be in fact the ordinary application of the verb to *conceive* as well as of the adjectives *conceivable* and *inconceivable*. A *concept* or *notion* arises from considering or attending to some parts of an object, or of several resembling objects, to the exclusion of the remaining parts, especially if these parts are subjective parts rather than integrant parts (see *Abstraction*). When we consider separately the (subjective) parts in which two or more objects resemble each other, to the exclusion of those in which they differ, we form a *general* concept, general notion, or general idea, which includes the points of agreement to the exclusion of the points of difference. Thus in forming the general concept of a square, I take several square objects and withdrawing my attention from the materials of which they are composed, the positions which they occupy, and even their magnitudes, and attending only to their figure, I form a notion of that in which alone they agree, and am thus enabled to regard any of them (or any similar figure that I may meet with thereafter) as a square. But it is impossible to realize this concept or notion of a square without having some square object (or objects) present either to the senses or to the imagination. A concept is often described as a collection of attributes, but it may consist (as in this example) of a single attribute. Sir William Hamilton believes that we can form concepts without the aid of language. He appears, however, to have sometimes used the words *concept* and *notion* in a wider and vaguer signification, as noticed in the text. Concepts are divided on several principles; for instance, into Identical or Cognate, and Different; but Hamilton thinks the most important division is into *Congruent* or *Agreeing*, viz., those which can be united in thought, and *Conflictive*, viz., those which cannot, on which division his theory of judgments is based. It will be seen that these are rather divisions of pairs of concepts than of concepts taken singly. The dispute between the *Conceptualists* and Nominalists has been dealt with in the text. Some philosophers seem to have denied the existence of concepts altogether, and to have described all who believed in their existence as *Conceptualists*. According to them nothing exists, either in the mind or out of it, except individual objects and names. These philosophers

were sometimes called Nominalists, and sometimes Ultra-Nominalists. Names were, according to them, transferred from one object to another under the influence of the principle of association when the objects in question resembled each other, and thus what was originally a proper name came to denote, not one, but several individuals which resembled each other: and a name which had been thus transferred was called a general name. They do not seem to have regarded it as having any connotation, the only property which distinguished it from a proper name being according to them that it denoted several resembling intuitions. Hamilton on the other hand appears to regard even proper names as standing for concepts not intuitions. His doctrine is therefore the extreme opposite to that of these Ultra-Nominalists.

CONDITION, CONDITIONED, &c. These terms though frequently used by Hamilton are not very carefully defined. *Condition* appears to be nearly equivalent to both *mode* and *relation*, *mode* being again convertible with quality, property, or attribute. The law of the Conditioned, as enounced by Hamilton, affirms that all positive thought lies between two inconceivable extremes, of which, since they are mutually contradictory, one must be true and the other false, though we cannot determine which. One of these extremes always belongs to what he terms the Absolute (see *Absolute*), and the other to what he terms the Infinite (see *Infinite*).

CONGRUENT, CONFLICTIVE, COGNATE. See *Conception*.

CONSERVATIVE. The Conservative Faculty, according to Hamilton, is the Memory in the strict signification of that term—the faculty which preserves ideas or other mental states, and renders them capable of being recalled to consciousness, though it requires a different faculty—the Reproductive—to recall them.

CONSCIOUSNESS. A general designation for all the mental states that we can become cognisant of, when considered in relation to the mind that knows them. It includes the three sub-classes, Cognitions Feelings, and Conations. When we are aware of the presence of any state of mind, we are said to be *conscious* of it. But Hamilton extends the meaning of the term consciousness to include everything that we know with the same directness and immediateness as our mental states; and as he believes that certain states of matter are perceived as directly and immediately as our pleasures and pains, he maintains that we are *conscious* of these states of matter as well as of states of mind.

CONTRADICTION. The law of Contradiction is that no subject (or thing)

can have contradictory predicates, or more accurately, that the predicate cannot contradict the subject. Symbolically it may be expressed, No B is non-B. But Hamilton sometimes uses the expression to include the two co-ordinate laws of Identity and Excluded Middle, the former of which is expressed Every B is B, and the latter Whatever is not B is non-B. He also calls it the law of Non-contradiction, because (considered as a precept) it prohibits contradiction, and informs us that a self-contradictory thought is illegitimate.

CONVERSION. The logical process by which, from a given proposition or judgment, we deduce another having the same terms, but in a transposed order, as when from B is C we infer that C is B. This conversion is called *simple* conversion when the quantities of both terms are unaltered after transposition, as when in Hamilton's system from All B is some C we infer that Some C is *all* B (Some C is B or Some C is some B would not be the *simple* converse of All B is Some C, but what logicians called its converse *per accidens*). When a proposition admits of being simply converted, the original proposition will always reappear on a second simple conversion. By reducing all propositions to equations and inequalities, Hamilton rendered them all simply convertible.

COSMOTHETIC (IDEALISM). Cosmothetic Idealism, or Hypothetical Realism, is the theory which admits the existence of matter (or of the external world) but denies the immediate perception of it. As on this theory we do not immediately perceive the external world, the question arises, What is it that we *do* perceive? And hence arise three sub-divisions of Cosmothetic Idealists, viz.: 1. Those who maintain that what we perceive is not a modification of our minds but of something else; 2. Those who hold that it is a modification of our minds, but one which continues to exist when we cease to be conscious of it; and 3. Those who hold that it is a mere state of consciousness whose essence consists in being felt. Hamilton sometimes classes the second and third of these sub-divisions together, thus dividing the class into two sub-classes instead of three. The doctrine of Cosmothetic Idealism is what Hamilton specially refers to as *the Ideal theory, the representative theory of perception*, or *the representative hypothesis;* and one main object of his reasonings concerning the external world is to show that the Cosmothetic Idealist has no right to believe in its existence, and only attains it by means of a paralogism.

DENOTE, DENOTATION. See *Conception* and *Connotation*.

DICTUM. Aristotle's *Dictum*, on which he founded the theory of the

Syllogism, is that whatever is affirmed or denied of a *whole* class may be affirmed or denied of anything contained in the class. This is known as the *Dictum de omni et de nullo*.

EGO, NON-EGO. Hamilton uses the Latin *ego* in preference to the English *I* or *myself*, because the former is not liable to be confounded (in oral delivery) with the *eye*, and can be used either in the nominative or the objective case. The *non-ego*, of course, means anything that is not the ego, and would therefore include any other mind than my own; but with Hamilton the *non-ego* is often used as the equivalent of *matter*.

ELABORATIVE (FACULTY). The Elaborative Faculty is Hamilton's designation for the faculty of thought or comparison, also known as the discursive faculty. This is the faculty which gives rise to concepts (hence abstraction is one of its operations), judgments, and reasonings, all of which are so many modes of comparison. Logic is the science of its operations. Concepts are formed by comparing intuitions, judgments by comparing concepts, and reasonings by comparing judgments Under the head of comparison, Hamilton includes the conditions or pre-requisites of the act of comparison, and also its results. All our perceptions of relations are due to this faculty, every relation being the result of a comparison, and every act of comparison implying the perception of a relation.

EMPIRICISM. EMPIRICAL. EXPERIENCE. Empiricism is the system which explains all the phænomena of the human mind by means of Experience. But the term *Experience* itself has been differently understood, standing sometimes for sensations or other rude materials of knowledge, and sometimes for the knowledge derived from them, and into which they enter: while again, other writers appear to limit its meaning to what has been termed *external* experience. With these latter philosophers Empiricism becomes *Sensualism* or *Sensationalism*. The fundamental principle of Empiricism seems to be that there are no judgments or propositions which are *from the first* universal and necessary, while it is also maintained that all our earlier judgments or propositions are singular—relating to individual objects only—and that the great instrument for generalizing these is *induction* (see *Induction*). When Empiricists include *mental* experience in their sources of knowledge, there is some risk of verbal questions arising between them and philosophers of the school of Hamilton. I make for example a number of unsuccessful efforts to imagine two right lines enclosing a space, and at the end of the process conclude that it is impossible for them to do so. One

philosopher says that this is the result of an universal and necessary law of mind. Another says that it is a generalization of my mental experience on the subject. These statements seem to be two ways of expressing the same fact, provided that the mental experience is admitted to be original, and not dependent on association of ideas or acquired knowledge and habits of thought. The word *Empirical* is sometimes used by Kant, not for that which is derived from experience, but for that which is applicable to (or involved in) experience, though, perhaps, itself *à priori*. This employment of the term does not, I believe, occur to Hamilton.

ENERGY. This word in Hamilton is nearly equivalent to action.

ENS. A wide term for anything that exists, and hence nearly equivalent to existence. Thus Hamilton in one place says that *ens* is the *primum cognitum*, or first thing known, which he elsewhere says of existence, since all thought and all knowledge implies the knowledge, or thought, of existence.

EXCLUDED (MIDDLE). The law of *Excluded Middle* is, that whatever is not B is non-B, where B is any concept whatever. The meaning of the phrase Excluded Middle is, that any third, or *intermediate*, alternative is *excluded* or inadmissible. If the thing is not B, it is non-B. There is no possibility of its being *neither*. It likewise cannot be *both;* but this results, not from the law of Excluded Middle, but from that of Contradiction. No B is non-B, implies that nothing is both B and non-B. Hamilton describes the law of Excluded Middle as the principle of disjunctive judgments; but if the proposition Everything is either B or non-B, implies that nothing is *both* B and non-B, the principle of Contradiction, is involved in it as well as that of Excluded Middle. Hamilton, however, regards the two principles as different phases of the same law. See *Contradiction*.

EXISTENCE. In some passages Hamilton seems to identify *existence* with *substance*, at least when he speaks of absolute existence, existence in itself, &c. Attributes, qualities, phænomena, &c., which alone are known to us, are thus characterised as *modes*, or *forms* of existence. That we cannot conceive existence as absolutely commencing or terminating, is nearly equivalent to saying that we cannot conceive *substance* as beginning or ceasing to exist; and thus the permanence (both anterior and posterior) of substance, or rather of substances, lies at the basis of his assertion that we cannot regard the quantity of existence as either increased or diminished. See *Substance*.

EXTENSION, EXTENSIVE. According to Hamilton we perceive or cognise what is usually called space or extension, both *à priori* and *à posteriori*, and he proposes to distinguish them by calling the *à priori* idea, *space*, and the *à posteriori* idea, *extension*. We have also to consider the *extension* of a concept or a name. This is merely the number of individual objects which correspond to the concept, or to whom the name is applicable. Hamilton often speaks as if this extension was essential to the concept, and might be discovered by mere analysis of, or reflection on, the concept as it exists in the mind; but it can hardly be said that he includes the property of having an extension in the *meaning* of the word *concept*, or that he would withhold the term concept from our ideas of a dragon or a griffin, which have no (real) extension. See *Conception*, *Comprehension*, and *Ampliative*. The extension of a term is sometimes called its *denotation*. The *extensive quantity* of a thing or collection of things, is its *magnitude* measured by bulk or number, and is thus distinguished from *intensive quantity* or *degree*, and from *protensive quantity* or *duration*.

FACULTY. A faculty, according to Hamilton, is not any thing *in* the mind, or any separable portion *of* the mind, but is a general name for the mind when acting in a particular way. Similar mental acts are referred to the same faculty; dissimilar acts to different faculties. His enumeration of faculties are—the Perceptive (which has two branches, External and Internal), the Conservative, the Reproductive, the Representative, the Elaborative, and the Regulative. These, however, are properly the Cognitive Faculties, and do not include the Emotions and the Will (Feeling and Conation). Consciousness is not a faculty, but includes all the faculties. They all operate only in so far as we are conscious of them.

FEELING. Hamilton uses this word to denote those states of mind which are pleasurable or painful, and mainly consist in pleasure and pain. Feeling is purely subjective, in contrast with *cognition* or knowledge, which is objective. But here we must recollect the distinction which Hamilton draws between the subjectivo-object and the objectivo-object. *Feeling* is subjectivo-subjective. There is no object of any kind in pure feeling; while in cognition, though sometimes there is no objectivo-object, there is at least a subjectivo-object. Knowledge and feeling, however, always co-exist, (though the one rises higher as the other sinks lower,) and in actual experience we never meet with a state of pure feeling without knowledge, or of pure knowledge without feeling. Feelings are subdivided into Sentiments and Sensations.

FIGURE. The *figure* of a Syllogism is determined by the arrangement of the Middle Term as predicate or subject in its premisses. Thus if the Middle Term is the subject of the major premiss, and the predicate of the minor premiss the Syllogism is said to be in the first figure See *Major*.

FORCE. This word with Sir W. Hamilton implies not merely something that accelerates or retards motion (whether of our own bodies or of extra-organic matter), but a certain *nisus* or effort of which we are conscious. The same observation applies to *Resistance*. An interplanetary medium which slightly retarded the motions of the earth and planets, would not be regarded as offering *resistance* if it produced no conscious effect on our muscular system. Resistance is, in fact, conscious resistance to our locomotive volition, and to our organism when in motion under the influence of that volition. This employment of the terms force and resistance is not peculiar to Hamilton, but it may be worth while to point out that their use in Physics and Psychology do not always correspond. Hamilton also occasionally employs the term *force* for a positive principle or positive necessity in contrast to an *impotence* or *imbecility*.

FORM. Hamilton uses this word in the Kantian sense, for an universal and necessary element in certain facts of consciousness without which the others could not exist. Thus space in the Kantian system is the *form* of external sensation, and time is the form of sensation, both external and internal, because without space the external sensation would sink into an internal sensation, and without time the latter would disappear also. But Hamilton is less careful than Kant as to the terms which he employs in connexion with the word *form*, and seems hardly to distinguish between Forms of sense, Forms of imagination, and Forms of thought. In fact, he describes space in each of these three ways in different passages of his writings. The Forms of all the faculties being universal and necessary, are referred by him to the intellect, or regulative faculty. In Logic the use of the word Form is, in some cases at least, different. Thus, when we speak of the *Forms* of Propositions, we do not mean the universal and necessary part of propositions, but the heads or classes under which propositions may be arranged. The former use of the word Form is borrowed from Aristotle, with whom Matter meant everything that is not Form; but Hamilton usually employs *matter* and its correlatives only for that which occupies space, and constitutes the external world. When Hamilton describes the cause of a thing as the *form* (or *forms*) in which it previously existed, he employs the word nearly in the same meaning as *state* or *mode*.

GENERALIZATION, GENERAL NOTIONS. See *Abstraction, Conception.*

IDEA. This word rarely occurs in Hamilton's writings, and then usually in a very wide sense, including intuitions, representations, concepts, and almost every other state of consciousness, as in the phrase Association of Ideas.

IDEALISM. The doctrine which denies the existence of the external world or matter, and maintains that nothing exists, or is known, except minds. This doctrine Hamilton sometimes designates *Absolute* Idealism, giving the name of *Cosmothetic* Idealism to the doctrine which denies the *immediate* knowledge of the external world, but holds that it exists, and can be mediately known or inferred. See *Cosmothetic* (*Idealism*).

IDEAL THEORY. The theory which maintains that we do not perceive external or material objects themselves, but only certain *ideas* of them. The word *idea* is here used in a narrower sense than by Hamilton.

IDENTITY. The law of Identity affirms the complete identity between a concept and its entire comprehension, and the partial identity between it and any part of its comprehension. The symbolical expression of this law is $B = B$. This law, together with those of Contradiction and Excluded Middle, constitute the fundamental laws, or rather law, of Logic; for Hamilton, as already stated, regards them as three phases of the same law. *Personal identity*, Hamilton thinks, is first perceived when we compare a past state of consciousness, represented in the memory, with a present state; and it is in this perception of personal identity that we first recognize the ego or self. As to Absolute Identity, see *Absolute.*

IMAGINATION. Hamilton calls this faculty the Representative Faculty, and its products are what are properly termed *representations*—a word which some philosophers use as widely as *idea.* The Representative Faculty is more strictly what is called the Reproductive Imagination, what is known as the Productive or Creative Imagination involving (according to Hamilton) the operations both of the Representative and of the Elaborative Faculties. Re-presentation is opposed by Hamilton to *presentation*, the thing being *presented* when it first enters the mind (by means of the senses), and *re-presented* when it is afterwards called up by the imagination. The imagination, he believes, employs the same sensitive organ in representing that was originally employed in presenting, the difference being that in one case it is excited by external, and in the other by internal, influences. Mr. Mill (following Hume), often uses *idea* in the sense of Hamilton's *representation.* Representations must,

in Hamilton's system, be distinguished both from intuitions and concepts. See the next head.

IMMEDIATE OR INTUITIVE (KNOWLEDGE). Immediate or intuitive knowledge or cognition is distinguished by Hamilton from mediate or representative knowledge or cognition. Here the word *representative* is used in a wider sense than in connexion with the imagination (just considered) since, whenever we do not know or perceive the thing itself (whether a state of mind or of matter), but only something else from which it can be inferred or deduced, our knowledge is said to be *representative*. Thus I have only a representative knowledge of a distant object (so long as it continues at a distance), though, what I immediately know when contemplating it, may be a state of matter rather than of mind. Using the word *object* so as to include our states of mind, as well as the states of the material world, the great distinction between these two kinds of knowledge is, that in intuitive or immediate knowledge, there is but a single object which is directly cognized, whereas in representative or mediate knowledge there are two objects, one of which is directly cognized, while the other is cognized only indirectly, and through it. There seems to be a corresponding distinction between immediate and mediate *belief*; indeed Hamilton often uses the word *cognition*, to include both knowledge and belief.

INCOMPRESSIBILITY (ULTIMATE). The Law of Ultimate Incompressibility, according to Hamilton, is that law, by which a material object is incapable of extrusion from space, or of being compressed into nothing. It is distinct from Resistance, because it relates only to a compressing (not to a translating) force, and because it alleges that the resistance thus opposed to the compressing force would ultimately become insuperable, no matter how the force might be increased.

INCONCEIVABLE. That which cannot be conceived (see *Conception, Concept*): but the verb to *conceive* is used not only in the sense of forming a concept, but also in the sense of picturing in the imagination an object corresponding to the concept when formed. There are therefore at least two kinds of inconceivables, viz., when the proposed concept cannot be formed (being inconsistent with the laws of thought) and when, though it can be formed, no corresponding object can be perceived or imagined. Thus that which is neither white nor non-white is an inconceivable of the former kind, while a space enclosed by two right lines is an instance of the latter. Hamilton again derives the latter kind of inconceivableness from two sources, a positive and a negative one; for I may fail to imagine an

object corresponding to a concept (or to a combination of two concepts) because some law of my nature forces me to imagine the opposite, or because owing to the limitations of my faculties I cannot imagine either of two things one or other of which must be real (see *Conditioned*). Mr. Mill charges Hamilton with using the term Inconceivable in other senses, but I think unjustly. Whatever is *conceived* must of course come under a *concept* as well as be present to the mind in an intuition or *representation* (as already explained). Both imagination and thought are thus requisite to the act of conception.

INDUCTION. The mental operation by which from a number of individual instances, we arrive at a general law. The process, according to Hamilton, is only logically valid when all the instances included in the law are enumerated. This being seldom, if ever, possible, the conclusion of an Induction is usually liable to more or less uncertainty, and Induction is therefore incapable of giving us necessary (general) truths.

INFINITE. The unlimited: meaning in its strict sense that which is unconditionally unlimited, or, in all respects and relations, unlimited. Negative attributes being limitations, no negative attribute can belong to the Infinite. In a looser sense the word is used for that which is greater than any finite. The Infinite and the Absolute are with Hamilton two subdivisions of the Unconditioned. See *Absolute*.

INTELLECT, INTELLIGENCE. These words do not occur in Hamilton's list of Faculties, but his use of them seems to correspond very nearly with the Regulative Faculty, with the occasional addition of the Elaborative Faculty: which see.

INTENSION. See *Comprehension*. *Intensive* quantity (as opposed to extensive quantity) is a phrase which Hamilton often employs in the sense of degree and especially degree of vividness.

INTERNAL. Internal sense, or Internal perception, is the faculty which perceives or apprehends the states of our own minds, such as pleasure and pain, in contrast to the states of the external world. The faculty of Perception includes the two subdivisions External Perception and Internal Perception.

INTUITION. Intuition or Presentation is opposed to thought and its various products (see *Elaborative Faculty*), and embraces the products of the Faculty of Perception, whether External or Internal. It is an immediate knowledge or cognition of something in space, in time, or in both. Its object is sometimes said to be individual, which is so far true that the object of an intuition can never be general; but on the one hand an intuition, such as that of the table before me, often consists of many separable parts, and on the other

hand, in order to recognize an individual object as the same that we previously knew, we must have at least two intuitions (a present and a past one) and institute a comparison between them. Occupation of a definite portion of space, or time, or both, seems to be the most definite characteristic of an intuition, while a concept is something that (usually at least) equally belongs to more than one intuition, each of these intuitions having its own position in space and time. Hamilton, however, distinguishes an intuition or presentation from a representation as well as from a concept. (See *Imagination* and *Conception.*)

JUDGMENT. In one meaning of the word, any apprehended relation between two states of consciousness is a *judgment;* but as the apprehension of a discrimination and relation between two such states is essential to all consciousness, every act of consciousness thus implies a judgment. In its narrower meaning, a *judgment* is a relation between two concepts which form its subject and predicate. In this sense it is the second operation of the Elaborative Faculty with which Logic deals, viz., the mental process corresponding to a proposition. It is in this latter sense that judgments are divided into Analytical or Explicative and Synthetical or Ampliative, as already mentioned. The two meanings of the word *judgment* are sometimes distinguished as Psychological judgments and Logical judgments. The best verbal expression for the former kind of judgment, according to Hamilton, is, *This is here*, or, *That is there.*

KNOWLEDGE. See *Cognition.*

LATENT (MODIFICATIONS). A latent state or modification of the mind is one of which we are not conscious at the moment, but which is nevertheless capable of producing effects on consciousness. It would seem to be of two kinds, viz. that which is not at present producing any effect on consciousness, but is capable of producing effects hereafter, (for instance, when recalled to the mind by an act of memory), and that which is producing a present effect on consciousness, though it is itself latent. But Hamilton is of opinion that all latent modifications are of this latter kind, every mental activity that we have once experienced continuing to exist in a state of latency (but occasionally rising again into consciousness) during the whole remainder of our lives.

LAW. Hamilton uses this word both for the expression of the universal and necessary facts of consciousness (see *Form*) and also for the generalized facts of our internal experience. It is used in the latter meaning, for instance, when Hamilton tells us that the *law* which connects sensation and perception is that they always co-exist, but are in the inverse ratio of each other: while it is used in the former meaning in such expressions as the *law* of contradiction. When used

so as to imply necessity, this necessity may be either of a positive or a negative character. (See *Necessity.*)

LIMIT. Hamilton seems occasionally to employ this verb and its cognates in the sense of to *mark out* or *define;* as when, in law, an estate is said to be *limited* to a man and his heirs, that being in fact what would be popularly called an unlimited estate.

LOCOMOTIVE. The Locomotive Faculty does not occur in Hamilton's list of faculties, and is in fact only a name for the power of setting our muscles in motion by means of will or volition. In so doing, Hamilton thinks there is a consciousness of *effort,* distinct both from the volition to move and the sensations which accompany the movement, (these are called muscular sensations, and are usually referred to what is called the Muscular Sense, though sometimes included under the sense of Touch). Volition being always directed to an end, the greater or less amount of effort necessary under different circumstances to accomplish this end, would, apart from any accompanying sensations (according to Hamilton), reveal to us the fact that our locomotive energy was resisted; and it is by this resistance to our locomotive energy that the existence of an extra-organic world is first revealed to us. This doctrine only appears in Hamilton's Dissertations to Reid. The volition to move presupposes the notions of space and motion in space, but Hamilton has not directly described the latter of these notions as *a priori.*

LOGIC. With Hamilton, Logic is the science of the formal laws of thought, or the science of the laws of thought as thought. It is thus the science of the laws and products of the Elaborative Faculty: which see. It does not concern itself with any inference or evidence which is not absolutely conclusive.

MAJOR, MINOR, MIDDLE. The words *major* and *minor* are applied in Logic to both propositions and terms. In a syllogism the *major term* is the predicate of the conclusion, the *minor term* is the subject of the conclusion and the term which occurs in the premisses, but not in the conclusion, is called the *middle* term. The *major premiss* is the premiss which contains the major term and the middle term: the *minor premiss* is that which contains the minor term and the middle term. The word *middle* is applied only to the term, and not to any proposition. An *undistributed middle* is the fault which occurs in a syllogism where the middle term is *particular* (see *Particular*) in both premisses. Thus in the syllogism

Some B is (some) C,
Some C is (some) D,
Therefore some D is (some) B.

B is the major term, C is the middle term and D is the minor term; some B is (some) C is the major premiss: some C is (some) D is the minor premiss: some D is (some) B is the conclusion; and the syllogism is invalid on account of the fault known as undistributed middle, the middle term C being particular in both premisses.

MATERIALISM. The theory of perception according to which the perceiver and the perceived are alike material—mind being only a kind of matter or a product of matter.

MATTER. See Form.

METAPHYSICS. This term is employed for both Psychology and Ontology, but is more properly applicable to the latter, according to Hamilton.

MODE. This word is usually equivalent to *state*, and nearly coincides in meaning with *accident*, *attribute*, *quality*, &c., as contradistinguished from *substance* or *subject*. In Logic it has a different meaning, namely, a particular arrangement of premisses and conclusion; as the *mode* UAA signifies a syllogism in which the major premiss is U, the minor premiss A and the conclusion A (the meanings of which vowels appear by Hamilton's Table of Propositional Forms). Popularly it is used as equivalent to *way* or *method*; but not by Hamilton.

NATURAL (REALISM OR DUALISM). Natural Realism or Natural Dualism is Hamilton's name for the doctrine which maintains that in perception we are conscious at once of mind and of matter—of the ego and of the external world. *Realism*, as thus used, implies a belief in the external world, and accordingly the Cosmothetic Idealists are also described as Hypothetical Realists. This use of the word is quite distinct from that in which *Realism* is opposed to *Nominalism*. Realists, in that sense, were those who believed that there were real things which corresponded to our general ideas or concepts—these real things not being the individual things contained in the extension of the concept, but universals. They seem to have been what Plato called Ideas, so that in this meaning of Realism and the Platonic meaning of Idea, Realism and Idealism would coincide instead of being opposed. The old use of the word Realism only occurs in a few historical passages in Hamilton. It is not, of course, to be identified with Dualism.

NECESSITY. Besides the use of this term to imply what we cannot avoid thinking or judging, the word Necessity is often applied to the doctrine which denies the freedom of the human will, and even to that form of the doctrine which confines itself to asserting that volitions have invariable antecedents which would enable any person who knew *all* the antecedents to predict the volitions with perfect accuracy. Hamilton's divisions of Necessity are given in the text. That to

which he attaches most importance is the division into positive and negative necessity. Necessity is his great test for distinguishing the original furniture of the mind from the subsequent acquisitions of experience.

NEGATIVE. Every concept has its negative, the one being expressed as B, the other as non-B. The same observation is true of every attribute or name. But concepts and attributes are often described as negative when they are such as we cannot *conceive* either at all or in the required combination. Negative in this latter sense is equivalent to inconceivable, and positive to conceivable. Passing on to judgments or propositions, a negative judgment strictly speaking is that whose copula is *is not* instead of *is*, as Man *is not* a quadruped. But a law or principle is sometimes described as negative, not because it is expressed by a negative judgment or proposition, but because its necessity is of a negative kind as already explained. These various meanings or applications of the term negative often require to be borne in mind. The principle of Contradiction—No B is non-B—is expressed by a negative judgment, but it possesses the highest kind of positive necessity: and instances of the opposite kind could easily be given.

NIHILISM. The doctrine which recognizes nothing but passing mental modifications, and denies the independent existence of mind and matter as well as of any higher substance.

NOMINALISM. See *Conception, Concept.*

NOMOLOGY. The Science of Laws as opposed to phænomena. Thus, Logic is the *Nomology* of the Elaborative Faculty.

NON-EGO. See *Ego.*

NOTION. Usually employed by Hamilton in the same meaning as concept, but he sometimes uses it in a wider signification. A combination of attributes (whether positive or negative) which violates the laws of thought (or any other necessary mental law) may be called a notion, but not a concept. Thus we may speak of the notion, but not the concept, of a square-circle.

OBJECT, OBJECTIVE. Anything which can be separately considered and regarded apart from the conscious mind is in Hamilton's language an *object*. It may be only a state of the mind, in which case it is called a subject-object or subjectivo-object, or it may be a state of matter or of the external world, in which case it may be called an object-object or objectivo-object. In the case of subject-objects, there is no real distinction between the mental act or operation and its object, the act of imagining a centaur being, in fact, the same thing with the representation (or imagination) of a centaur; but in the

case of an object-object, the operation and the object are quite distinct, the one being mental and the other material. In immediate knowledge there is only one object, which may be either a subject-object or an object-object; but in mediate knowledge there are two objects, an immediate object which is always a subject-object and a mediate object which is usually an object-object. Thus when I imagine London Bridge in its absence, the immediate object of the act of imagination is my present mental representation of the bridge, and the mediate object is the bridge itself as I formerly saw it. There is another use of the term, however, owing to which Hamilton's language is sometimes ambiguous. The *object* of a mental act or state sometimes means not that which is cognized in the act or state, but that which *causes* or *produces* the cognition; and thus understood the immediate object means that which *immediately* causes or produces the mental state, while the mediate or remote object means that which *ultimately* causes or produces it, by affecting the immediate cause. In this way the vibrations of the air in contact with the ear may be said to be the immediate object of the sense of hearing, even by those who maintain that we are not immediately cognizant (or conscious) of these vibrations; while the mediate or remote object would be the sounding body at a distance which sets the air in vibration, and thus causes the immediate cause of the sensations of sound, of which latter alone I am on this theory conscious. It is not easy to determine whether in some passages Hamilton intends using the phrase *immediate object* in this latter sense or in the sense of that which is immediately cognized, and some obscurity is thus thrown over his Natural Realism. The word *objective* is free from this ambiguity; but it may mean either subjectivo-objective or objectivo-objective, the former meaning being more common with the earlier English writers, and the latter meaning with the later. Reid used the word *object* in the sense of objectivo-object exclusively (I believe) and Mill seems to understand it in the same sense whenever it occurs in the pages of Hamilton.

Ontology. The science of being as being, as distinct from the knowledge of any of its phænomenal manifestations. Thus a science of the Absolute or of the Infinite would be an Ontology. Such sciences Hamilton thinks impossible, yet as he gives Ontology, or Inferential Psychology, a place in his division of Philosophy, it may be assumed that he believed that in some instances we could proceed beyond the facts of consciousness by way of legitimate inference. Natural Theology would probably come under this head. With the earlier philosophers Ontology usually included Rational Psychology or

Pneumatology, Rational Cosmology and Rational Theology, the word *Rational* being used to indicate that all these sciences were based on grounds independent of experience.

OPERATION. This term, like the words *act* and *energy*, seems to be often used by Hamilton to include mixed states of action and passion. (We are never, he thinks, conscious of pure passivity.) Thus he speaks of perception as an operation; though the mind is, for the most part, passive in perception.

ORGAN, ORGANISM. These words seem to be sometimes used for the whole of the human body, while at other times they are limited to the nervous system.

PARCIMONY. The law which forbids us to assume more causes or principles than are necessary to account for the facts to be explained is termed by Sir W. Hamilton the law of *parcimony*. It not only forbids us to assume more causes than are necessary, but also to assume *more onerous* causes than are required. This latter phrase appears to mean that we must not assume a positive force or power to explain what can be accounted for by a mere negative inability. He adds two laws, described as the laws of *Integrity* and *Harmony*, which, however, seem less important.

PARTICULAR. Hamilton uses this word in the meaning of *some*, but generally more than one. His use is not to be confounded with that of many recent writers, like Mr. Mill, who use *particular* in the sense of *individual* (whence, I suppose, an individual is now sometimes called a *party*). A *particular proposition*, with Hamilton, is one of the form Some Bs are Cs, not of the form This B is C—which would be a *singular* proposition. Hamilton uses the word *some*, however, in the sense of *some only*.

PERCEPTION. In its wider sense, *perception* is nearly equivalent to *intuition* or *presentation*. The faculty of perception is that by which ideas first enter the mind, and it has two branches, External Perception and Internal Perception—the former again including the five senses. In a narrower sense *perception* is opposed to *sensation*, and is limited to the objective (as *sensation* is to the subjective) characteristics of the products of the faculty of perception. In this sense it seems to be exclusively applied to external perception, and what Hamilton speaks of as the various *theories of perception* are in fact theories of *external* perception only. The characteristic property of perception, in this narrower sense, is the reference to space—at least in the form of locality. The primary qualities of matter belong to perception, and the secondary to sensation (the secundo-primary being attained by the locomotive faculty). In popular language we often

speak of *perceiving* a relation between two things, or *perceiving* the truth of a proposition, and by some writers *perception* is used in as wide and vague a sense as *idea*. The reader must bear in mind that Hamilton never adopts these latter meanings of the term. The word *percept* seldom if ever occurs in Hamilton. Had he employed it (like *concept*) he would have avoided some of the ambiguities attaching to the phrase *object of perception*.

PHÆNOMENON. Or appearance. Used by Hamilton for a mode, state, quality, attribute, accident, or property, either of mind or of matter. Kant uses the term in contrast to *noumenon*—the thing as it really is; whereas phænomenon with him means the thing as it appears to us. The word *noumenon* is not employed by Hamilton; and he opposes the term *phænomenon* not to *noumenon* but to *substance*: e. g. he describes the principle of Substance as the law of substance and phænomenon.

PHILOSOPHY. Hamilton uses this word as nearly identical with what is often called *Mental* Philosophy. See *Metaphysics*.

POSTERIORI. See *Priori*.

POTENTIAL, POTENTIALITY. That which is capable of becoming something else, is sometimes said to be *potentially* that something else. Thus if B may become C, it is said to be potentially C. But this potentiality is two-fold, for the thing may be capable of being changed into C by the operation of something else (which we may call D), or it may be capable of changing itself (unaided) into C. In the former case, however, the proper expression would seem to be that B and D together are potentially C; and this, I think, is the way in which Hamilton uses the word potential, and its cognates.

PREDICATE. Every judgment or proposition contains the two elements, viz. something about which an assertion is made and something that is asserted of it. That about which the assertion is made is called the *subject* (it might perhaps have been better designated the *object*), and that which is asserted of it, is the *predicate*. Thus in the proposition Every man is mortal, man (or every man) is the subject of the proposition, and mortal is the predicate. The word *is* (or *is not*) which connects them is known as the *copula*. A proposition thus consists of a subject, a predicate, and a copula, as does also a judgment. (I have, however, here assumed the proposition to be what is called a categorical proposition. See *Proposition*.)

PREMISS, OR PREMISE. A judgment or proposition when employed in a Syllogism—every syllogism consisting of two premisses and a conclusion. These premisses are called the major premiss and the minor premiss, as already mentioned.

PRESENTATION, PRESENTATIVE. Presentation is nearly equivalent to *intuition* and *perception*, which see. Intuitive or immediate knowledge is also described as *presentative* knowledge. We are not therefore, however, to conclude that *all* presentative knowledge consists of presentations. That which is immediately known must, according to Hamilton, be *present* to the mind, both in time and (if it be a material object) in space. Hence probably the derivation of the term *presentation*.

PRIMARY (QUALITY). Hamilton divides the qualities of matter, as known to us, into primary, secundo-primary, and secondary. The primary are all resolvable into, and deducible from, the fundamental element, *occupation of space;* and space being *à priori* as well as empirical, they are to a great extent *à priori*, and dependent on the intellect alone. We perceive them in our organism. The secundo-primary qualities are all reducible to resistance to our locomotive volition, and are perceived by means of the locomotive faculty. They alone are immediately perceived, according to Hamilton, in extra-organic bodies. The secondary qualities, like the primary, are affections of our organism, but when taken alone do not include any direct reference to space, and are perceived in the organism rather as a sensitive or animated, than as an extended or material, organism.

PRINCIPLE. This word is nearly identical with *law*. But an ultimate *principle* seems to be occasionally used for an ultimate *being*.

(A) PRIORI. A general name for that which is derived from the nature of the mind itself independently of experience; in contrast to *a posteriori*, or empirical, meaning that which comes from experience.

PROPOSITION. The expression, in words, of a judgment. Propositions are divided on various principles; into affirmative and negative: into categorical, hypothetical, and disjunctive (the categorical is of the form B is C, the hypothetical of the form, If B is C then D is F, and the disjunctive is of the form Either B is C or D is F; but Hamilton seems to limit it to the form, B is either C or D): into universal, particular, and singular, &c. This latter division being based entirely on the quantity of the subject, is superseded by Hamilton's quantification of the predicate, and appears in a different shape in his system. His list of Propositional Forms is given in the text.

PSYCHOLOGY. The Science of Mind.

QUANTIFICATION. Expressing in words the quantity of a thing. Thus the quantification of the predicate, means expressing in words the quantity of the predicate.

QUANTITY. This word seems to be sometimes used for that which possesses quantity (*quantum*), as well for quantity itself (*quantitas*). Quantity

is of three kinds, extensive (magnitude or number), protensive (measured by time), and intensive (measured by vividness, or degree of vivacity).

REALISM. See *Natural* (*Realism*).

REASON. This term does not very frequently occur in Hamilton. It is usually equivalent to the Elaborative Faculty together with the Regulative Faculty. *Reasoning* refers to the Elaborative Faculty alone. *Understanding* seems also to refer chiefly to the Elaborative Faculty.

REDINTEGRATION. A law of Association. Hamilton seems to give this name to one law of Association in his Lectures and to a different law in his Edition of Reid, as explained in the text. The name of the law is derived from the tendency of association to re-unite what had once been united, by recalling the rest when any portion of it is present.

REGULATIVE (FACULTY). Hamilton gives this name to the Mind considered as the source of universal and necessary truths. It is not, properly speaking, a faculty, but a collection of *à priori* laws or principles.

RELATION, RELATIVE. These terms would hardly need explanation, were it not that some writers have used the term relative in the sense of relative *to us*, and even interpret *relative to us* as equivalent to existing only as a state of consciousness in us, or as the cause of such a state of consciousness. This is not Hamilton's use of the terms. When he intends by relative, relative to us, the words *to us* are, I believe, always added. Hamilton holds that every relation is restrictive or limitative, and hence incompatible with the Infinite. See *Infinite; Conditioned.*

REPETITION. See *Association.*

REPRESENTATIVE (FACULTY), REPRESENTATION. See *Imagination.* The representative theory of perception, or representative hypothesis has been explained under the head *Cosmothetic* (*Idealism*).

REPRODUCTIVE or RESUSCITATIVE (FACULTY). The *active* faculty of memory—that which recals a mental state which we once felt before, as distinct from the Conservative Faculty, which keeps it latently in the mind ready to be recalled on the proper occasions.

RETENTION. See *Conservative* (*Faculty*).

SELF. See *Ego.* Not-self is, of course, equivalent to Non-ego.

SENSATION. See *Perception.*

SPACE. See *Extension.*

SPECIES. This word is used in two senses; first, for a class of things which is not the highest, but has another class above it, as man is a *species* of animal; and secondly, nearly in the widest sense of *idea*, for

a mental modification of any kind, which was called a *sensible* species when it belonged to the senses, and an *intelligible* species when it referred to the intellect. Sensible species included visible, tangible, &c., species. In this latter sense the word occurs in Hamilton only in a historical reference.

SUBJECT, SUBJECTIVE. Besides its use in contrast to the word *object* (in which case the *subject* is the mind), this word is used in two other references. In a judgment or proposition, that respecting which the assertion is made is called the subject, and that which is asserted of it is called the predicate; and again, *subject* is sometimes used in the same signification as *substance*, and is thus applicable alike to matter and mind. See *Object, Objective. Subjective* parts are sometimes used for the parts of which the comprehension of a concept is made up in contrast to *integrant* parts.

SUBSTANCE. Is used by Hamilton for the thing as it really is (which is unknown to us), in contrast to its states or modes which are known to us. These states or modes, however, are not to be regarded as entities inherent *in* the substance, but as determinations of it.

SUGGESTION. Hamilton uses this term occasionally for Reproduction. Reid used it to indicate anything that is not directly attained by consciousness but is called up by that which is directly attained.

SYLLOGISM. Three judgments or propositions, so arranged that one follows, or is alleged to follow, from the other two. These two are called the premisses, and that which follows from them is called the conclusion. Ordinarily there must be but three terms in the three propositions, which have been already described as the major, the minor, and the middle, terms. The syllogism is a valid syllogism, if the conclusion really follows from the premisses, and invalid if it does not. In Hamilton's system, if the two premisses contain but three terms there will always be *some* conclusion, unless both premisses are negative or the middle term is undistributed. See *Major, Minor, Middle.*

SYNTHETICAL. See *Ampliative.*

THOUGHT. See *Conception; Elaborative (Faculty); Intuition.*

UNCONDITIONED. The opposite of the Conditioned. It includes two sub-divisions which are opposed as contradictories, viz. the unconditionally limited or Absolute, and the unconditionally unlimited or Infinite. See *Absolute; Infinite.*

UNIVERSAL, UNIVERSALITY. Any *general* notion or concept is often spoken of as an universal, and the corresponding term as an *universal* term. This kind of universality must not be confounded with the universality which (with necessity) constitutes Hamilton's test of an

à priori or ultimate mental element; otherwise every general notion or concept would be *à priori*. An universal proposition is one in which the subject is taken in its entire extension, as All men are mortal, No man is a quadruped. (The quantification of the predicate, however, partly abolishes this use of the word universal). In these cases the subject is said to be *taken* universally, which is different from saying that it is an universal term. An universal term might be taken particularly, as Some men are black. Man or men is here an universal term, though taken particularly. The universality ascribed to an ultimate or *à priori* truth is two-fold. 1. It admits of no exceptions. 2. It is believed by all men. Thus Every event has a cause is true of all events without exception, and all men (on this theory) believe it to be true.

WHOLE. There are many kinds of wholes and parts. A sensible object, such as an individual man, is a whole, and even a whole which may be regarded as made up either of integrant, or of subjective, parts; i.e. as either made up of arms, legs, head, &c., or of size, figure, colour, weight, &c. Besides this, a class or collection of objects may be regarded as a whole, of which the various sub-classes or individual objects comprised in it constitute the parts, and a concept may be regarded as a whole, of which the various attributes comprised in its comprehension make up the parts. Thus (the class) Man is a whole made up of Caucasians, Negroes, Red Indians, &c., and (the concept) Man is a whole, made up of the attributes (or collections of attributes) Rational, Animal, &c. These latter wholes are spoken of as the wholes of comprehension and of extension respectively; and Hamilton sometimes speaks as if the *concept* was the whole in each case, and as if it might be said (though from different points of view) to consist of either of these kinds of parts. Previous to his adoption of the quantification of the predicate he described every judgment or proposition as expressing a relation of whole and part between the subject and the predicate, either as regards comprehension or as regards extension; but that theory does away with the relation of whole and part, at least in the case of extension, since in every affirmative judgment the quantified predicate and subject are declared to be *equal* as regards the quantity of extension.

THE END.

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