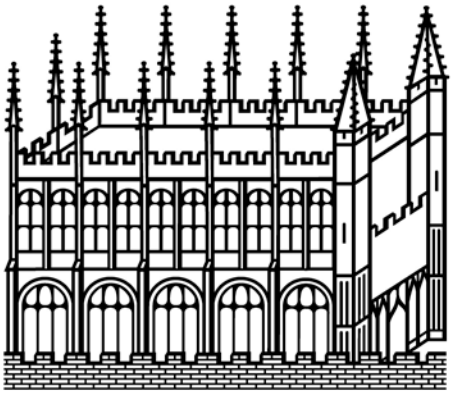

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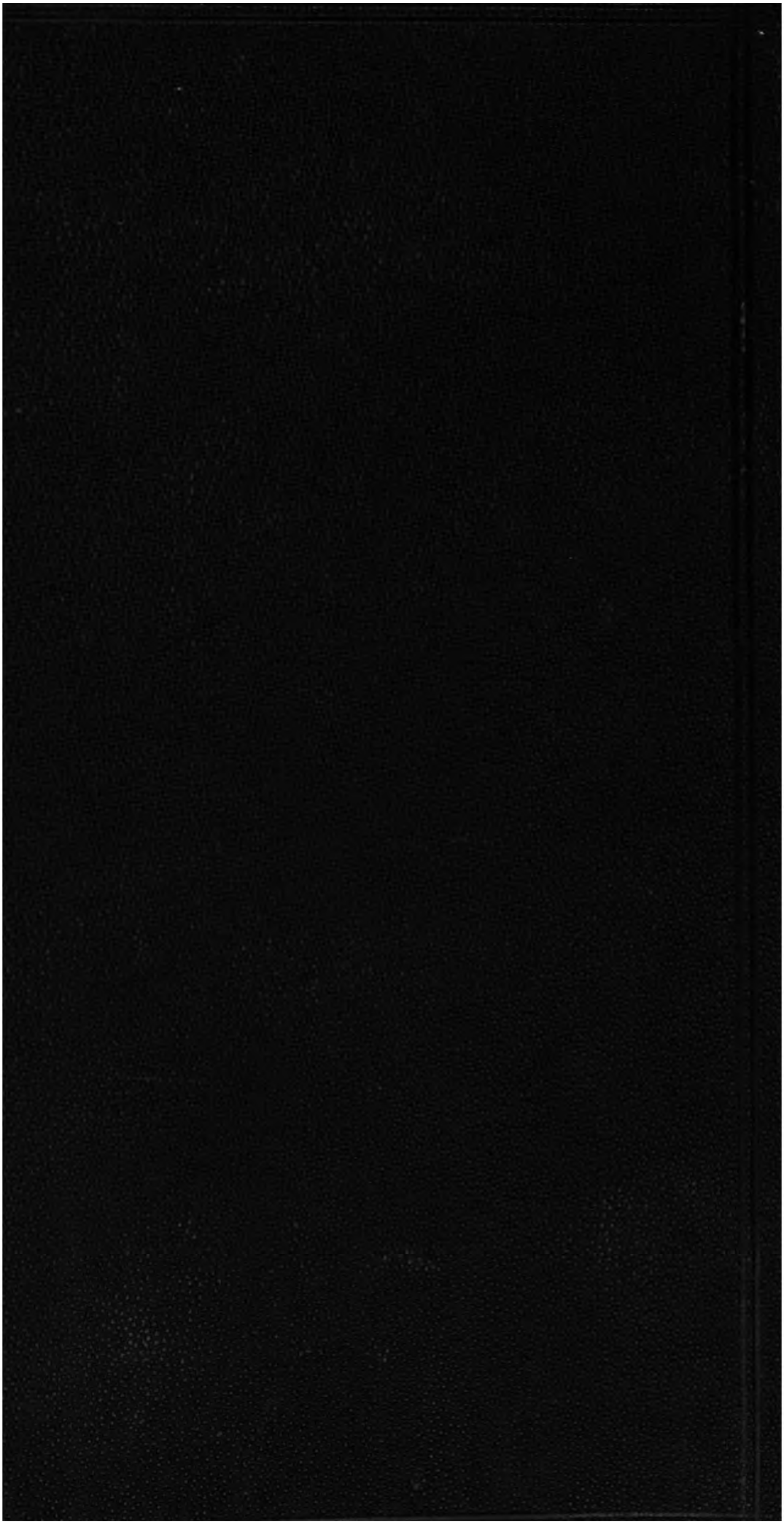

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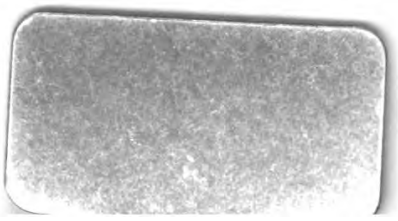

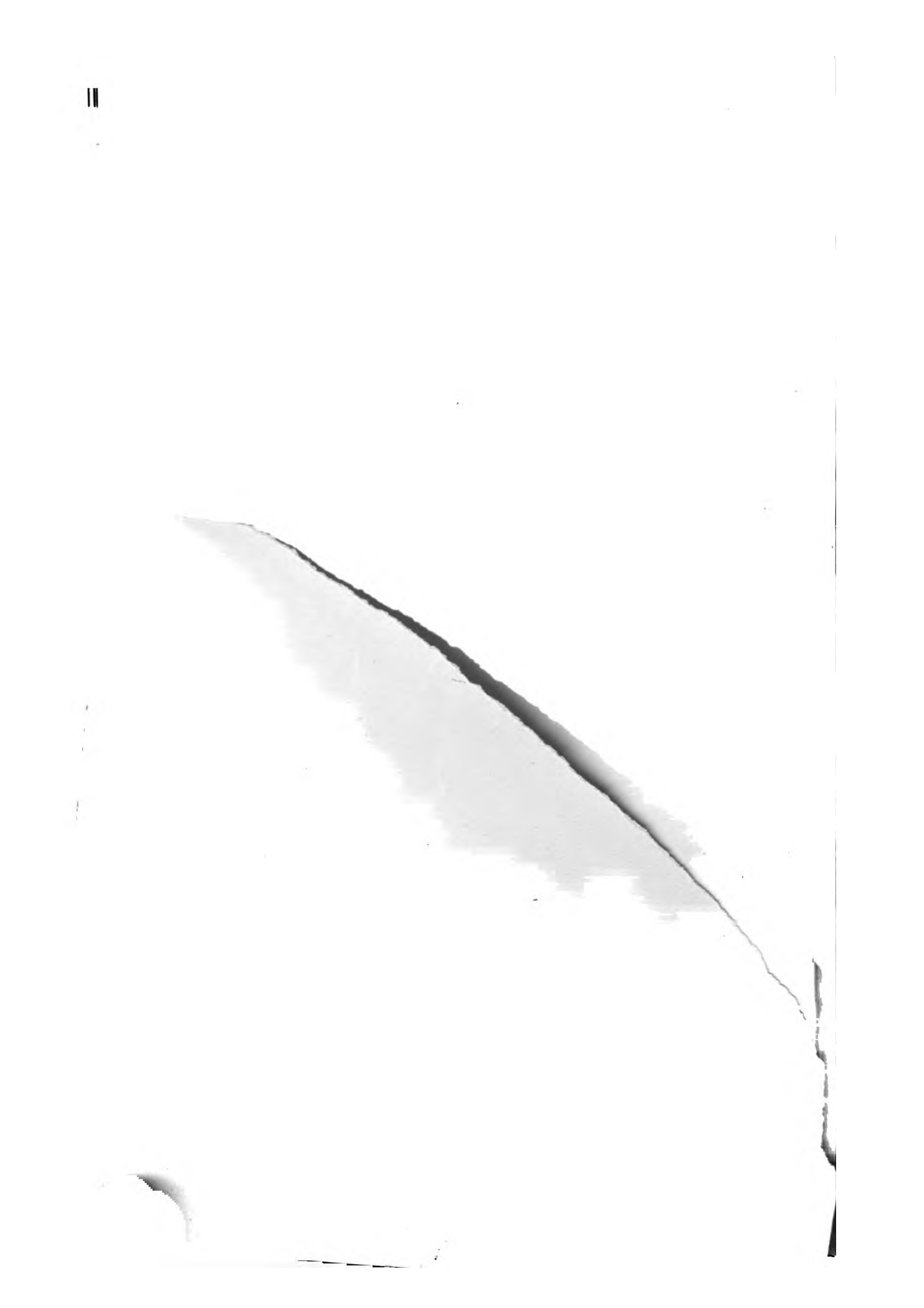

KANT'S

CRITICAL PHILOSOPHY.

DUBLIN:
PRINTED AT THE UNIVERSITY PRESS,
BY M. H. GILL.

PREFACE.

THE present work is intended to replace my translation of Kuno Fischer's Commentary on Kant's Philosophy, which is now nearly out of print. For though that Commentary, modified and corrected by many notes, was generally accepted in England as a fair exposition of the *Critick*, I am now persuaded that many more corrections were necessary, and that a Second Edition must contain throughout two expositions, one in the text, and another in the notes. It seemed therefore better to yield to the advice of many competent friends, and produce an independent work, profiting where I could by the German commentaries, but presenting to the reader a consistent and uniform text. I have adhered much more faithfully than Kuno Fischer, or indeed any other Commentator I have met, to Kant's text,

which I have followed paragraph by paragraph, shortening and simplifying, but shirking no difficulties. I have also marked all my own reflections with an asterisk, which refers only to the paragraph or chapter to which it is prefixed. It seems more advisable to do this than to encumber the book with foot-notes, which interrupt the reader's train of thought.

In the preface to my former work I hinted at the fancy for philosophical novelties in England, and endeavoured to call attention to Kant, as of all modern Germans the greatest philosopher, and certainly the best adapted for practical minds. At all events it is absurd to begin the study of Schelling or Hegel without a prior intimacy with Kant, and how many men are there now in England who thoroughly understand the Critical Philosophy? It is also a remarkable fact that within the last few years, philosophy even in Germany has reverted, as I ventured to predict, from modern extravagance to the soberness of Kant. Schelling and Hegel are forgotten; their works are not even in circulation; while controversies about Kant are agitating all the schools in Germany. His works are being re-

printed, illustrated, and attacked, on all sides. The sensual school have discovered that the refutation of Kant alone will give them a lawful victory, and to this task they are applying all their energies.

I hope to give in the second part of the first volume some account of these recent German controversies on Kant. In the part now published I have confined myself to the English school which stands opposed to him, and have submitted the views of the now fashionable Association School to a careful criticism. The influence of Mr. Grote and Mr. Mill, and the constant appointment of Mr. Bain as a State Examiner in Philosophy, have brought this way of thinking into undue prominence. All the youth of the country are being crammed with Mr. Bain's handbooks, and have neither time nor inducement to read an antidote. We must therefore look to the Universities for a fair hearing, and trust that there at least enlightened teachers will not accept as true what the State has made fashionable. The consideration which my former book received from this more competent public, encourages me to hope that my controversial chapter

on Mr. Mill and Mr. Bain will be either openly accepted, or refuted by argument. A lazy half-assent on such matters is of all things the most disheartening to an author, and the worst sign of the condition of Philosophy. I have to complain of this treatment at the hands of Mr. Lewes and Mr. Mill. The most important contribution to the better understanding of Kant, in my Edition of Kuno Fischer,[1] was the true explanation of Kant's refutation of idealism. A patent absurdity had been universally attributed to him, and I showed that his attitude had been totally misconceived. My argument was candidly accepted by both the above competent critics,[2] to whom I am much indebted for their general estimate of my book. Yet in a subsequent chapter (p. 190), Mr. Mill makes a statement distinctly charging Kant with the old absurdity. So Mr. Lewes, accepting my argument that the additions made to objects by sensibility have no claim to a separate existence (p. 544, *note*), leaves in a

[1] Introd., pp. xlix.-li.

[2] *Mill on Hamilton*, p. 36, *note*; Lewes' *Hist. of Philosophy*, i., p. 544.

previous page (p. 538) a statement directly inconsistent with it.

Such complaints were out of place, but for the friendly treatment I had received from these authors; and I sincerely trust that my sharply expressed differences from their opinions will be understood in a strictly philosophical sense, and not as implying any disrespect for their ability or earnestness.

It will appear strange to say that this study in German metaphysic is the work of stray leisure moments, and yet it is so; and I must plead my numerous and exacting official duties, not indeed to cloak any defects in the matter of the book, but for any negligences which a more careful revision of my proof-sheets might have removed. I had indeed the constant kind help of Dr. Toleken and Mr. Monck, two critics of the highest ability and learning, who corrected many errors, and made many suggestions; but rather in the substance than in the form. And I fear that a constant reading of Kant's clumsy periods is likely to react upon his commentator, and blunt the sense of clearness, and of the terseness so essential in explaining a difficult subject. While I

plead these difficulties and acknowledge these defects, I still hope that this book will be found a fuller and better exposition of Kant's *Critick* than those even of my German predecessors. It is a common mistake to think that because a man writes in German or holds a chair in a German University, he must therefore know more of this subject than one of ourselves. The most brilliant of the German Commentators is certainly Kuno Fischer, and yet it is now generally acknowledged that he is rather a *doctrinaire* than a Commentator, and that he tries to support his own views by discovering them in Kant. My former work contains ample proof of the assertion.

The scanty time at my disposal prompted me to bring out the work in instalments. I trust the second part of the first volume, containing the Analytic, will be ready next winter. The second volume, containing the Dialectic, will follow as soon as I can arrange the materials, which are long since sifted and prepared. The third volume is an independent book, containing *pièces justificatives*, and bringing before the English reader Kant's own compendious sketch of the chief points in his *Critick*.

It appears almost simultaneously with the present instalment, and can be obtained separately.

As the work is intended for English readers, I have referred uniformly to the translation of Kant's *Critick* in Bohn's Library, and to my own Edition of Kuno Fischer's Commentary. I may add that my other references are to the latest editions of the respective books, viz., the Sixth Edition of Mr. Mill's *Logic*, and the Third of his *Examination of Hamilton*, and the Fourth Edition of Mr. Lewes' *History of Philosophy*.

I conclude this Preface with the earnest hope that the many readers of my former book will find in this a maturer and clearer exposition of the same views.

TRINITY COLLEGE, DUBLIN,

March 16th, 1872.

CORRIGENDA.

Page 81, line 1, *for* anywhere, *read* merely.
,, 96, ,, 13, *dele* (A.)

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THE AESTHETIC,

WITH A CONTROVERSIAL CHAPTER ON THE EMPIRICAL DERIVATION OF SPACE.

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A CRITICAL COMMENTARY,

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CHAPTER I.

THE TWO PREFACES.

§ 1.* THE philosophical student who has been discouraged from opening the Critick of the Pure Reason, by its reputation for obscurity and difficulty, will be agreeably surprised by the clearness and the elegance of Kant's first Preface. So easy is the flow of thought, so felicitous the choice of expression, that we can only find stray hints of the arduous task that awaits us. The explanations of a commentator are almost needless, and his analysis cannot do better than adhere as closely as possible to the rich and suggestive language of the great philosopher himself.[1]

[1] Mr. Lewes' remarks (*History of Philosophy*, ii., p. 458) are in the first place too severe, and in the second place unjust, as they omit to mention the genuine and even sublime eloquence of some of Kant's writings. I may notice that Kuno Fischer's Commentary is silent on these Prefaces, *the second of which utterly destroys his theory as to Kant's idealism.*

§ 2. Among the various branches of human knowledge, says Kant, there is one in regard to which our reason is condemned to a very strange lot, being troubled with questions which we cannot decline, seeing that they are forced upon us by our very nature, but which nevertheless we cannot answer, since they transcend all our faculties.

Our reason falls into these perplexities unawares. It commences from principles obtained and established by experience. From these it proceeds, according to its nature, to ascend higher, and to approach more remote conditions. But we soon discover that such a pursuit will never end, because fresh questions are ever starting up. Under these circumstances, nothing remains but to take refuge in first principles which transcend all experience, and which, nevertheless, excite so little suspicion that even the common sense of mankind does not quarrel with them. These however lead the reason into such obscurities and contradictions that we cannot but infer the presence of some hidden errors. Yet the discovery of these errors is impossible; because the principles adopted by the reason, as they transcend completely the limits of experience, will neither acknowledge nor submit to any test which originates within these limits. This arena of endless dispute is called METAPHYSIC (or Ontology). There was a time when her claims to be called Queen of the Sciences were admitted by all. It is now the

fashion to despise her, and, like the mourning Hecuba, she sits forgotten and forlorn; in the words of Ovid: *Modo maxima rerum, tot generis natisque potens—nunc trahor exul inops!*

At first her rule, under the administration of the *Dogmatists*, was despotic. But this barbarous form of government degenerated through internal dissensions into complete anarchy; and the *Sceptics*, a sort of nomads who hate all settled conditions, periodically scattered the community. But they were too few in number to prevent mankind from continually attempting a reconstruction, though without any fixed or consistent principle. It seemed indeed once, in later times, as if the celebrated Locke's Physiology of the Human Understanding would put an end to the disputes, and settle for ever the lofty claims of Metaphysic. But no sooner had the descent of the pretended queen been traced to the low origin of common experience, and her assumptions accordingly questioned, than this *genealogy* was found out to be fictitious, and accordingly she persisted in her claims. And so things returned to the antiquated and rotten dogmatism, and to the consequent contempt in which the science was held. Now that men think every path has been tried in vain, disgust prevails and total indifference, the mother of chaos and of night in the sciences, but the prelude of a better day.

For it is vain to assume an artificial indifference

on subjects which *cannot be indifferent* to human nature; and the pretended *indifferentists*, though they may endeavour to disguise it by assuming a popular garb, are ever falling back into the metaphysical assertions which they profess to despise. Nevertheless, this indifferentism is a phenomenon deserving our deepest attention. It is the result of the ripe judgment of our age, which will no longer tolerate insecurity or false pretence. We hear[1] indeed complaints of shallowness, and of the decay of sound science. But well-founded sciences, such as mathematics and physics, refute this calumny, not merely by holding their ground, but even by making great onward strides. So would other branches of knowledge progress also, were their principles placed on a firm basis. 'In default of this indispensable requisite, doubt, indifference, and severe critick are rather evidences of a thoroughgoing spirit. Our age is the proper age of critick (criticism), to which everything must submit. *Religion* desires to escape by its *sanctity*, *Legislation* by its *majesty*.' They consequently excite just suspicion, when contrasted with those sciences which have freely and fairly met the test.

Reason is therefore challenged to begin afresh that most difficult task, the knowledge of itself, and establish its claims, not by oracular dicta, but ac-

[1] Cf. the first note in this Preface.

cording to fixed and unchangeable laws. The court which must decide this issue is the *Critick of the Pure Reason* itself.

This does not mean a critick of books and systems, but of the faculty of reason, as regards what knowledge it may attain, *apart from all experience.* It is in other words the deciding of the possibility or impossibility of metaphysic in general, and the determining of its sources, extent and bounds, exclusively from *à priori* principles.

This path, says Kant, I have pursued, and flatter myself I have discovered the source of all the errors which divided reason against itself. I have not evaded these questions by falling back upon the impotence of the human reason, but have determined them completely from principles, and after discovering the point at which reason fell into a misunderstanding with itself, have completely and satisfactorily solved them. I have aimed at completeness above all things, and I venture to say there is not a single metaphysical problem which is not either solved or provided with a key for its solution in this book. Pure reason being a unity complete in itself, any analysis which fails to solve a single question fairly suggested concerning it must be cast aside as perfectly idle.

The reader need not wonder at these pretensions as boastful and impertinent. They are infinitely more modest than the program of any ordinary

system that pretends to prove the simple nature of the *soul*, or the first origin of the *world*. For these things far transcend the limits of all experience, whereas the present work merely analyses the reason and its pure thinking. It is in fact to be compared to common Logic, which analyses completely all the simple operations of thought, 'except that the question here proposed is, how much can we attain through these operations if deprived of all the materials and the assistance of experience.'

If, then, the *matter* of the book must be complete and explicit, it may also fairly be demanded that the *form* of its demonstrations should be *certain* and *clear*. Of course all mere *opinion* is worthless, when we seek to establish *a priori* knowledge. But it is for the reader to judge whether the grounds advanced by the author are certain, and equal to his pretensions. He has already asserted that he considers this quality absolutely indispensable. Some few points, however, which are not essential to the work might possibly excite suspicion, and may, therefore, be pointed out beforehand.[1]

There is no investigation more important, or that has given the author more trouble, than the so-called *Deduction of the Pure Categories*. This investigation has two sides. The first concerns the

[1] As the reader can hardly understand them, before he has mastered the passages in question, he will be reminded of these explanations at the proper places.

objects of the pure understanding, and is intended to explain the objective validity of its *a priori* concepts concerning them. This is an essential part of Kant's plan, since it shows what the understanding and the reason can know, apart from all experience. It stands upon a basis perfectly independent of the second side of the deduction, which considers the understanding *subjectively*, and endeavours to analyse its faculties. 'As the question, How is the faculty of thought itself possible? can only be answered by inferring a cause from its effects, my solution,' says Kant, 'may seem (though this is not really the case) to be a mere hypothesis, and the reader may think himself at liberty to differ from me.' But this will not invalidate the former side of the argument.[1]

As to *clearness*, the reader has a right to expect logical clearness in the arguments, which has been carefully attended to, and also aesthetical and intuitive clearness, by means of sufficient examples and illustrations. The length and intricacy of the discussion have compelled the author to dispense with these to an extent he did not originally intend. A general survey of a system is often impeded by these illustrations, and '*many a book would have been far clearer if the author had not endeavoured to make it so clear.*'

[1] The reader should bear in mind that this passage refers to the First Edition of the Critick.

Metaphysic is the only science, as we shall show, which is capable of absolute completion within a short time, by means of united efforts; for it is nothing but the systematic *inventory* of what we possess by *pure Reason*. Nothing can here escape us;[1] nor can any experience increase our knowledge. By means of the present Critick the ground has been cleared and prepared, and here the reader must perform the part of an impartial judge. When we proceed to build up the system of pure reason, under the title 'Metaphysic of Nature,' he should join us as a zealous co-operator, especially as the investigation of these details is easy, and more a recreation than a difficult task.

§ 3.* Such in substance, and to a great extent, in words, was the remarkable Preface with which Kant introduced his great treatise to the philosophic world. It bears a strong family likeness to the utterances of other intellectual reformers, and suggests the mental attitude of Bacon and of Descartes, of Locke and of Hume. There is the same boldness in asserting the discovery, and the same modesty in attributing it, not to genius, but to method. There are the same hopes of a speedy termination of error, the same conviction that even ordinary minds,

[1] This is one of the many passages which indicate that Kant laid little stress on what are called unconscious modifications of mind.

when armed with proper weapons, can help in the victory.

Kant's analogy to Bacon was indeed so striking, that he prefixed to his second edition a memorable motto from the Preface to the Instauratio Magna—'De nobis ipsis silemus. De re autem, quae agitur, petimus, ut homines eam non opinionem sed opus esse cogitent: ac pro certo habeant, non sectae nos alicuius, aut placiti, sed utilitatis et amplitudinis humanae fundamenta moliri. Deinde ut suis commodis aequi—in commune consulant, et ipsi in partem veniant. Praeterea ut bene sperent, neque instaurationem nostram ut quiddam infinitum et ultra mortale fingant et animo concipiant; quum revera sit infiniti erroris finis et terminus legitimus.'

In his first Preface, therefore, Kant explained the *historical* position of the Critick, and announced that he was about to revolutionise philosophy by a new method. And yet similar claims had often before been made, and had hitherto failed. What was the peculiar novelty of Kant's method which inspired him with such extraordinary confidence? How did he discover it? In the Preface to the Second Edition, published in 1787, six years after the first, these questions are fully answered; and, furthermore, the positive practical results of his apparently negative and speculative system are brought before the reader. This second Preface is therefore a material improvement to the work, and

is of peculiar interest, as disclosing to us the line of thought that led Kant to his discoveries.[1]

§ 4. 'We can easily determine,' says Kant, 'whether we are pursuing any branch of knowledge *scientifically* by our success in attaining results. If after much preparation, we are constantly coming to a standstill, and are obliged to recommence, and if our fellow-labourers cannot agree with us how our common object is to be pursued, our proceeding is no science, but a mere groping in the dark, which we shall do well to abandon, even with the sacrifice of many lofty aspirations.'

The history of any recognised science will prove this position. Consider *Logic.* Since Aristotle it has never lost one inch of ground. But what is far stranger, it has never gained anything either, and appears to be complete and settled. If modern writers have attempted to enlarge it by *psychological* chapters on the human faculties, or *metaphysical* on the nature of certainty, or *anthropological* on human prejudices, they have merely shown their ignorance of its nature. 'We do not enlarge, but disfigure sciences, by confusing their boundaries.' And the boundaries of Logic are strictly determined as the science which expounds the formal laws of all

[1] Thus, at the very outset, those philosophers are in error who affirm that this Second Edition is no improvement on the first.

thought, and nothing but thought. The success of Logic is, however, owing to its narrow scope; for Logic is forbidden to consider any of the objects of knowledge, and must confine itself to the understanding and its form. It is accordingly but the outer court of those proper sciences which add to our real knowledge. With far more difficulty did reason enter upon the strict path of science, when objects also were concerned.

If such sciences are to be rational, they must contain *a priori* knowledge,[1] and this knowledge of the reason may be related to the object in two ways—either as merely determining it (when given from elsewhere) or as *actually creating it.* This latter is the *practical* cognition of the reason, as when it produces from itself, for example, the idea of *duty.* The former is *theoretical* cognition. In either case the direst confusion must result, if the *pure* part, in which the reason determines its object altogether *a priori*, be not separately treated.[2]

Mathematics and *Physics* are the two theoretical

[1] So far as this means *power of prediction*, no one will dispute it.

[2] Kant in no way implies that these different parts of cognition are *given* separately, but says that if we confuse them in our *treatment*, we are like men spending money without keeping accounts, and then unable to ascertain what part of their outlay can be diminished, when economy becomes necessary.

branches of rational knowledge which aim at determining their objects *a priori*—the former quite purely, the latter partly so. Mathematics attained the safe position of a science long since among the Greeks. Yet this does not prove that its safe highway was constructed easily, as in Logic. Kant thinks that for centuries, especially among the Egyptians, it consisted in mere groping, and that the great change was owing to a *Revolution*, produced by a happy thought of some forgotten genius. He notices that even in later times the discoverers of special principles were remembered, though these principles were unimportant; and this he ascribes to the indelible effect produced by the first great Revolution.

In what did this Revolution consist? 'Whoever it was,' says Kant, 'that first demonstrated the equality of the [base] angles of an *isosceles* triangle found[1] new light dawning upon him; for he found *that he could not trace out and learn the properties of the figure from what he saw in it, or from mere thinking about it, but rather from what he had added to the figure in his own mind a priori, and had then represented by a construction. He also found that all the*

[1] 'Who first demonstrated the right-angled triangle' is Mr. Lewes' translation, which makes no sense. He was probably misled by a clerical error (equilateral) noticed by Kant himself in one of his letters.

safe a priori knowledge he could obtain about it was merely the necessary consequence of what he had himself introduced into it, according to his own concepts.[1] This statement may well be regarded as the very corner-stone of all Kant's discoveries.

In natural philosophy progress was far slower, and it is only since the days of Bacon that it has attained the highway of science. But even from an empirical point of view there is a close analogy in its history to mathematics. When Galileo and Torricelli and Stahl began to make their well-known experiments, the same light dawned upon them also. They comprehended that reason discovers what it produces according to its own plans; that it must, so to speak, take the initiative, according

[1] Mr. Lewes' translation of this passage (*Hist. of Phil.* ii., p. 467) appears, through some oversight, not to be even grammatical, and moreover obscures the point of the argument. Mr. Meiklejohn's translation would here have afforded him a fair version. His interpretation of the passage is equally erroneous; for he thinks Kant is insisting on the metaphysical method as opposed to the experimental, and is highly indignant at the proposal to study nature through our ideas. But Kant is really showing the vast superiority of the experimental method over that of mere observation. In the latter case the mind can only note down occurrences; in the former it approaches the facts *with a theory of its own construction*, and compels nature to say whether the facts conform to it or not. Surely this just difference is acknowledged by every scientific inquirer. The next paragraph should have made the point plain to a careful critic.

to fixed principles supplied by itself, and compel Nature to reply, instead of waiting upon her for instruction, since chance observations are not connected by such necessary laws as the reason seeks and requires. Those phenomena alone, that agree with some fixed principle of the reason, can be regarded as laws of nature. 'Armed with such principles, then, in one hand, and with experiments framed according to them in the other, our reason must approach nature, to learn from her not in the capacity of a scholar, but in that of a judge, who compels his witnesses to give their evidence. And so even Physics owes its happy revolution to the idea of seeking from (*not inventing for*) nature that information, *of which reason could know nothing of itself*, according to what reason had itself introduced into nature.'[1] Up to this discovery physical philosophers were merely groping in the dark.

Metaphysic has not hitherto been so fortunate. It is a peculiar and isolated branch of knowledge, aiming at what lies beyond experience, and concerning itself with pure concepts, without representing them in figures, like mathematics. And here men have been constantly meeting with checks, and endeavouring to begin afresh, so that the science may be compared to the arena of a tournament, in which

[1] I have marked the italics by way of answer to Mr. Lewes' criticism.

none can establish any lasting possession. This is evidently mere groping in the dark, and among pure concepts too, where verification is not easy.

Why has the highroad of science not been discovered in this branch of our knowledge? Is it imaginary? Then why has our nature been visited with such unavoidable and restless longing? and can we trust it in other things, if it here proves a delusion and a snare? Or is it our fault, and have we hitherto failed to discover the right way, for want of the proper method?

Surely the examples of Mathematic and Physic, remodelled by a sudden revolution, are sufficiently remarkable to induce us to make a similar attempt in Metaphysic, for they are obviously analogous to it as rational cognitions. Hitherto it was assumed that our knowledge of objects must conform to them, and all attempts to extend it *a priori*, by means of pure thinking, have failed. Let us attempt the problem of Metaphysic, under the assumption that the objects must conform to our faculty of knowing them, an assumption which at first sight agrees better with the required possibility of knowing objects *a priori*—that is, of determining something concerning them before they are given to us.

'This idea resembles that of Copernicus, who, when he found that the motions of the stars could not be explained by assuming them to revolve round the spectator, tried the effect of making the spec-

tator revolve, and the stars remain at rest.' In Metaphysic a similar attempt can be made as regards the *intuition* of objects. And Kant made this attempt successfully some years before he discovered how to make it in the other parts of the science. If our intuition must conform to the nature of its objects, how can we know anything *a priori* about these objects? If the object must conform to the peculiar nature of our intuiting faculty, we may easily do so.

But we cannot stop at intuitions, and are compelled to consider them as representations of some object which we endeavour to determine through them. This object then must be *conceived*. I may either assume that the *concepts* by which I determine the object conform to it, and then arises the old difficulty of obtaining any *a priori* knowledge; or I may assume that the objects conform to these concepts. If I change the expression, and say that *experience* conforms to my concepts, the result is the same. For in and through experience alone do the objects become known to us. This assumption then seems to promise good results, for experience is a species of knowledge, and knowledge presupposes the understanding that knows. The understanding again presupposes certain rules, by which it acts, and these rules must be considered logically prior to the objects given through them. If we wish to express these rules, we can only do so by *a*

priori concepts, to which, accordingly, the objects of experience must necessarily conform. Such is the result attained by Kant's Analytic, and these *a priori* rules, by which the Understanding proceeds, when it applies itself to experience, are the Kantian Categories. There are other objects of which the Reason alone forms Ideas, and indeed is bound to do so, but which cannot be given in experience, or at least given as they are thought by the Reason. In our attempts to think these objects we shall find an excellent test of our new way of regarding the problem, which is founded on the principle that we can only know that *a priori* of objects, which we have ourselves introduced into them.[1]

This method, Kant adds, in a note, is borrowed from physical science, and consists in seeking the elements of the pure reason in such a way *that our results can be confirmed or refuted by an experiment.* We cannot indeed make experiments with the *objects* of the pure reason (as in natural philosophy), for they are ever beyond the bounds of all experience. But we can do it with the *concepts* and *principles* which we assume *a priori*, by so arranging them that the same objects can be regarded from two different aspects—first, as objects of sense and understanding suited to our experience; secondly, as objects that are only thought, and suited to the isolated Reason,

[1] Mr. Mill in citing this passage (*Exam. of Hamilton*, pp. 31–2) omits the important words *a priori*.

transcending all experience. If we find that, when things are regarded from this double point of view, our reason is at harmony with itself, but if from a single point, unavoidable contradictions arise, then the experiment has proved the justice of our distinction.[1]

Our attempt succeeds perfectly, and promises Metaphysic the sure path of science in its first part, which is concerned about such pure concepts as can have corresponding objects given in experience. The possibility of *a priori* knowledge can now be perfectly explained, and the laws which lie *a priori* at the base of nature (in the sense above explained) can now for the first time be satisfactorily proved. But there results a conclusion very adverse to the second part of Metaphysic, which is that we can never advance beyond the bounds of experience; and yet this was the chief object of the science. 'Nevertheless, this very result tests the truth of our first estimate of rational knowledge, which was that it concerns phenomena, and abandons the thing *per se* as real indeed in itself, but unknown to us.' The Reason, indeed, necessarily requires the Unconditioned to complete the series of conditions we find in phenomena.

[1] Kant's second Preface was written in answer to the criticisms and controversies excited by the First Edition, and therefore implies a general knowledge of the book, without which the following observations are necessarily obscure.

We cannot comprehend our mental phenomena without presupposing necessarily a substance called Mind, beyond and beneath all its various manifestations. This illustration will explain what Kant means by the necessary belief in the Unconditioned.

Supposing that as long as we assume our empirical knowledge to conform to objects as things *per se*, the Unconditioned *cannot possibly be conceived without contradictions*, but that assuming objects, as mere phenomena, to conform to our manner of representing them to ourselves, *the contradiction vanishes* (by confining the Unconditioned to things *per se*), then the latter assumption is established. We may however be able, on practical grounds, to re-establish *a priori* what has been shown to be unattainable by the speculative reason. In fact, the ground may have been only cleared for such a result. (This test, as Kant's note says, is similar to that employed in chemistry, where the elements which have been separated by analysis are again combined to reproduce the original substance. Our *Analysis* separates pure *a priori* knowledge into two heterogeneous elements, viz., things as phenomena, and things *per se*. Our *Dialectic* combines them again into harmony with the necessary Idea of the *Unconditioned*, and finds that this can only be done by adopting the distinction.) Kant expressly tells us he has adopted this hypothetical way of

stating his conclusions, in order to show the train of thought by which he arrived at them. He insists that they have been perfectly established in his work, by the nature of Space and Time, and of the Categories. Copernicus' theories were at first mere hypotheses; they ended not only by being demonstrated, but by leading to the establishment of Newton's Law of Gravitation, which could never have been discovered had the former not been assumed.

In this attempt, then, made after the model of geometers and physical inquirers, consists the Critick of the pure reason. It is a treatise on the method, and not a completed system, of the science known as Metaphysic. But owing to the unity and completeness of reason within itself, the outline of the science is indicated by our method, and for the same reason metaphysic, like logic, is capable of completion once for all, when the faculties of the human mind have been surveyed in their nature and their use.

But what, it may be asked, is the value of this Critick? It appears to be at first sight only *negative*, prohibiting our speculative reason from transgressing the bounds of experience. This is indeed its first use. But this use becomes *positive*, when we consider that previous attempts have, as a necessary consequence, so extended the bounds of mere sense, as to interfere seriously with the proper

practical use of the reason. For if such a *practical* use be necessary to morality, though it cannot be assisted by speculation, it must be secured against interference. You might as well say the police were of no positive use, because it is their negative duty to prevent peaceable citizens from being molested in the pursuit of their business. The analytical part of the Critick shows that we cannot possibly have any speculative knowledge beyond the bounds of experience.

But it must be carefully observed, that though we cannot *know* objects as things *per se*, we are able to *think* them. (In order to know a thing, I must be able to prove its possibility either from experience or the pure reason. But I can *think* what I like, provided I do not contradict myself. This thought is however only logically possible, and requires something additional to make it really possible; but this addition need not be sought in theoretical sources, but in practical also.) 'If we were unable to *think* things *per se* there would follow the absurdity of an appearance, without anything to appear.' Now let us suppose our distinction of things *per se* and phenomena had not been made. If so, the law of causality must bind all beings absolutely. It would follow that the Soul, from our single point of view, could not be regarded as free in its volitions, for they are subject to causality. But the Critick teaches us to regard it from two points, as a thing *per se*, and as a phenomenon.

From this latter point of view, its visible actions cannot indeed be free, but the result is different when we regard it from the former. Without, therefore, being able to *know* my soul as free, I liberate my attempt to *think* it such from an apparent contradiction.[1] Suppose, now, that the freedom of the will were one of the conditions, without which practical morality were impossible, but that the speculative reason had proved such an idea contradictory to itself, then freedom must give away, and with it morality, to make place for the necessity of natural causes. From such a result we are saved by the Critick.

The same great positive uses can be shown in our ideas of God and of immortality. These cannot even be *assumed* without checking the impertinences of the speculative reason, which, by applying its empirical principles where they are inapplicable, asserts all *practical extension* of the reason to be impossible. Such *knowledge* is the real source of immoral unbelief, and must be ordered to make way for *faith.* We aim then at improving the reason of

[1] It must be carefully remembered that in this remarkable discussion (*Critick, Antinomy*, &c., sec. 9), Kant professed to prove, not the existence of freedom, nor its probability, nor even its possibility, but simply that it was not necessarily contradictory to causality. (See Critick, p. 345.) This guarded attitude has not been transferred to Mr. Lewes' exposition (*Hist. of Phil.* ii., p. 519).

our posterity by setting them to study a sober science, and saving them from wasting time and trouble on idle groping and pretentious dogmatism. Above all, we hope to dispose of all objections against morality and religion after the manner of Socrates, by proving clearly the ignorance of the objectors.

And if there be any supposed loss in the surrender of the claims made by the reason, the loss affects the *monopoly of the schools*, not the *interests of humanity*. Were the doctrines of the immortality of the soul, and of the existence of God, ever really established by the subtile arguments and distinctions of the schools? Has it not been confessed, even by their authors, that the public are unable to grasp such refinements, and that the former was rather proved by the profound inadequacy of the present life to satisfy our aspirations, and the latter by the harmony, beauty, and kindness of nature? These proofs rather gain than lose, for the schools are taught to pretend to no deeper knowledge, and to confine themselves to the arguments that are accepted by the many, instead of arrogating to themselves the sole possession of such truth. But the schools remain in the possession of a science most useful to the public, though the fact is not recognised; a science which cannot and need not ever be popular, which refutes the arguments of the philosophers who mystify the public, by objections equally subtile, but

saves them from drifting unconsciously into the assumptions and the quarrels that have hitherto disgraced metaphysic. 'Only by means of this science—the Critick of the Pure Reason—can *Materialism*, *Atheism*, *Fatalism*, *Enthusiasm*, and *Superstition* be disarmed. We also cut away the very roots of *idealism* and *scepticism*, but this rather affects the schools than the mass of mankind. It would be far more rational of governments to support such a science, than to countenance the ridiculous dogmatism of the schools, which raise an alarm about the public safety, when their cobwebs are torn in shreds, though the public neither notice nor miss them.' The reader will not fail to remember how very similar, even in expression, was the design of Bishop Berkeley.

Our Critick is not opposed to the *dogmatic procedure* of the reason in its pure cognition as a science, for every pure science must demonstrate dogmatically, that is to say, from sure principles strictly *a priori*. It is opposed to *dogmatism*, which is the dogmatic procedure of the reason *without previous criticism of its faculties*. But we do not therefore support shallow talking, which pretends to be popular, or scepticism, which abolishes all metaphysic. We rather establish this science on a sound and systematic, not on a popular, basis, and in its development must follow the steps of the great dogmatic philosopher, Wolf, who may be regarded the originator of thorough-

going and systematic inquiry in Germany. Had his ground been critically prepared, he might indeed have established metaphysic as a science.

§ 5.* These reflections, which agree closely with the analytical and popular account Kant has given of his discoveries in the *Prolegomena* (published in 1783), conclude the exposition of his method and its results. There remains an explanation of the changes introduced into his second Edition, a subject of lesser importance, had not Schopenhauer made his pretended discovery that these two Editions differed very materially, not only in exposition, but in doctrine. It was said that Kant had become afraid of the idealistic conclusions drawn from his principles, and had suppressed the passages which resolve the whole external object into our own sensations, and their form (imposed by the mind also). More particularly, there was one paragraph inserted into the Deduction of the Categories which distinctly states that the matter of our intuitions is given by a source apart from, and independent of, the understanding;[1] and a refutation of idealism was introduced into the Principles of the pure understanding, in which Kant attempted to prove that the objective existence of things in space, is the condition of our internal experience. Above all, in the First Edition

[1] § 17, p. 89, of Mr. Meiklejohn's Translation, to which I refer throughout.

the distinction between soul and body was explained to be a difference, not of substance (of which we know nothing), but of representation; and from this point of view the community or relation of both was discussed. This was supposed to be contradicted or extenuated in the Second and following Editions, for the purpose, Kuno Fischer thinks, of gaining adherents. The question therefore assumes considerable importance; for it must determine, in the first place, the degree of Kant's own conviction as to the truth of his doctrine; and secondly, the real import of his system.

Let us then first of all consult the author himself, and consider what he says in his second and more elaborate Preface[1]:—'As regards this Second Edition, I naturally did not wish to let the opportunity escape of remedying, as far as possible, the difficulties and the obscurity from which may have arisen the sundry misapprehensions, that have occurred to many acute men (perhaps without my fault), in their estimate of this work. *In the positions themselves, and the grounds of proof, as well as in the form and completeness of the plan, I have found nothing to alter;* a fact which must be ascribed partly to the long consideration to which I submitted my work previous to its publication, partly to the nature of the subject itself, I mean the constitution of a purely

[1] The silence of Kuno Fischer as to these two Prefaces is very remarkable.

speculative reason, which contains a veritable system of members, where everything is organic—that is, where the whole is for the sake of each individual part, and each individual part for the sake of the whole; so that any defect, however trifling, whether it be a positive error, or a mere deficiency, is certain to betray itself in use.[1] . . . But in the *exposition* much remains to be done, and in this respect I have attempted to improve this Second Edition, with the intention of clearing away, partly, the misapprehensions of the Aesthetic, especially of the concept of Time;[2] partly the *obscurity in the Deduction* of the Categories;[3] partly to supply the supposed want of sufficient evidence in the demonstrations of the Principles of the Pure Understanding;[4] partly, in fine, to remove misapprehension as to the Paralogisms laid to the charge of Rational Psychology[5] . . . But the necessary consequence of this improvement,

[1] Cf. p. xxxix. of the Critick.

[2] Kant added Section i. § 6, on Time, and the General Remarks, ii.–iv. (p. 41–3). In his Introduction, Sections i. and ii. were greatly expanded, and v. and vi. added.

[3] From Section ii. § 11, of the Transcendental Logic to the end of the Deduction it was completely rewritten.

[4] Under each of the Definitions of the Principles (with the exception of the Postulates) the first paragraph, headed 'proof,' was added; as well as two Appendices, entitled 'General Remarks on the System of Principles,' and the Refutation of idealism, on which he also adds a note in the second Preface.

[5] From the words, 'but we shall, for brevity's sake' (p. 241), the whole discussion was rewritten.

except we made the work altogether too long, is a slight loss to the reader, since a good deal (that did not indeed belong substantially to the completeness of the whole) must be omitted, or put into a shorter form,[1] which, nevertheless, many readers might not wish to lose. This was done to make room for my present, and I venture to hope now intelligible exposition, which in substance, as regards the propositions, and even in their method of proof, CHANGES ABSOLUTELY NOTHING; but still varies [from the former] here and there in the method of the exposition in such a manner as could not be managed by interpolation. This slight loss, *which, by the way, can be supplied, if any one chooses, by* a *comparison with the First Edition*, is, I hope, more than counterbalanced by the greater clearness' [of the present Edition.][2]

In the face of this declaration, which explicitly asserts that nothing whatever has been altered in the system, and which invites the reader to compare the two Editions, we are told that the Second Edition is a mutilated, distorted, and depraved work, caused by the weakness of old age, and the fear of

[1] The third chapter of the Analytic (on Phenomena and Noümena), and the Refutation of Rational Psychology, were considerably shortened, part of the latter reappearing in the *Refutation of idealism*. The Deduction of the Categories is likewise abbreviated.

[2] Cf. p. xli. of the Critick.

public opinion in Kant! It can be proved by the theological attitude of this, and of his later works, that these charges are perfectly absurd. It will be also shown in the course of this work that the supposed evidence of the theory is derived from a series of blunders and oversights (if not actual suppressions) in the interpretation of Kant's very clear, though not dogmatic declarations.

As Schopenhauer's opinion is fashionable in Germany, I do not wish to open the discussion without giving the reader the means of judging for himself, by comparing the two Editions; he will find, accordingly, in the foot-notes and in the appendices to the third volume of this work all the passages of any importance which appear in the First Edition only. The results of my own comparison are simply these: that we may safely defy the advocates of the First Edition to find any doctrine there stated to which there is not a corresponding assertion in the Second; or to point out a supposed alteration in the Second Edition which we cannot prove to be supported by quotations from the original work.[1]

[1] In Vol. III., Appendix C, are added short foot-notes showing the special points of agreement ignored by the critics, and explaining the supposed points of difference; and these will save us in this place from quotations, as well as from the discussion of them. The vacillating attitude of Mr. Mill and Mr. Lewes on this question has been noted in my Preface:

The assertion of the honest author is most decidedly true; in the propositions themselves, and even in their proof, *absolutely nothing* has been changed.

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they seem unable to resist the force of my argument, but at the same time they will not accept thoroughly the conclusions which these arguments justify. The long note in the second Preface, which refers to the Refutation of idealism, and endeavours to improve the form of his proof, will best be discussed in connexion with the passage to which it refers. The reader may therefore pass it by for the present.

CHAPTER II.

THE INTRODUCTION.

PRELIMINARY CONSIDERATIONS.—*The Distinction in Kind between the Cognitive Faculties.*

IT is evident from the considerations urged in the Preface, that an exact notion of the human faculties lies at the basis of Kant's inquiry. He investigates the object through the subject and its conditions. What then are the faculties which teach us all we know of things? The general answer was given long ago, according to which they have been unanimously divided by philosophers into two classes: on the one hand, sense, sensation, external intuition or impressions from without; on the other, intellect, reflection, internal intuition, thought.[1] But while this distinction was generally admitted, there had ever been an *a priori* fallacy afloat (as Mr. Mill would say), that only one kind of knowledge could be true, and that all the information given us from other sources than this, must be either illusory or defective. Hence Kant, who discussed the sub-

[1] It will be seen however that Kant distinguishes between internal intuition and thought, as indeed Locke had done before him.

ject in several shorter treatises prior to his Critick, notices, that under this assumption sensibility and understanding had been in turn exalted into the sole source of true knowledge. The idealists, from Plato to Leibnitz, had mistrusted the senses, and considered sensibility a mere vague and confused copy of the reality attained by thought. The sensualists, from Epicurus to Condillac, had considered the senses as the primary source from which the understanding compounded and abstracted a faint reproduction of the external reality. While, therefore, idealists and realists[1] are opposed diametrically as to the true cognitive faculty, they agree in one point, that sensibility and understanding differ *in degree* only.

If Kant had joined either party it would certainly have been that of the idealists. But he perceived that the clearest of all our knowledge, that of geometrical figures, was given by sense, and that many concepts of the understanding, such as the notion of right, could only be apprehended with great difficulty. He concluded that there were two cognitive faculties, totally distinct, and differing *in kind*, sen-

[1] It has been customary in English Philosophy to confine the term *Realist* to those among the schoolmen who asserted the separate existence of *general* ideas, as opposed to Nominalists. There is no reason for this restriction. The term is here used to mean the philosophers who assert the separate existence of our external percepts, as opposed to the idealists.

sibility and understanding. This position is the basis of the whole critical philosophy. Kant himself has explicitly argued this point, and asserted this generic distinction, and any commentator who endeavours to refine it away, by speaking of these faculties as mere laws of development,[1] or by insisting that it is after all the same mind that knows in either case,[2] must be rejected as an uncertain guide. It is even questionable whether we should designate them both under the same name of faculty; for we shall see that sensibility is *a receptivity* in some respects passive, and understanding *an active spontaneity*.[3] We find, indeed, at a later stage of the Critick, a third faculty introduced, and called the Reason, as distinguished from the understanding. But if we attend to Kant's own explanation,[4] he tells us 'that the Reason does not give birth to any [new] concept, but only frees the concepts of the understanding from the limits of experience.'

[1] Prof. Webb, *Intellectualism of Locke*, p. 168, note.

[2] This question has been fully discussed by Dr. Ingleby and Professor Sylvester. See Sylvester's *Laws of Verse*, Appendix.

[3] I think one of the most valuable points in Mr. Lewes' critique is the remark that a *receptivity* need not necessarily be passive. Is this, however, in consequence of its own nature, or because the spontaneity of the understanding is so bound up with it as to be present in every excitation of the receptive faculty?

[4] *Critick*, (Ed. Meiklejohn), p. 256.

In fact, it differs from the understanding not in its essential nature, but in its *aim*, which is the unconditioned. This second distinction, then, though very important, is by no means so fundamental or so trenchant as that which has just been explained. In accordance with the latter, Kant divides his Critick of the reason into the *Transcendental Aesthetic*, or Critick of the Sensibility, and the *Transcendental Logic*, or Critick of the Understanding. The former had been sketched, completely enough, in his earlier treatises, and seems to have cost him far less labour to discover (as it also costs us far less to understand) than the latter.

We can now follow Kant's Introduction, observing closely the order of his exposition. He claimed particularly to have been the first who understood, and who therefore stated correctly, the *Problem of Metaphysic*. We are about to investigate the human faculties. We can only do this by analysing the effects which they produce, and these effects are knowledge or cognition.[1] The question, therefore, of the Critick is this: how is the fact of cognition possible? What causes, or what combination of them, are adequate to produce this effect? But does not this question presuppose that cognition is a fact? Must we not prove this also? And how can we prove it without ascertaining accurately

[1] These terms are in the following work used synonymously.

what cognition is? Hence, there are three questions to be answered—(1) What is cognition? (2) Does it exist? (3) How is its existence to be explained, or how is it possible?[1]

Kant's Introduction.

§ 1. *Of the Distinction of Pure and Empirical Cognition.*—There can be no doubt that our knowledge begins chronologically with experience. For our senses are first affected by external objects, and our understanding is first occupied in comparing or arranging the materials so obtained. But though all knowledge begins *with* experience, it does not follow that it originates *from* experience. For it might, even when obtained from experience, be a composite thing, consisting partly of impressions, partly of additions made (in the act of receiving them) by our understanding. And it may be very difficult to separate these additions, and recognise them as such. The question, whether there be cognitions independent of all the impressions of the senses, is not therefore to be lightly decided. It may be objected, that elements added by the cognitive faculties cannot properly be called cognitions,

[1] This is Kant's own procedure in the Preface to his *Prolegomena*. Cf. vol. iii. of this work.

for they do not teach us to know things different from the mind, but rather interfere with such knowledge. We may admit this objection so far as to allow that if our understanding fuses its own conditions with the impressions received from without, these things, as they are apart from us, cannot be known. But surely, in things as they appear to us, these elements must be of the last importance.

The cognition of these elements is called *a priori*, as distinguished from that which is derived from experience, which is *a posteriori*. The popular meaning of *a priori* is simply that our knowledge is derived, as opposed to special experience, from a general rule, which may have been itself originally derived from experience. You say that a man who undermines the foundations of his house might have known *a priori* that it would fall. Yet he must have learned from experience that bodies are heavy, before he could make this inference. We intend, then, to use the phrase *a priori* cognition of such as is *absolutely* independent of *all* experience. *A priori* cognitions are *pure*, if they have no empirical elements mixed with them ; if they have, they are *mixed*. So the assertion : every change has a cause, is a mixed cognition, because change is a notion that can only be obtained from experience.

§ 2. *We possess certain a priori cognitions, and even the ordinary understanding always contains them.*—By what mark, says Kant, can we surely know that we

possess any pure, as opposed to empirical, knowledge? If we cannot think an assertion, without thinking it necessary, it is an *a priori* judgment; and it is absolutely *a priori*, if not derived from any judgment not itself necessary. Secondly, experience never gives us strict and absolute, but only comparative universality, gained by induction, and which asserts that so far we have found no exception. Empirical universality is then but an arbitrary or contingent exaggeration from the cases we and others know, to all cases, whereas strict universality is essential to the judgment in which it is found, and points to a peculiar source of knowledge, which we have designated *a priori*. Necessity and strict universality are certain marks of an *a priori* cognition, and are inseparable. But as empirical limitation is at times more easily shown than contingency, and it is often more convincing to show the unlimited universality of a judgment than its necessity, we may use these two criteria separately, each of them being in itself infallible.

* This view of the criteria of *a priori* knowledge has not met with general acceptance. Kant says indeed very justly, that exceptions in experience are more easily shown than abstract contingency in judgments, but many philosophers would demur to having necessity proved by universality. Sir W. Hamilton, indeed, distinctly deduces the latter from the former. But the school of Mr. Mill, while ad-

mitting the importance of universality, hold that it can prove only a *subjective* necessity, or conviction, stronger *in degree* than empirical conviction, but not differing from it *in kind.* An adequate discussion of this important question would interrupt our commentary, and we shall therefore transfer it to a succeeding chapter.

That there are strictly universal and necessary, and therefore *a priori* judgments in human knowledge, says Kant, is easily shown in science, by mathematical judgments, in ordinary life, by the assertion that every change must have a cause ; so plainly indeed does the latter concept contain these criteria, that it would be altogether lost were we to deduce it, as Hume did, from mere frequent association, and so allow it only a *subjective* necessity. But Kant thinks that without any examples, pure *a priori* principles can be shown indispensable to experience. For experience must deduce its certainty from some fixed principles, and not from rules, which are themselves all subsequent, and proved by experience, since these, he adds, could *hardly* count as first principles. Had Kant expanded this proof, it would have been an instance of what he calls his transcendental proof, which, from the existence of a fact in our cognition, proves the existence of the necessary conditions, from which alone the fact can result. He is ' content, however, in this place, to note the existence of a pure use of our cognitive faculties, and

its attributes.' We must remember that they belong, not only to judgments, but sometimes to notions. So the space occupied by a body, or what we consider its substance, cannot be abstracted from it.

It is, I think, much to be regretted, that Kant did not give more weight to the force of custom, or subjective necessity, as he calls it, and show clearly that it may in all cases be distinguished from real or objective necessity. And this omission in the Critick is the more remarkable, as he had before him the writings of Hume, in which the effacing of this distinction was a capital feature.

§ 3. *Philosophy requires a (special) science, to determine the possibility, the principles, and the sphere of all a priori cognitions.*—We have seen in the Preface how certain cognitions attempt to transcend all experience, and to enlarge our knowledge independently of it. Nay this very knowledge is generally regarded as the most noble and important. Such are the problems that concern God, Freedom, and Immortality. But it might naturally have been expected that we should have determined accurately the origin, validity, and value of the principles we have applied in these researches. If we mean by *naturally*, what ought to be, this remark is just; but if we mean what usually happens, there are solid reasons for expecting this investigation to be long delayed. For the recognised security of mathematical knowledge leads us to expect the same from other *a priori*

cognitions, though they are quite different in nature. And these we pursue with such ardour, that clear contradictions only will check us. Unfortunately the facts of experience, which in other sciences test idle theories strictly, have here no application. We ignore the fact that Mathematic, which has made brilliant advances in *a priori* knowledge, is strictly *confined* (as we shall see) *to intuition*. But the intuitions with which Mathematic deals are given *a priori*, and are therefore hardly distinguishable from pure concepts.[1] This example then excites us with the hope of great results. The fleet dove, that cuts the resisting air in her flight, might think to increase her speed if space were a vacuum. So Plato left the world of sense, and ventured on the wings (as it were) of Ideas, into the vacuum of the pure understanding. He failed to perceive that he could make no way, for want of a resisting medium, in which to apply his powers.

Speculation is ever hastening to complete her structure, and only then begins to consider the soundness of the foundation. Our suspicions are generally lulled during the construction by this fact, that perhaps the greater part of the work of our reason consists in the mere analysis, in *formal* ex-

[1] This remark shows why Kant vacillates in his language about space and time, calling them, in an earlier treatise, even *conceptus spatii et temporis*.

plication of the concepts we already (though perhaps confusedly) possess. This sober and useful process seduces the reason to make unwittingly quite a different sort of assertion about given concepts, in which new *matter* is joined to them *a priori*, without questioning our right to do so. This distinction must be forthwith explained at greater length.

§ 4. *The Distinction between analytical and synthetical judgments.* —Though this distinction has become an household truth in philosophy, Kant's analysis has never been accurately expounded. The reader must pay particular attention to it, if he wishes to understand clearly the objective necessity of mathematical judgments.

If I assert, says Kant, of a body, that it is extended, I only assert an attribute necessarily contained in the notion. It is by an *analysis* of the notion that I form the judgment, and it is hence called analytical, or *explicative*, as enumerating clearly elements contained obscurely or confusedly in the concept. But if I assert of a body, that it has weight, I assert what cannot be discovered by any analysis of my notion of a body. This judgment is therefore synthetical or *ampliative*, enriching our notion by the addition of an new attribute.

* I said in a former work[1] that Locke had com-

[1] Fischer's *Comm.* p. 28, *note.*

pletely anticipated this celebrated distinction. Mr. Lewes thinks[1] that a glance at the *Prolegomena* would have shown Mr. Webb and myself that Kant fully recognised Locke's priority. I do not know what a *glance* at the passage might have done, but a *careful perusal* of it had shown me that Kant (who was not '*fully* alive to Locke's priority') did not know the really decisive passage. It is not that cited by Mr. Lewes (p. 475) and Kant, but that cited by Mr. Webb, in the first chapter of the 4th book of the *Essay*, where Locke enumerates the *four kinds of agreement and disagreement between our ideas;* (1), Identity and diversity, viz., 'blue is not yellow;' (2), Relation, viz., 'the three angles of a triangle are equal to two right;' (3), Coexistence: 'gold is soluble in aqua regia;' (4), Real existence, viz., 'God is.' Here are Kant's analytical, his synthetical *a priori*, and synthetical *a posteriori* judgments accurately distinguished, and his very examples almost anticipated; and in the fourth the distinctness of *existential* judgments is asserted, which, as we shall see, Kant proved to be synthetical, but *subjectively* so, by the addition, not of an attribute, but of a relation to ourselves, and therefore he also distinguished them from other synthetical judgments.

* I agree with Kant that mere hints are not anticipations, and do not, therefore, claim any exag-

[1] *Op. cit.* ii. p. 475, *note.*

gerated importance for a curious passage in Descartes' 14*th Regle pour la direction de l'esprit*, though in it he lays down the Kantian distinction of analytical and synthetical as plainly as it can well be expressed, and shows how previous philosophers had confused these judgments, and consequently fallen into errors. Here is the passage—

'Passons maintenant à ces paroles : *un corps a de l'étendue ;* bien que nous comprenions que dans cette phrase *étendue* signifie autre chose que *corps*, cependant nous ne formons pas dans notre imagination deux idées distinctes, l'une d'un corps et l'autre de l'étendue, mais une seule, celle d'un corps qui a de l'étendue. Au fond c'est comme si je disais : *un corps a de l'étendue*, ou plutôt *ce qui a de l'étendue a de l'étendue ;* cela est particulier à tout être qui n'existe que dans un autre et qui ne peut être compris sans un sujet ; il en est autrement pour les êtres qui se distinguent réellement des sujets. Si je dis, par exemple, *Pierre a des richesses*, l'idée de *Pierre* est entièrement différente de celle de *richesses ;* de même si je dis : *Paul est riche*, je m'imagine toute autre chose que si je disais, le *riche est riche.* Faute d'apercevoir cette différence, la plupart pensent à tort que l'étendue contient quelque chose de distinct de ce qui a de l'étendue, comme les richesses de Paul sont autre chose que Paul.' But to return.

All analytical judgments depend upon the Laws

of Identity and Contradiction.[1] You cannot deny to a concept any of its parts, without at once contradicting your own act of conception. All analytical judgments are also *a priori*, however empirical the concept concerned may be, for they require no additional experience, but a mere dissection of given notions. But here *a priori* is used in the popular sense explained above. Synthetical judgments must of course *conform* to the logical law of Contradiction also, but still they can never be obtained from it alone, and require some distinct principle in addition. What can this principle be?

All empirical judgments are synthetical. For it were idle to apply to experience for any information that could be obtained by analysis of our concepts. But if these judgments join new elements to our previous concepts, what guarantee have we that these elements ought to be so joined? We must *know* that the predicate belongs to the subject, and that it belongs to it *necessarily*, or we have no cognition. Kant has replied to this difficulty very fully, especially in his First Edition. Let us first take the case of *a posteriori* empirical judgments, such as, 'all bodies have weight.' How do we know this? From experience. If so, *our real subject is not the concept of body, but our whole potential experience of bodies.*

[1] Cf. Kant's *Prolegomena*, p. 17.

The concept is only (like all concepts) a partial and incomplete representation of our experience, and we may add from this experience new elements to the incomplete representation. Our full experience is then the x, as Kant calls it, to which the mind refers, and by reference to which it produces the *a posteriori* synthetical judgment. It is, then, from this different point of view, in some sense an analytical judgment, and the partial concept which is the ostensible subject, is not the real subject.[1] But the real subject—experience—consists of a synthetical combination of intuitions, so that the analysis is only possible through a previous synthesis.

[1] This exposition shows that Mr. Lewes is in error, when he imagines (*op. cit.* ii., p. 472) that he has overthrown Kant's famous distinction by showing that the same propositions constantly pass from one class to the other. Kant never denied this transition. But he did uphold what Mr. Lewes in fifty other places strongly insists on, that the process of dissecting our acquired concepts, and that of enriching them by recurring to nature, and seeing what additional predicates may be attached to them—that these processes are totally distinct. How Mr. Lewes can call this a *logical* distinction, and nothing else, passes my comprehension. It is surely a matter of fact, a psychological observation which any one can make for himself. It appears from the argument in the text, that when the analysis is of our ready-made concepts, the judgment is analytical; but when it is of our general experience, or, as we shall see, of our intuition, it is synthetical, since it adds to our concept, though it may often consist merely in explicating our confused experience or vague intuition.

A more difficult problem remains. All empirical judgments are not *a posteriori*, for many of them are universal and necessary. If they be synthetical, and also *a priori*, what is the x, the real subject, which affords us the real synthesis? When we assert of a change, that it must have some cause, this never could be obtained from the analysis of the concept of change; where then did we find the combination *a priori* of change and cause? for as this judgment is absolutely universal and necessary, we could not as before have recourse to our complete experience, of which it is indeed one of the very conditions. The answer to this question was one of Kant's greatest discoveries. But he made it first in the field of Mathematic.

§ 5. *All Theoretical Sciences contain Synthetical and a priori Principles.*

1. While Philosophy[1] is satisfied with *discursive* judgments about concepts, MATHEMATIC insists on proving each step by *intuition*, and this observation gives us the clue to its first condition. This condition must be intuition, and it must be *a priori*. For though mathematical, like all other true judgments, must conform to the Law of Contradiction, such mere analysis does not explain their real nature. Consider the judgment $7 + 5 = 12$. All

[1] Cf. *Proleg.* p. 36.

previous philosophers considered this a mere analytical inference. But Kant denies that the concepts of 7, of 5, and of their addition, actually contain 12 as a necessary element. 'We must go beyond these concepts, and obtain the assistance of the intuition corresponding to either of them—suppose the fingers of a hand, or five points in a space—and add the units of the five given by intuition successively to the concept of 7.'[1] When this operation is completed, and then only, do we see the result to be 12. All such arithmetical judgments are therefore synthetical, as may be easily proved by considering the addition of large numbers. We there find that no analysis of our concepts will give us the required result. Geometrical judgments are equally synthetical. If I say that a right line is the shortest possible between two points, I cannot elicit anything about its shortness, which is *quantity*, from the mere concept of its straightness, which is *quality*.[2]

(There are indeed, Kant parenthetically observes,

[1] The reader will observe that Kant proposes to add the *intuition* of 5 to the *concept* of 7, the very expression repeated verbatim in the *Prolegomena*. He appears to mean that the 7 is a made up group, whereas the 5 units are added seriatim.

[2] In the *Prolegomena*, Kant adds a still clearer example. All the proofs of equal triangles resolve themselves ultimately into *super-position*, which is no logical analysis, but a direct appeal to intuition.

in geometry and also in arithmetic analytical judgments depending on the Law of Contradiction, such as $a = a$ and $a + b > a$, but neither are these the principles on which the demonstration is based, nor would they be admissible in mathematics, were they not capable of being expressed in intuition. What misleads us about synthetical judgments, and makes us regard them as analytical, is an ambiguity of expression. *We ought* to attach the predicate necessarily to the concept of the subject. So we ought, but the question is, whether *we do* so, until we have supplemented the concept by our intuition.)

2. PHYSICAL science contains *a priori* synthetical judgments among its principles. The examples which Kant gives are not the principle of causality, as Kuno Fischer alleges, but the assertions that *the quantity of matter in nature is constant*, and that *action and reaction are always equal.* Permanence is not an original part of our concept of matter. Reaction is not so either.

3. METAPHYSIC, whether we grant its scientific value or not, at all events pretends to occupy itself not about analysing concepts, but about extending our knowledge, and it employs such *a priori* synthetical principles, as our experience cannot even grasp. We can take as an example, *the world must have had a beginning.* Metaphysic then *aims*, at all events, at consisting of nothing but synthet-

ical *a priori* judgments. When Kuno Fischer gives as an example *judgments asserting existence*, he forgets that the synthetical nature of such judgments is only established in the latter part of the Critick by a long and difficult discussion, and could therefore not be here quoted as a commonly received truth.

§ 6. *The general Problem of the Pure Reason.*— It is very useful to comprehend a number of investigations under a single formula. Both the proof and the refutation are thereby simplified. A single question expresses the problem of the pure reason, *how are synthetical a priori judgments possible?* By its establishment or refutation Metaphysic must stand or fall. David Hume, of all previous philosophers, approached nearest to this problem, but did not state it to himself either distinctly or universally enough. He confined his attention to the Principle of Causality, and exploded Metaphysic as in reality borrowed from experience, though decked out with an apparent necessity engendered by habit. A larger consideration of the question would have shown him that his conclusion disproved the possibility of mathematics, a result at which his good sense must have revolted. Kant tells us, in his *Prolegomena*, that this scepticism of Hume was the exciting cause that prompted his first critical doubt.

The solution of the above problem explains the possibility of all sciences which contain a theoretical cognition of objects *a priori*, and therefore an-

swers the questions: *How is pure mathematic* and *how is pure physic possible? That* they are possible, their actual existence proves. As to *Metaphysic*, its want of success excites reasonable doubts as to its possibility. Yet as a fact in human nature, a certain spontaneous Metaphysic cannot be denied. The reason is irresistibly impelled to discuss those questions which transcend the bounds of experience, and in this sense there has been since the dawn of speculation, and there will ever be, Metaphysic. The question therefore remains: How can this impulse be explained from the nature of the reason, or *how is spontaneous metaphysic possible?*

But as it has confessedly led to perpetual contradictions, we must insist upon the farther and last issue: *how is Metaphysic as a science possible?* These are the strictly scientific, and closely defined limits of the Critick, which is concerned, not with objects, but with reason and its conditions. All previous dogmatic attempts at Metaphysic may be completely ignored, as either affording a mere analysis of concepts, which though useful is not Metaphysic, or as consisting of assumptions which have long since become suspicious, owing to the contradictions which they originated.

§ 7. *The general Conception and Subdivisions of a special Science, called Critick of the Pure Reason.*—The reason is the faculty which gives us the principles of *a priori* knowledge. An *organon* of the pure reason

would then be a summary of these principles, and its detailed application would be the *system* of the pure reason. The present work is a mere preliminary (or *propædeutic*[1]) to this system, of negative use, and devoted to clearing and purifying our reason from errors on the subject, by means of searching *criticism*.

'I call all knowledge *transcendental* which is not directly concerned with objects, but with the way in which we cognise them, so far as it is possible to do so *a priori*. A *system* of such knowledge is properly called *transcendental philosophy*. Yet even this exceeds our design, as it should contain a complete account of our analytical, as well as our synthetical knowledge; whereas we shall only carry our analysis as far as is absolutely necessary to the understanding of our synthetical principles. This work is then merely a transcendental Critick, or *Critick of the Pure Reason*. The main point in subdividing such a science, is to admit no concepts that have the smallest empirical element.' Thus the principles of morality, though they are by no means based on pleasure and pain, or on desires and inclinations, all of which are empirical in origin, yet imply them necessarily either as obstacles to duty, or incitements to action. They must therefore be excluded.

[1] προπαιδευτική.

Our science must of course contain first *Stoicheiology*,[1] and next *Methodology*. Each of these will be subdivided according to principles explained in the sequel. One point must here be mentioned: that there are two stems or trunks of human knowledge which perhaps spring from a common, but to us unknown, root, and these are *sensibility* and *understanding;* through the former of which objects are *given* to us, through the latter they are *thought*. So far as the sensibility may contain *a priori* representations that are the conditions of objects being given to us, so far does it enter into transcendental philosophy. And as objects must be given to us, before they can be thought, this transcendental doctrine of sensibility, or Aesthetic, must be our first consideration.

* Concluding Reflections on the Introduction.

§ 8. *The History of Kant's Discoveries, and his peculiar Method of Proof.*—Kuno Fischer has given, in his *Commentary on the Critick*,[2] a very interesting sketch of the chronological development in Kant's earlier writings. This sketch is particularly valuable, because it shows that the critical philosophy was not adopted by Kant till he had actually supported

[1] Or Doctrine of Elements, στοιχεῖα.

[2] pp. 28–33. Cf. also Kant's *Proleg.* (Introduction).

some of the most popular solutions adopted in the present day. They were tried by him, and found wanting. As early as the year 1762, Kant declared that all logical judgments were analytical and *a priori*. The following year he contrasted with them the connexion of cause and effect, which he declared to be synthetical. He had then discovered that real cognitive judgments, as opposed to logical, were synthetical. But a few years afterwards he declared with Hume, that the concept of cause was obtained empirically. He did not yet perceive how synthetical judgments could be *a priori*. This is in fact the attitude of Mr. Mill, and his school, who explain the apparent necessity of judgments by association. It cannot be said therefore of Kant, as has been said of Sir William Hamilton and of Dean Mansel, that he 'ignored' inseparable association, and did not give that theory his serious consideration.

But a deeper reflection on mathematical judgments altered his views. Surely these cannot be empirical, and yet they most certainly give us real knowledge. As early as 1764, Kant saw that they depended upon intuition, and he declared space to be that primitive intuition. But still he ascribed to it 'a reality proper to itself,' which lay at the basis of all matter. This was the view of Hamilton and his school. But if space were thus given from without, how could its judgments be anything but em-

pirical, and hence how could they be universal and necessary? If they are such, space must be an intuition not given with objects from without, but *a priori*. This step he made between 1768 and 1770.

By maintaining then the *a priori* and yet synthetical character of mathematical judgments Kant parted company with Hume, and entered upon his critical path. It was obvious when the existence of such judgments was ascertained in one science, that the same problem must be solved in other sciences. How about Metaphysic? If it means the science of things in themselves, all judgments whatever about such things are rendered impossible by our late discovery. For if space and time are necessarily imposed by the mind upon all the objects it can know, how can things apart from these conditions ever be brought before the mind? How can we speak of things as they are in themselves, when we only know them under these all-important modifications?

There is only one other sense in which a Metaphysic of *things* is possible—in the sense of *phenomena*. Is there any universal and necessary knowledge of phenomena possible? Is there such a thing as *a priori* Physic? This was the last and by far the most subtile of all Kant's discoveries. He would not publish his *Critick*, or consider his system complete, till he had ascertained that as we *intuite* phe-

nomena under *a priori* conditions, so we also *think* and connect them under *a priori* conditions. As the *a priori* conditions of intuition give us synthetical *a priori* judgments in Mathematic, so the *a priori* conditions of thought give us similar judgments in Physic. But we only mean thought about phenomena—thought applied to experience. *The cognition of the things of sense need not itself be sensuous cognition.* Ten years of thought brought him to this conclusion. The critical philosophy therefore, like most great discoveries, was not the offspring of a happy guess, or a sudden inspiration, but the slow and gradual result of a long life of labour.

We are left in no darkness as to all these points. Not only the chronological sequence of Kant's works, but the general account of his discoveries given in Kant's second Preface, and in his *Prolegomena*, are explicit. In this latter work, published for the use of teachers in expounding the Critical Philosophy, he gives the analytical or regressive view of the system synthetically constructed in the Critick. I have endeavoured to combine both in the preceding Commentary. One point, however, deserves special attention, before we enter upon our task. The nature of Kant's demonstration throughout the Critick may appear at first sight illogical, inasmuch as he argues from the position of the consequent to the position of the antecedent, and this

he calls his *transcendental proof*.[1] But this argument is only illogical on account of the plurality of causes. Given a cause, its effect will follow; but given the effect, we cannot infer the particular cause, except we are certain that no other cause could have produced the effect. We may safely argue from the effect to its *only possible cause*. And such is Kant's investigation, which infers from the fact of cognition the only possible conditions under which it could exist. When these conditions are established, they show not the *existence* of the fact, by which they were themselves proved, but its legitimacy. Thus the legitimacy of mathematic and physic, and the illegitimacy of Metaphysic, as a science of things *per se*, are demonstrated from the conditions they involve. It may be objected that if Metaphysic be a fact, its conditions must be as real as those of any other science: how then can it be rejected? In answer it may be observed firstly, that the conditions of Metaphysic are absolutely inconsistent with those of mathematic. This raises a strong presumption against the more doubtful science. Secondly, if it be found that from the conditions of Mathematic and Physic the possibility of an illusory science of Metaphysic can be explained, whereas from those of Metaphysic the very

[1] Cf. Kuno Fischer, pp. 24–8.

existence of Mathematic and Physic can be shown impossible—in such a sense, we cannot hesitate as to our decision. The Aesthetic shows the legitimacy of Mathematic, the Analytic that of Physic; the Dialectic proves the illegitimacy, as well as the apparent existence of Metaphysic. These are the main divisions of the Critick.

CHAPTER III.

THE TRANSCENDENTAL AESTHETIC.

§ 1. *Definitions.*—The immediate knowledge we have of objects is *intuition.* This only occurs if an object is given us, that is to say, if it produces an affection or modification of our minds. The faculty of obtaining representations through this affection produced by objects, is *sensibility.* Kant notices that this so-called faculty is properly a *receptivity*,[1] as opposed to the spontaneity of thought. Sensibility alone gives us intuitions: when these are thought of the understanding, we obtain *concepts.* All mental activity must refer, either mediately or immediately, to sensibility. In no other way can an object be given us. The effect of an object on our sensibility, so far as we are affected by it, is *sensation.* So far as an intuition is of this sort, it is *empirical.* 'The undetermined object of an empirical intuition is called an appearance, or phenomenon.' The element in it that corresponds to sensation is the *matter;* the

[1] Many of Kant's critics in Germany, especially Edmund Montgomery, consider that receptivity implies *passivity.* I am not aware that Kant anywhere in his *Critick* speaks of intuition as passive.

element that renders its variety reducible to fixed relations is the *form* of the phenomenon. The form differs completely from the matter in this, that while the matter is given *a posteriori*, the form exists *a priori*, as it were, ready in the mind, and can therefore be considered quite separately.[1] Representations are therefore *pure*, in which no sensation is to be found, and the pure form of intuition, that reduces their variety to order, is in the mind, and may be called *pure intuition*. Abstract from a body what the understanding thinks about it, such as substance, action, and divisibility; abstract also what belongs to sensation, such as incompressibility, hardness, colour, &c., and there still remain of our empirical intuition extension and figure. These belong to the pure *a priori* intuition which exists in the mind, even without a real object of sense, as a mere form of sensibility. The science of these *a priori* forms of sensibility may be called *transcendental aesthetic*, using this word not in the sense of the philosophy of taste, but in the Greek sense of αἴσθησις, as opposed to νόησις. Our investigation shows that

[1] Kant says expressly (note to § 26 of the *Deduction*) that there are elements not given by sensibility included in his Aesthetic, so difficult is it to separate in treatment what is one in nature. But many of his critics have assumed, in direct opposition to this statement, that Kant made a sharp separation between the two faculties in their actual use, and have proceeded to charge him with want of psychological insight.

there are two such forms, space and time, which we proceed to consider.

§§ 2 and 4. *Metaphysical Exposition of Space and Time.*—Although Kant considers the two forms separately, we may combine them, so far as the same observations apply strictly to both. This is the case with the *metaphysical exposition*, defined by Kant, as 'containing the description of a notion, as given *a priori*.'

By means of our external sense, which is a property of our minds, we represent objects as without us, and their form and relations are determined in what we call Space. The internal sense, by means of which the mind intuites its own internal states, gives us indeed no intuition of the soul itself, as an object, but has nevertheless a form, viz. Time, without which no internal expression is possible. What then are Space and Time? Are they real existences? This is the popular belief. Or are they mere relations, that belong however to things in themselves, whether we intuite them or not? This was the view of many previous philosophers. Or do they belong merely to the subjective nature of our mind, as forms of its intuition, through which alone they can be added to things?

*Kant does not consider the possibility of their falling under more than one of these three heads. For in the first place, if any one of these suppositions satisfies all the phenomena, the philosophical law of

Parcimony forbids us to assume an additional one *without any reason at all.* Secondly, if the subjective origin of space and time be established, it is specially absurd to assume that the peculiar element added to objects by the mind, which constitutes in fact the essential difference between the phenomenon and the thing *per se*—that this element is added by the mind to objects which have it already in themselves. Recent controversies will make it necessary to revert to this subject, when we have considered Kant's express utterances on the point.

(1.) Space and time are not empirical concepts, deduced from our experience. For we cannot refer our sensations to anything without us (that is, in space), nor can we assert them to be simultaneous or successive, except the representations of space and time were already in the mind.

(2.) Space and time are necessary *a priori* representations, lying at the basis of external and internal intuitions respectively. It is impossible to conceive either of them annihilated, though we can easily conceive all objects in them removed. They are therefore the necessary conditions of this very possibility of phenomena.

(3.) Space and time are not general concepts of the relations of things, but pure intuitions. For there is but *one* space and *one* time, of which all separate spaces and times are parts. And these parts are not considered as constituent elements,

composing space and time, and therefore prior to them, but rather as limitations of space and time, and existing in them. Hence an *a priori* intuition lies at the base of all our notions of space and time. Among the many errors in Cousin's exposition of the Critick, none is more remarkable than his misconception of this cardinal point.

(4.) Space and time are represented as unlimited quantities.[1] For the infinite parts which they contain are neither constituent elements chemically fused to produce them, nor logical parts contained under them. Every concept indeed is represented as comprising a possibly infinite number of individuals *under* itself, but it cannot be conceived as containing them *within* itself. The parts of space and time are *in* infinite space and time, not contained *under* our

[1] Kant says of space that it is represented as an *infinite given quantity*, a statement justly attacked by his German critics (especially Montgomery), who deny that on his own principles infinity can be given to sense, or indeed given at all. I suppose he meant to say *indefinite*, for he is far more cautious in the parallel remark on time, where he says the 'infinity of time means but this, that all definite quantities of time *are only possible by limiting* the single (total) time lying at their basis.' Hence time is originally given as *unlimited*. A vagueness in absence of limits may be given, though proper infinity cannot. I think Kant's opponents should have given him the benefit of this reasonable explanation. Even as to space, he spoke of its infinity, in the first Edition, as the absence of limits in the extension of intuition (*die Grenzenlosigkeit im Fortgange der Anschauung*).

concepts of them. Our original representation of space and time is therefore not concept, but *intuition*. Kant had added, in his first Edition, that no general concept of relations (in space) could of itself imply the endlessness of these relations, as our notion of space certainly does.

§§ 3 and 5. *Transcendental Exposition of Space and Time.*—Kant defines this to be 'the explanation of a concept as a principle from which the possibility of other synthetical *a priori* cognitions can be understood.' It is necessary to show (*a*) that such cognitions really flow from the given concept; (*b*) that these cognitions are only possible by presupposing this particular explanation of the concept.

Geometry is a science that determines the properties of space synthetically, and yet *a priori*. What then must our representation of space be, to produce such cognitions? It must obviously be intuitive, for otherwise we could not obtain from it synthetical propositions pure, and also *a priori*, for these judgments are demonstrable, and carry with them necessity, such as the statement, that space has but three dimensions. So also there are axioms concerning the relation of time equally demonstrable and necessary: *e. g.* Time has but one dimension, different times cannot be simultaneous (as different spaces are), but successive. So also the concept of Change, and with it of Motion (change of place), are only possible through our notion of time; and through

this latter only as an *a priori* intuition, for no concept could possibly make us understand the possibility of change, which is, in fact, the combination of contradictory predicates—the existence and non-existence of the same thing in the same place. It is only in time, that is to say successively, that this is possible. All the synthetical propositions, therefore, derived from our idea of motion in general (and they are not a few) are wholly dependent on our idea of time.

* The expositors of Kant[1] have uniformly derived the science of Arithmetic from the intuition of Time, a derivation so important, if true, that he could not possibly have omitted to mention it. But although in his *Prolegomena*, he has (perhaps in deference to his critics, and seduced by his passion for symmetry) conceded *en passant*, that this view is possible, he has left us in no doubt, from several passages in his *Critick*, that the units of the science of arithmetic, being essentially simultaneous, and not successive units, are given us primarily in space, and not in time. The original intuition of 5, for example, is not a group of five successive thoughts or intuitions, but the immediate perception, through sight, and perhaps through touch also, of five si-

[1] *E. g.* K. Fischer, Dean Mansel, Sir Wm. Hamilton, and many others. Since the publication of my criticism on Kuno Fischer's *Commentary*, I think this position has been tacitly abandoned.

multaneous, adjacent, units. The fact that we can, if we choose, apprehend them successively in five separate acts of attention, makes us apply arithmetical laws to sensations in time also, but I do not see how a summation, or subsumption of several units under a higher number, regarded as a unit itself—how this would ever have been accomplished, were we not aware intuitively of the simultaneous presence of the units within a small definite portion of space. There is no other practical way of teaching arithmetic to a child or savage, than by appealing to space intuitions. Let me add that the subdivision of units into fractions is equally unattainable, originally, through intuition of time, but is easily obtained through space, where all the units assumed are intuitively divisible. I have pointed out in another work[1] how the opinion appears to have arisen. Our only way of exemplifying quantity in

[1] Cf. *Fischer's Commentary on Kant's Critick*, p. 95, *note*. Dr. Tarleton has suggested to me that I was wrong in implying that space was the *only possible* source of arithmetical intuitions. As he observed, we can conceive a mind ignorant of space distinguishing units and their addition by the striking of a clock. And if any given number of strokes were gathered, he thinks, by means of some longer division of time under a larger unity, an acute reasoner might even under such conditions construct an arithmetic. There is no doubt, however, that the actual origin of our arithmetic is space, and I have above stated what I consider a great difficulty, the existence of comprehensive unities and of fractions which could hardly be reached through time alone.

time is by the act of adding (mentally) units to one another, in other words by number. But this *schema* of quantity, which will be discussed in its proper place, *is expressly contrasted by Kant*[1] *with any representation which can be reduced to an image.* The derivation of arithmetic from the intuition of space has never yet, so far as I know, been refuted, and though not definitely stated hitherto, was distinctly implied as far back as Descartes.[2]

§ 6. *Deductions from the preceding Notions.*—(*a.* and *b.*) Neither time nor space represents any properties of things in themselves, nor do they express any relations of such things to one another which still exist, if we abstract from things the subjective conditions of intuition. For in no case can determinations, absolute or relative, be intuited *a priori*, prior to the existence of the things which they determine. To assert then the absolute reality of space and time is to assert that we know *a priori* the properties or relations of things which we do not know. Such an assertion has no meaning whatever, unless we assume that space and time belong to the subjective conditions imposed on the mind, and are therefore logically prior to the cognition of objects. Upon this supposition the necessary and universal judgments obtained from the intuitions of space

[1] *Critick*, p. 110.

[2] See his *Règles pour la Direction de l'Esprit*, xiv. and xv.

and time follow as a matter of course. Also our external image of time is an endless right line, which expresses all its relations in an intuition, and therefore proves it to be such.

(*c*). It is then only from the human point of view that we can speak of extended beings, or of events in time. If we abandon the subjective conditions, under which alone we can be affected by objects, then both space and time have absolutely no meaning. These forms are a necessary part of every intuition which *we* can have, because we intuite through them. But we may not impose the conditions which limit our cognition of things on things themselves. Space and time then include all things which *appear to us*, but beyond this we can give neither of them any reality. For as they are not things, but our particular way of looking at things, it is absurd to imagine that they can belong to things *per se* as qualities. Again, as we cannot possibly investigate the conditions which limit the intuition of other beings than ourselves, we cannot say whether any of them are obliged to look at things as we are. We are therefore incompetent to affirm the existence of space and time, even in this sense, which is the only possible sense in which they can be conceived beyond our own experience without absurdity. But when thus limited, nothing can be more objectively certain. There is no possible intuition which we can have apart from

space and time. We hold therefore, as strongly as possible, their *empirical reality*, but assert their *transcendental ideality*, that is that they are nothing, if we omit the conditions of experience, and regard them as belonging to things in themselves. We also deny their *absolute reality*, which can never be revealed to us, and which is in some senses absurd.[1]

Space is the only one of our subjective representations relating to what is without us which can be called objective *a priori*. For synthetical *a priori* propositions cannot be deduced from any other of them, so that such sensations as heat, colour, and sound can claim no ideality at all, accurately speaking.[2] They agree indeed with space in belonging to the subjective nature of sensibility, but being sensa-

[1] When Trendelenburg says that Kant forgot to inquire whether space and time might not be *both* subjective and objective, as a third possibility, he shows by his very statement of the question his ignorance of Kant's system. To say, as Trendelenburg does (*Beiträge*, pp. 215 sq.), that Kant made them purely subjective is equally false. Kant would never have conceded such a statement of his views. He denied the subjectivity in the usual sense of space and time. He asserted them expressly, in the sense which Trendelenburg desires, to be both subjective and objective. He never denied their objectivity except in an absurd sense.

[2] He means that we cannot conceive a mere sensation as having even an ideal existence separate from our thinking. To afford us this possibility, we must conceive objects as distinct from mere affections of the senses.

tions and not intuitions, they in themselves give no object, not to say an object *a priori*.

Time is the formal condition of all phenomena generally. Space is confined to those which are external.[1] But all representations, whatever be their object, must belong, as affections of the mind, to our inner states, and as these inner states are subject to the formal condition of time immediately, even external phenomena are mediately subject to the same condition. There is therefore no part of our experience free from the condition of time.

Kant cautions the reader repeatedly not to attempt to illustrate his transcendental doctrine of space and time, by comparing them to the subjective affections which objects excite in us, and which are known as secondary qualities. It might be thought that as heat, colour, and taste are not attributes of objects, but affections excited in us, and wholly subjective, so space and time are also subjective affections added by us to objects to which they really do not belong. Such an illustration would mislead the student, for it is based on the

[1] Mr. Hodgson shows (*Space and Time*, p. 116) that Kant need not have denied to space its universality even as a condition of internal experience. For as external phenomena come secondarily (as thoughts) under the form of Time, so internal states come indirectly under space, being always localised within our bodies. It would appear indeed that Kant felt this in his *Refutation of idealism*.

contrast between the reality of the object, and the subjectivity of the affection, which may vary in different minds. The rose is more real than its colour or fragrance: the wine is more real than its flavour. These qualities are neither universal nor necessary. But space and time are as universal and necessary as anything in our experience can be; they are as real and as objective as any part of our experience. To contrast them with the objects to which they belong, would be to lapse into the old error of regarding these objects as things *per se*. Concerning these latter experience knows and asks nothing; they are perfectly unknown correlatives of the phenomena which appear to us in space and time only. These latter are in no wise sensations, produced by an affection of our sensibility, but pure forms of intuition, perceived by us as figures and relations.

§ 7. *Farther Explanations.*—It was objected almost unanimously, by intelligent critics of Kant's First Edition, that changes were real, as is proved by our internal experience, even abandoning the evidence of our external experience. But changes being only possible in time, time must be real. To this Kant replies by admitting the whole argument, which is perfectly true, but also perfectly irrelevant. Kant never denied the reality of Time, as a part of *our* experience. But suppose that some other being could behold our minds with an intuition free from the limitations by which ours are

bound, what we call changes would produce a cognition in him in which the representation of time, and therefore of change, would form no part. In other words the empirical reality of time is asserted by both Kant and his opponents; but they have sought to infer from it absolute reality, which cannot be conceded on his principles.

The objectors did not press the same argument in the case of space, because idealism had long since proved that the absolute reality of external objects was not demonstrable, whereas the objects of the internal sense are proved real by consciousness. They did not consider, that without disputing for a moment the reality of either as representations, objects can be regarded from two points of view, either as objects independent of our intuition, or as objects coming into the mind through intuition, the form and conditions of which, though really and necessarily belonging to the objects, must be sought in the subject.

The objection is in fact retorted with great force by Kant. For while his theory supports the reality of all our empirical cognition, those who hold the absolute reality of space and time are at variance with the principles of experience. They must either regard space and time as subsisting independently of things (the prevalent theory of mathematical physicists), and so assume two eternal and infinite self-subsisting nonentities, which exist merely for the

purpose of containing all that is real; or they must regard them, with some metaphysical philosophers, as relations of phenomena, abstracted from experience, and confused in the process. In this latter case they must deny the validity, or at least the apodictic certainty of the mathematical *a priori* deductions which concern real things in space, for such certainty cannot be obtained *a posteriori;* and space and time are, on this hypothesis, the creatures of the imagination, abstracted from experience, generalising its relations, but for that very reason depending for application on the restrictions which nature has imposed. The former school save their mathematical conclusions, but create for themselves endless difficulties when they leave this (phenomenal) field. The latter have the advantage of not being hampered by space and time, when they desire to consider objects not as phenomena, but in relation to thought; they cannot however explain the possibility of *a priori* mathematical cognitions, or bring the laws of experience into necessary harmony with them. Kant's theory solves all these difficulties.

Finally, the transcendental Aesthetic cannot contain more than these two elements, space and time. For every other notion pertaining to our sensibility, even that of motion, which combines them both, presupposes something empirical. Space itself does not move, but *something* (*empirically given*) *in space.* Time changes not, but something perceived in time.

* This remark refutes the attempts recently made to construct an *a priori* Mechanic on the presentation of Force.[1] We cannot conceive or intuite dynamical force, without motion, and for this empirical data are required, which will destroy the *a priori* purity of the deductions from such intuition. When the late Dean Mansel in another work (his well-known *Bampton Lectures*) endeavours to deduce moral laws from the datum of Personality, he is guilty (I conceive) of a different error, for the notion of Personality, though *a priori*, is not an intuition at all, but as will be seen in the latter part of this Commentary, a logical supposition of thought, giving us no definite knowledge or basis for farther deductions such as are found in pure mathematic.

§ 8. *General Remarks on the Transcendental Aesthetic.*—I. Kant here again sums up his doctrine, insisting that space and time are not necessary even to [rational] beings as such, but to the subjective sensibility of all *human beings*. They are its pure form, and therefore cognoscible apart from the sensation, which is the *matter* given *a posteriori*, and infinitely various. The form being a necessary part of all our intuitions, no possible analysis or increased clearness in them can bring us in the least nearer to things *per se*. To say then that our sensibility is only a confused representation of things, containing what really belongs to them as such, but under a

[1] See Mansel's *Prolegomena Logica*, Appendix A.

congeries of attributes and partial representations, which we do not consciously explicate—to say this is to falsify the whole notion of sensibility and of phenomenon, and make it idle and void. The contrast between distinct and indistinct representations is merely logical, and does not concern their content. No doubt such a concept as that of *right* is the same in sound common sense, and when analysed by the subtilest speculation; the latter merely developes what is unconsciously felt in the former. 'But the common notion of right is not therefore sensuous, or a mere phenomenon, for in any case it is a concept of the understanding, and represents a property of actions which belongs to them as such. The representation of a body in intuition, on the contrary, contains nothing at all which could belong to an object *per se*, but only the phenomenon of something, and the way in which we are affected by it, viz., a receptivity of our cognitive faculty, which is called sensibility, and must ever differ *toto cælo* from a cognition of the object *per se*, however thoroughly we may penetrate the phenomenon to its deepest elements.' The logical distinction therefore drawn by the school of Wolf and Leibnitz between the two divisions of our knowledge[1] is false,

[1] That is between the Sensibility and the Intellect, which they regarded as capable of knowing things *per se* more distinctly. Kant does not dispute this latter point yet, as it here suffices for his argument to establish the true character of sensibility.

the distinction is transcendental, and concerns their origin and content. Abstract from objects our subjective constitution, and they must disappear with the qualities which this very constitution gave them, thereby determining their form as phenomena.

We distinguish indeed in phenomena that which affects the senses of all men in the same way, and that which depends on the peculiar organisation of isolated individuals. We say commonly that the former is the real object, the latter only appears to be such. But this is merely an empirical distinction. We must go farther and regard even the object as it appears to all mankind, as a mere phenomenon, in which no property at all of a thing *per se* is to be found; otherwise our transcendental distinction (just now made) is lost.

In the case for example of a rainbow, we say physically that it is a mere appearance, while the rain itself is real. But if we inquire farther into the question whether this thing which is real to the senses of all men, also represents a thing *per se* beyond these senses, 'then the question of the relation of the representation to its object becomes transcendental, and not merely the drops of rain, but their round form, and even the space through which they fall, are mere modifications or conditions of our sensibility; the transcendental object remains totally unknown.'

'The second point of importance in the transcendental Aesthetic is this, that it should not find favour merely as a plausible hypothesis, but claim to be as certain and undoubted as can possibly be demanded from a theory, which is to serve as organon,' or basis of a scientific system. Let us illustrate this by an example. Suppose that space and time were objective *per se*, and conditions of the possibility of things. It is a fact that from them (especially from space) a number of propositions demonstrable *a priori*, and synthetical, are derived. Whence can these geometrical truths, with this twofold character, be obtained? There is no way possible, except either through intuitions, or through concepts, and these either *a priori* or *a posteriori*. All *a posteriori* knowledge of either kind is at once excluded, because mathematical judgments are strictly necessary, a feature which no experience can supply. All concepts are also excluded, for from them we can only obtain analytical, and not synthetical judgments. Torture the concepts of right lines, and of the number *two* as you please, you will never obtain from them the proposition: *Two right lines cannot enclose a space.* We must therefore have recourse to intuition, and intuition *a priori*, as just established.

But if space and time were given to us as properties of things apart from our way of looking at things (our sensibility), how could we possibly

know anything about these things *a priori?* Or granting, as we must do, that this *a priori* knowledge of them must come from our subjective conditions, how could we assert it to belong to a triangular object as such? Both these alternatives are impossible. From the fact that these qualities belong to *all* objects *a priori*, they must come from our sensibility; from the fact that propositions concerning them can be unconditionally asserted, that we can assert for example that the mathematical properties of a triangle belong to any triangular object in nature—from this we must infer that it can be nothing beyond our sensibility. It is therefore not probable, but indubitably certain, that space and time are nothing but the necessary, though purely subjective conditions of our intuitive experience—for this reason universal and necessary, but relating only to experience, not at all to things in themselves.

II. In his Second Edition Kant adds the following supplementary reflections.

To corroborate this theory of the ideality of both external and internal senses, and therefore of all the objects of our senses, as mere phenomena, the following remark may be of service. Whatever in our cognition belongs to intuition (the emotions of pleasure and pain, and the will, are not cognitions) is nothing but *relations*, whether they be of extension, motion, or moving forces—all of which are relations or changes of place, or else the laws that determine

them. Now relations tell us nothing of a thing absolutely, it might therefore be fairly inferred that our external sense merely gives us the relation of an object to the subject. The same may be said of our internal intuition. For in the first place, the representations of our external senses are the matter which supplies our minds. Secondly, time, which is the formal condition of all our experience, and is logically prior to it, existing in the mind as a form of intuition—time contains relations of sequence, simultaneity, and permanence. Being prior to any thought of an object, it must be our intuiting, and if it contains nothing but relations, it must be the form of this intuiting, or the way in which the mind, when acting, is affected by its own activity. Whatever is represented to us through a sense, must be a phenomenon ; there must therefore either be no internal sense, or else our mind or subject, when it is the object of this sense, must be given to us merely as a phenomenon and not as it would judge itself, were its intuition self-acting, and therefore purely intellectual. The great difficulty is to explain how a subject can have internal intuition of itself, but this difficulty is common to every theory. Our internal self-consciousness cannot by a pure act of spontaneity cognise all the variety which exists in the subject. It must apprehend this variety by permitting its internal intuiting faculty to be affected, and then this faculty must receive the variety *in time*,

ordering it according to the laws and conditions under which alone the mind can act. The faculty is not a spontaneity but a receptivity, and not a pure receptivity, but a receptivity affecting what it receives.[1] Our self-consciousness does not therefore present to us the *ego* in any way more distinctly than our external intuition presents to us foreign bodies; we know both only as phenomena.

* The late Dean Mansel, failing to apprehend the force of this remark, was led to distinguish between the data of our external and our internal sense, and to ascribe to the latter the first origin of our ideas of substance. Descartes long ago set up our internal experience as more trustworthy than our external, but he ascribed our knowledge of self not to intuition, but to thought. This theory is more reasonable than that of Mansel, for unless our intuition be made intellectual, like Schelling's, it must act under the condition of time (as well as of the categories, as we shall see), and therefore adulterates the object, so as to prevent us from knowing it *per se*. It will be seen in the sequel that

[1] Kant's language in this place makes it plain, I think, that he did not regard sensibility as purely passive. Here are his words: 'When the faculty of becoming conscious of self desires to investigate (apprehend) what lies in the mind [*Gemüth*, Kant's vaguest and most general word for mental states] it must affect that same, and can only in this way produce an intuition of itself,' &c.

this is not the only conclusive objection to the theory.

III. This critical view of space and time does not by any means reduce the objects given in them to mere illusion—the charge, of all others, most warmly denied by Kant. He calls it, in his *Prolegomena*, 'an objection arising from an unpardonable, and, he would almost say, intentional misconception.'[1] In phenomena both the objects and even the qualities we add to them are regarded as really given, but as these latter qualities depend upon a particular relation, we contrast things *per se* with such phenomena, without in the least denying the reality of the latter. Kant never said that bodies only *seemed* to exist without us, or that our minds *seemed* to be present in consciousness, when he asserted that space and time, the conditions (to us) of knowing them, are in the subject only. Phenomenon is not illusion. It is not asserting an *illusion* to say that a *rose* appears to be red, or scented. But if we think that Saturn has handles, as was once believed, we are subject to an illusion, which consists in attributing to the object *per se* what

[1] Cf. vol. iii. p. 67. It is melancholy to see a man of Trendelenburg's position clinging to these foolish objections, and followed by second-rate English writers. As Stewart thought the Berkeleian idealism a test of metaphysical acumen among the Scotchmen of his day, so Kantian idealism might serve us at present.

belongs to it anywhere in relation to our senses. If I said that a rose was red *per se*, and not merely that it appears to us red, then I am subject to an illusion like that concerning Saturn. Just so if I assert that space is a property of objects *per se*, I attach to them what they possess only in relation to me. The common theory therefore is actually that which turns reality into illusion. For if we regard space and time as conditions of things in themselves, and consider the absurdities that follow: how two infinite things, that are neither substances nor attributes, exist and are the eternal conditions of all things, and remain even when things are removed—considering all this, we cannot blame Berkeley for degrading bodies to mere illusion ; nay even our own existence, if depending on the reality of a nonentity, time, might come to be regarded an illusion—an absurdity with which no one has as yet ventured to identify himself.

IV. What notion do we form of the cognitive faculties of the Deity in our natural theology? His knowledge cannot be a process of thinking, which always must imply limits ; it must be intuiting. And as we cannot regard the Divine intuition as sensuous, we are careful not to attribute to it the limitations of space and time. But how could we avoid doing this, if they were the conditions of the existence of things *a priori*, and existing independently of them? And in such case they must be the conditions of God's

existence also. It remains for us to make them the subjective forms of our intuition, called sensuous, because it is not primitive, but a faculty of the subject depending on the presence of the object, and affected by it. Primitive intuition, which belongs, as far as we can see, to the Prime Being only, is that which gives of itself the existence (Dasein) of the object of intuition, without depending upon such affection.[1]

It is possible, that not only men, but all finite intelligences, have their intuition thus limited. Even if this be the case, it is not the less sensibility, because it is not a primitive (*intuitus originarius*), not therefore an intellectual intuition which belongs perhaps to the First Being only, but a derived (*derivativus*) intuition, belonging to a being dependent both in its existence and in its intuition.

This latter remark is to be considered an illustration of the Aesthetic, not an argument in support of it.

Conclusion of the Transcendental Aesthetic.—One part of the problem of the transcendental philosophy is now settled, which problem is this: *how are syn-*

[1] In other words, a primitive intuition would perceive the object as existing, whereas we only perceive it as affecting us. Our intuition is therefore dependent on the present existence and action of the object; that of the Deity is conceived as not so dependent, but as perceiving the object directly, and without waiting to be affected by it.

thetical a priori judgments possible? We have discovered pure *a priori* intuitions, space and time, in which, when we wish to enlarge a given concept *a priori*, we discover *a priori* what is not given in the concept, and join these additional features to it synthetically. But owing to this origin, such judgments only concern objects of the senses, and are only valid for objects of possible experience.

Those who are not satisfied with these proofs and illustrations are invited by Kant to consider the absurdities which result from regarding the world of phenomena as a real aggregate of things (*per se*) in real space and time. This he does in the seventh section of his *Antinomies of the Pure Reason*,[1] at which we shall arrive in due time. If the world be a thing *per se*, it must be either finite or infinite. But both these suppositions can be proved false, for we cannot conceive space and time either as having limits, or as having none absolutely. It follows that our hypothesis was false, and that the world is not an aggregate of real things in space and time, but of intuitions necessarily subject to the forms of our faculties, which must therefore always accompany them, and appear infinite, though they are only indefinitely extensible. He also notices (p. 98, *note*) that mathematical figures presuppose not merely intuition,

[1] *Critick*, p. 316, or else Kuno Fischer's *Commentary*, p. 230.

which gives the parts, but the gathering of these parts into a unity, which is an act of the understanding.[1] This action of the understanding is treated fully in the next chapter of the *Critick.*

[1] This remark, though contained in a foot-note, and not brought prominently forward by Kant, is of the greatest importance owing to recent objections, which assert that Kant unphilosophically isolated the mental faculties, and regarded them as acting separately. He found it necessary to treat them logically as if they were separate, but was not so stupid an observer as to mistake plain facts.

CHAPTER IV.*

POSITIVE OBJECTIONS.

Kant's Aesthetic and the Modern Sensual School.

§ 1. *Kant and the Association School.*—We pass from our exposition of Kant's doctrine of Sensibility to discuss the objections, raised to it by succeeding philosophers, and in particular to consider the claims of the Association School, who pretend to have given a satisfactory solution of the phenomena in question from a totally different point of view. This school, originated, I believe, by Hartley and Gay (if we omit Aristotle's valuable hints) and continued by Brown, James Mill, and Mackintosh, is now represented by Mr. Bain and Mr. J. S. Mill. The latter author calls it the Psychological school, as opposed to the Introspective or Metaphysical school. To this nomenclature I object *in limine*. It suggests to the unwary reader that one side only devotes itself to the historical study of the facts of consciousness, in contrast to the other. Such is not the case. In the question before us, both schools start from the same phenomena, but differ

in their explanation—both appealing to psychological facts, and to them alone. I deny that Kant's theories are in any respect less psychological than those of Mr. Bain—nay rather I hope to prove that they are more so, and if the term is to be preserved as a designation of a school at all, it would be fairer and more suggestive of the facts to call Kant's school the psychological, as opposed to the *physiological* school of the Association psychologists. As however they cannot object to be called after their fundamental principle, the *association school*, I shall use this term, preserving for the other view of the constitution of our sensibility the proper term *Kantian*. I trust that in handling this controversy I shall avoid Mr. Mill's censure of not appreciating my opponents' views, or being unable to understand their attitude. His courtesy in discussing my former objections (in the Third Edition of his *Examination of Hamilton*) leaves me under the strictest obligation of doing what I can to comprehend his arguments, and to state them as strongly and clearly as possible.

It appears to be acknowledged by both parties, that we do not perceive things (if we indeed perceive them) as they are in themselves, but as they are modified by the medium through which we perceive them, or the instruments we employ in perceiving them. There is no point on which Mr. Mill, for example, quotes Kant with more approval

than on the Relativity of knowledge.[1] Starting from this common principle, it is evident that the next philosophical problem which arises must be to determine, if possible, what elements in our knowledge are to be referred to our perceiving mind, and what residue proceeds from causes apart from the mind. It may be urged that there is no adequate proof of the existence of anything beyond the mind and its cognitions, and that we have no right to assume such existence in our statement. But the following considerations will show that, for convenience sake at all events, we may assume it.

We are unable to state the facts of knowledge without admitting three factors. We cannot content ourselves with the analysis into the knowing subject, and its modifications, which we call the thing known. For this additional fact must be recognised, that the forms and the order of these various modifications are not determined by the mind, but *for* the mind, by some cause foreign to consciousness. The colours for example, and the texture of the various objects which we perceive daily, the places or order in which we perceive them—these things cannot be changed at will by the mind, but must be accepted by it as the arrangement of some cause independent of its consciousness. We may hold with Berkeley that it is

[1] *Mill's Logic*, i., p. 64.

the action of the Deity, whether directly or through the medium of ideas; we may hold with Fichte that it is the action of a hidden faculty of the mind apart from consciousness, and reacting upon it. But these various opinions will not in the least alter or destroy the problem before us, viz., to determine how much is contributed by the constitution of the knowing or conscious mind, and how much by causes beyond or apart from the conscious mind, whatever they be. And it is more consistent with ordinary language, and less confusing to the ordinary reader, to speak of this third factor as the universe of things apart both from God and from the mind.

We have seen the profoundly original solution given (as regards sensibility) by Kant. He endeavoured to find some mark or distinctive feature, which would separate the additions made by the mind to our perceptions, from the data given to the mind by foreign causes. He saw that there were certain features in ordinary sensations, which not only perpetually accompanied them all indiscriminately (*ἀκολουθοῦντα καὶ κοινὰ*, as Aristotle says), but which could not be separated from them even in imagination, which were rather relations of sensations than sensations themselves. He perceived that if the mind added anything to our knowledge, it must be this universal and necessary character, for mind is of evidently the universal concomitant of all perception.

It followed that space and time were of this character, and that the laws of space and time, commonly called mathematics, had an irrefragable basis in the very constitution of the human mind, and were of superior certainty to the laws obtained from a mere classification of constantly recurring but contingent experiences. Without therefore going into subtiler questions about causation and other categories, he concluded that both space and time were original data of our sensibility, and that the certainty of the laws of space arose not from the frequency of our experience of them, but from their primitive nature.

It is I think admitted by all competent thinkers that Kant's theory is in one respect quite perfect. It accounts for all the phenomena under discussion. It gives an adequate explanation of the peculiarities of mathematics, and of the speculative difficulties concerning infinity. It cannot be inconsistent, when properly understood, with any part of consciousness, or any law of experience. But it is not hard to construct an adequate theory, if we allow ourselves as many assumptions as we choose. We cannot tell whether *nature* acts by the simplest means or not, and indeed there are cases where more agents seem to be called into play than we conceive necessary to produce the effect. But *philosophical explanations* must be economical, whether nature be so or not. It has been universally admitted, since

the days of the first Nominalists, and perhaps long before, that in accounting for the facts of nature by theories of our own construction, we are bound not to assume more principles than are actually necessary to explain the phenomena. If two conflicting theories be equally satisfactory in this respect, we must unhesitatingly adopt the simpler.

It is then on this ground of simplicity that the Association school have attacked the theory of Kant, which is irrefragable on the ground of adequacy. They have not attempted, I think, to disprove his facts directly, but they profess to explain them differently with fewer assumptions. The attempt is certainly a strictly philosophical proceeding, and admits of only one answer. If all the facts under investigation *are* explained by the Association theory, the Kantian theory cannot be maintained. It is then a purely psychological question, involving nothing but the critical analysis of complex facts of experience, and an investigation into their simplest origin. I do not think that any Association psychologist will complain of this statement of the issue between us.

It will not be here necessary to do more than describe briefly, but as fairly and strongly as possible, the genesis of our ideas of space and of body, including those of mathematics, according to the empirical school; as I may fairly presuppose in the reader an acquaintance with the ablest and clearest exposition of the theory in Mr. Mill's critique on

Hamilton; a work at once didactic and polemical, written in the face of objections, and intended to vindicate his position before the philosophical world.

The primitive data postulated by Mr. Mill as sufficient to account for the phenomena of external perception, are three in number. There is first Time, by which he means the consciousness of successions in our feelings, unequal in rapidity and duration. Secondly, Feelings, and of these two kinds: tactual feelings, such as those of heat or cold, and muscular (which we learn to be produced by the motion (especially when voluntary) of our limbs. Thirdly, Memory, and as its consequence, Expectation.[1]

The first deductions, or derived notions from these primitive data, are some notion of Self, as a basis of memory (with which we are not at present concerned,) and Simultaneity, which arises immediately, when we feel two sensations, such as an odour and a colour, at the same time. Combining Simultaneity, as well as immediate successions of feelings, with the principle of Expectation, we obtain farther the laws of Association, by which is meant the natural tendency of the mind to think together on all occasions what has been presented to it

[1] Mill's *Examination of Hamilton*, p. 256. I quote uniformly from the Third Edition.

together on one or more occasions, a tendency so confirmed by repeated experiences, as to create an inability to conceive our expectations reversed.

Starting from these data the Association school believe they can account not only for the attribute of solidity in matter, but also for its permanence, its externality, and its extension. The primitive character of space, and the supposed necessity of its laws, which forms the basis of geometry and arithmetic, are consequently denied, or regarded as illusions produced by perpetual association, for these laws of space are said to be more frequently exemplified in nature than any other fact of experience, and are therefore naturally expected with far greater certainty.

In some parts of the problem, it cannot be denied that a very plausible explanation has been suggested for the phenomena by an acute and ingenious application of the principle of association, and I know of no more elegant specimen of philosophic reasoning than the analysis of our belief in the Permanence of the external world by Mr. Mill in the eleventh chapter of his critique of Hamilton. No intelligent opponent of the Association school can fail to perceive the great effect of such a masterly analysis on the minds of those who are still wavering, and I confess that I too, like Socrates in his dialogue with Protagoras,[1] ἐσκοτώθην καὶ ἐλιγγίασα

[1] Cf. Plato, *Protag.*, 339 E.

ὑπὸ τοῦ λόγου, and was glad to take time to consider a reply. But we should always remember that no theory will be adopted by a school of acute thinkers which does not account for at least a large number of phenomena, and that such a theory often maintains its ground for a long time, though in the end it is proved false. The emission theory of light, for example, long resisted the wave-theory successfully, and appeared to explain the phenomena equally well. It may therefore require time and care to find a flaw even in a theory radically false, and its plausibility in explaining the facts in dispute, though the strongest argument in its behalf, is not a demonstration of its truth, so long as even a few exceptions can be proved.

Thus even in the analysis to which I have alluded, the careful reader will find at least one important defect. Our belief in the independent existence of what we call objects is stated to be merely a belief in their *permanence*, and the far more important and primitive belief in their *externality* is thrust into the background, except in two short passages,[1] where it is incorrectly analysed into a belief that objects exist before, after, and beyond the range of our sensations. This is in other words to analyse externality into past and future permanence, as Mr. Mill expressly concedes, omitting by far the most

[1] *Op. cit.*, pp. 221, 232.

obtrusive sort of externality—the conviction that *present* objects are given as external.

I shall not deny that in a subsequent part of the book, the present externality is brought under the association theory by a similar (though far weaker) analysis, but still I contend that the chief plausibility of Mr. Mill's description of Permanent Possibilities arises from the almost complete suppression of the phenomena apparently most at variance with his theory. I proceed to discuss the various points in which I ventured to differ in a former work from Mr. Mill, and to notice the replies with which he has met my objections in his last edition.[1]

§ 2. *Necessity as a test of a priori judgments.*—There is no more important metaphysical discussion now pending than that concerning necessity, as a test of *a priori* notions and judgments. On the one side we have Leibnitz, or at least those who have followed him in this country, who, with some minor varieties, hold that these judgments must arise from the *primitive* laws of the subject beholding the object, and that hence this necessity is a law of the object, or *objective necessity*.[2] On the other side we have the

[1] Cf. Mill's *Exam. of Hamilton*, pp. 298, 302.

[2] They differ as to whether the object contributes elements, or, if so, what elements. Reid and Hamilton hold that the object determines the subject; Kant, exactly the reverse. They both agree, however, in recognising the dignity and truth of

school of Hartley, now represented by Mr. Bain and Mr. J. S. Mill, who hold that necessary judgments are only the result of connexions in themselves not necessary, but rendered inseparable by the law of association; hence that they are not ultimate facts of our nature, or of objects, but possess only a *subjective necessity*. The former school make such assertions as substance and causality, to be *a priori* judgments, and hence laws of the object, or of nature; the latter hold them to be merely empirical in origin, and to be various applications, or cases, of the Laws of Association. Under the former we might also mention a modified school, which, while admitting that association can give rise to a so-called necessity, does not regard such subjective necessity as a real but as a spurious one, reserving the term [objective] necessity for those principles which result from the constitution of the mind as such, in its relations to objects as such, and apart from all contingent and accidental elements. This I believe to be the position of Kant, who certainly differs from many of the first school, as well in his catalogue of objectively necessary judgments, as in the criterion by which he distinguishes them. Still, the whole system of Kant depends upon the establishing the general principle held by the former side.

necessary judgments. Perhaps Leibnitz himself can hardly be said to have acknowledged any objective necessity.

Upon the fact that Space and Time are objectively necessary he builds the inferences that they are *a priori* and primitive, and hence imposed upon all objects by the mind; he holds the same to be true, *mutatis mutandis*, of the Categories.

We are therefore bound to inquire: What proof has Kant given that the necessity (which he makes the test and evidence of a primitive notion or judgment), may not be derived merely from inseparable association, or may not result from some pre-established harmony by which the subject is compelled to believe it objective, without its really being so.

(A.) 'There are only two ways,' says Kant,[1] 'in which a necessary harmony of experience with the concepts of its objects can be conceived. Either experience makes these concepts possible, or the concepts make experience possible. The former of these statements will not hold good with respect to the Categories (or the pure sensuous intuitions); for they are *a priori* concepts, and independent of experience [and this because they are *necessary* and universal]; consequently, nothing remains but to adopt the second alternative,' &c. In this passage he assumes necessity to be a proof that the concept or judgment is *a priori*, and this he had already laid down very dogmatically (Introd. § 2.), pointing, as all his followers have since done, to the fact that

[1] *Critick of the Pure Reason*, p. 101.

empirical universality is only comparative, and that experience cannot possess or produce the character of necessity. Now, the whole association school exclaim that this can only be true if necessity cannot be shown to be a consequence from higher laws. They add that Kant and all his followers have ignored inseparable association; and they further profess to exhibit cases of necessary beliefs so generated, and even found in course of time to be false. We must, then, first examine whether Kant did ignore the effects of inseparable association; and next, whether it be true that really necessary beliefs have been, in the progress of science, shown to be false.

(1.) In the Second Edition of the *Critick* there is indeed no official passage on the first point; but in the deduction of the Categories, as it stands in the First Edition, two passages translated in the third volume of this work[1] touch upon the question. Kant there shows that association of representations presupposes them to be associable, if the association is to be at all universal or necessary; and that their being associable implies an *affinity* among them, which is the objective basis of all association; so that this affinity and necessary association are a consequence of the synthetical unity of apperception, and harmonise perfectly with his principles, being necessarily

[1] Cf. vol. iii. Appendix A, sec. ii. 4, *sub. fin.* and sec. iii.

implied by them. This point is the very basis of the Deduction of the Categories in the First Edition of the *Critick*.[1]

Thus Kant literally retorts upon his antagonists the very charge they brought against him. Laying aside the question of necessity, let us ask: if we assume association as a general principle, and assert any special law as one of its consequences, let us say the law of causality, on what does this law or rule depend? By what was it suggested to us? Must there not be some affinity among phenomena, in order that we should ever begin to use such a rule? In short, must there not be some ground or reason in objects, not only to make us adopt this rule of association rather than that, but even to suggest to us any necessity or reason for associating phenomena at all? What account does Mr. Mill give of this? He postulates subjective association as an ultimate law, whereas Kant declares both subjective and objective association to be consequences from his first principle, that all phenomena, being representations, are *my* representations, and therefore subject at least to one uniform set of conditions, viz., those under which alone they can become to me objects of experience. This establishes a transcendental affinity among them, of which the empirical laws of association are but subordinate forms.

[1] Cf. also the 2nd Edition, §§ 14, 15 (p. 86, *sq.*).

Our opponents therefore have arbitrarily postulated a first principle, and not we. For our principle is not an hypothesis arbitrarily assumed. It is a fact that nothing can be an object except it come into consciousness. It is accordingly a fact, that phenomena must conform to whatever mental laws and conditions are necessary for producing knowledge. Hence the association postulated as an ultimate principle by the school of Hartley really results from, and is dependent upon, the synthetical unity of apperception.

The only possible answer to this objection, is to assert that the *Ego* is itself a result of association—a theory which could not possibly be verified by experience, and which substitutes an inconceivable for the above perfectly conceivable and reasonable hypothesis. I am moreover relieved from discussing the question in the present controversy by the admissions in Mr. Mill's 12th chapter (p. 241), that the phenomena of memory and of expectation are not explained by the Laws of Association, and require some such assumption as that of an *Ego* to make them comprehensible. This admission is a powerful support to my present argument, which has not been refuted, or even discussed by Mr. Mill.

Let me add a farther application of the principle. The very law of Redintegration, laid down by psychologists of both schools as the ultimate law of

association, appears to be an immediate inference from the synthetical unity of apperception, if not an inadequte statement of it. Whenever, we are told, several objects have been present to our mind simultaneously, so as to make up one total thought, any one of these presented at a subsequent time is likely to suggest the others. But all the objects present to us simultaneously have not this property, There are great numbers of objects which have been presented at the same time to us, but which do not at all suggest one another afterwards. Why not? Because they have not formed parts of one total thought. Is this indeed the case? Is it not more intelligible to answer, because the mind did not originally conjoin or connect them? The unity of apperception did not apply to them, for they were not brought under any one of the Categories (which are its phases); hence, there being no *affinity* among them, no association was possible. The law of Redintegration then if objective is based directly upon the synthetical unity of apperception.

While therefore the Kantian theory explains all the phenomena, the Association school confess themselves unable to bring those of Memory and Expectation under their theory. Here the law of Parcimony cannot be urged against the Kantian school, whose theory is not more complex than that of their opponents, and is in any case the only one which even professes to explain all the phenomena.

Having now shown that the law of association is not only recognised by Kant, but brought under his own principles, we proceed to the next point under discussion.

(2.) Mr. Mill[1] thinks he can overthrow the claims of primitive necessary judgments, by defining them as those of which the contradictory is inconceivable, and by then showing that inconceivability is no test of impossibility—in fact, that many inconceivable things have turned out to be true (or generally believed). But he has not avoided an ambiguity, very well explained in his own Logic farther on (p. 304), where he shows that inconceivable may mean either *unbelievable* or *unimaginable*, and that the inference from one of these to the other is not valid. The antipodes were once unbelievable. That two right lines should enclose a space is unimaginable. If the former turned out true, it does not follow that the latter rests merely upon association; and yet Mr. Mill thinks, because some inconceivables (of the first kind) are proved true, that others (of the second kind) do not rest upon any higher ground than an additional quantity of the same evidence.

I stated in a previous work that I held with Kant this distinction to be one of kind, and not merely of degree. To this Mr. Mill has replied (*Exam. of*

[1] *Logic*, vol. i. pp. 268, *sq.*

Hamilton, p. 177, *note*), that I must surely confess that the distinction 'admits of being construed as a difference only of degree.' We know, he adds, that associations, if constantly repeated, will produce a mental difficulty in imagining their reverse: why should not an indefinite accumulation of such associations raise the difficulty to an impossibility? In opposition to this view, I believe it psychologically false that the distinction is arrived at by a gradual accretion of associations. I had stated in a passage immediately succeeding facts which seem to me strongly to support my side. 'A mathematical friend told me he perfectly well remembered being taught when a boy, without understanding it, that two right lines cannot enclose a space. When Euclid's 4th proposition was shown him, he remembers the necessity of the axiom suddenly flashing upon him.' I shall develop this point at greater length hereafter, and shall show that the assumption of the association school, who suppose us to be always observing the mathematical outline and the number of the objects around us, is not warranted by facts. We require to have our attention specially directed by outline figures to the mere space relations of objects.

At the same time I challenged Mr. Mill to point out a case 'where an unimaginable inconceivability had been proved true,' or even possible. To this he replied that my point would have been more

effectually maintained had I made this challenge concerning anything which *seemed* unimaginable, adding 'that whatever was once proved true or even possible, must thereby have become imaginable.' I do not agree absolutely with this latter statement, for those contradictory propositions, of which Sir William Hamilton proved that one must be not only true but necessary, would not be to me the least more imaginable if I were persuaded by his arguments. But I suppose Mr. Mill means, as I did when I put forth the challenge, *empirical* proof. He says fairly enough as regards most of his antagonists, that the challenge is hard to answer, because they have not drawn a fixed line of demarcation between their unimaginables and their incredibles, and are wont to transfer the former to the latter class, if any of them happen to be proved possible. In my case he should have found no such difficulty, inasmuch as I had endeavoured to draw such a fixed line.

I had myself raised this very difficulty,[1] and had observed: 'How can we ever find a criterion to distinguish objective and subjective necessity? Surely, if all men combine a certain condition with an object, it must appear objectively necessary? I think not, *except the result implies it as a part of the construction.* And this I suppose is the criterion we must have of objective necessity in synthetical judgments, which

[1] *Fischer's Comm. on Kant, Introd.*, p. xiii.

are those upon which the whole discussion of Kant turns. There are certain objects of consciousness which manifest to us, not only themselves, but, *ipso facto*, their construction, as the only possible one which could ever have produced them. A triangle, for example, shows by the very intuition of it, that we must not only originally have constructed it with three straight lines, and in space, but that through that process alone can we now cognise it; and if any one were to assert that these facts were only necessarily associated with it, we should consider him not worth a reply.'

I had added in a note, that *in confining objective necessity originally to intuition*, I rather agreed with Locke than with Kant. I am sorry Mr. Mill overlooked this part of my argument. According to this canon, none of the inconceivables which he mentions as being in the border land should count as strictly unimaginable. There is no impossibility in imagining matter thinking, or creation *a nihilo*, except want of data. The case of Cause and Effect is not so easily answered, because it is complex. So far as it depends on our intuition of Time as successive, any violation of this condition, which Mr. Mill himself regards as primordial, is of course unimaginable. The remaining elements of the judgment are certainly not inconceivable in the same sense. Mr. Mill must also agree with me that a reversal of the law of Contradiction, which he at

length admits[1] to be primordial, is also unimaginable in the strictest sense.

Having vindicated my position thus far, I must insist on an important distinction, which I had omitted to state, but had implied in my former discussion, and which will explain most of the disputed cases. A thing may be unimaginable *because it reverses a primitive intuition*, in which case it can never become possible, for even if the constitution of our minds were changed, and the intuition vanished, its contradictory would vanish also. But a thing may be also unimaginable, *because we have no faculty wherewith to approach it*, and this may possibly be proved true.[1] To a man born blind, colour is not merely incredible, as the antipodes used to be, because it was thought that men would fall off, but unimaginable, because he cannot form the slightest notion of the nature of that intuition. But it *contradicts* nothing that he knows. Of course I do not include this kind of unimaginables in the remarks I have made about mathematical truths. Some of the examples suggested by Mr. Mill have been variously answered because of this ambiguity, and his confusion of these two species makes his answer plausible. I trust I have now left no doubt as to what my beliefs on the

[1] *Exam. of Hamilton*, p. 84.

[1] The distinction is mentioned by Mr. Mill, and passed by, *Exam. of Hamilton*, p. 83.

subject are, and even should errors arise in the application of this criterion, I should not the less maintain the soundness of the principle.

I may add that even though proof may render an unimaginable of the second kind true (credible), it does not thereby render it imaginable. Creation *a nihilo* is as unimaginable to a Christian as to a Materialist. It is not therefore sufficient for the refutation of my argument to prove that unimaginables have come to be received as true, it must be shown that they are now imaginable.

§ 3. *Space and Extension primitive, and not derived, Intuitions.*—There is no philosophical problem on which the school with which I am contending have spent more labour and ingenuity than that of the origin of our notion of Extension. Encouraged by Berkeley's celebrated analysis of Distance, which he contended to be not a primitive but a derived intuition, they have attempted to go farther, and make length and breadth, as well as depth, a result of muscular motion combined with tactual sensations. The various sensations accompanying the expanding and contracting muscle, the extended or retracted limb, are supposed to give us a measure in time, which we combine with the tactual perception of simultaneity as given in coexisting sensations. I need not occupy the reader with any fuller statement, as he will find the whole association theory amply stated and defended in Mr. Mill's

13th Chapter, entitled '*The Psychological Theory of the Primary Qualities of Matter.*'

The principal objection which has been urged on the other side is, that this theory assumes the notion to be explained, that the sensations postulated by Mr. Mill and Mr. Bain carry with them Externality from the very commencement, and that therefore this notion is not generated by association. These objections have been noticed at considerable length by Mr. Mill,[1] who has, among various particular points, made two general statements concerning our attitude in the controversy. In the first place, he thinks that we have failed to place ourselves at the standpoint of the Association School, and therefore to catch the spirit and meaning of the doctrine; and in the second place, that we have consequently made a stupid blunder in our attempts to fasten on the theory a *petitio principii.* Had we understood the question thoroughly, we should have seen, not only that he had kept clear of such a logical mistake, but 'that he could not, under any circumstances whatever, have been reduced to this necessity,' and this very startling state-

[1] The Appendix to his Chapters on the belief in an external world, and in a mental substance, discuss more generally the same controversy, which is afterwards carried into greater detail in the Chapter on the primary qualities of bodies. I shall therefore reply to these passages simultaneously, as far as possible.

ment is explained by the observation, that 'for every statement which can be made concerning material phenomena in terms of the Realistic Theory, there is an equivalent meaning in terms of Sensation and Possibilities of Sensation alone, and a meaning which would justify all the same processes of thought.' I must here separate myself from the class of philosophers censured, for the Externality of which I spoke was only Extension, and not the Reality of the world in the vulgar sense, as a substance apart from our sensations. This notion a Kantian must explain in quite a different connexion. Having made this reservation, I proceed to consider Mr. Mill's general strictures.

With regard to our inability to place ourselves at the point of view required by our opponents, I contend that it may arise not from our stupidity, but from their distortion of facts. Both parties were anxious, at least primarily, not to assume one another's standpoint, but rather to reach that of nature—that of an infant, or of an individual beginning to use his faculties in the world. In endeavouring to do this, my analysis leads me to a condition of things (as I shall presently show) inconsistent with the condition postulated by the Association School. I am accordingly unable, in one sense, to place myself at their standpoint, not because of its difficulty or obscurity, for it appears to me far easier than some other systems which I have studied, nor

I hope on account of any inherent obstinacy, but because it appears to me inconsistent with psychological facts.

The second statement of Mr. Mill, that he could not possibly have made a *petitio principii*, is surely totally untenable, if I am able to show that 'there is not, for every statement which can be made concerning the extension of phenomena in terms of the Kantian theory, an equivalent meaning in terms of sensations and possibilities of sensation alone, *and a meaning which would justify all the same processes of thought.*' It is quite possible, despite of Mr. Mill's assertion to the contrary, that in accounting for the origin of our belief in extension a philosopher may assume feelings which cannot exist without presupposing *an obscure apprehension or belief in this very extension.* But as Mr. Mill observes, it is not easy to fix the fallacy upon the Association School, because all the terms in the discussion are used ambiguously. When they are pressed that velocity or direction postulate space, they reply that they only intended to describe successive feelings, and yet presently, when the result comes out, it is found that a hidden x (as Kant would say) has accompanied the feelings, and helped them to their conclusion.

I endeavoured to show this in my previous discussion of these difficulties, and was met by ingenious replies on the part of Mr. Mill. As it is

plain that I cannot persuade him by this line of argument, I shall only notice some points in which his reply appears to me deficient, and proceed to develop my objections from another point of view.

(α.) As to my first remark,[1] though Mr. Mill and his School insist that their language about the movement of our limbs only refers to the mere succession of feelings, I still think that the main plausibility of the theory arises, as I have just said, from the reader carrying along with him through the argument the ordinary meaning of the terms employed. If it avoids a plain *petitio principii* in the hands of Mr. Mill, it owes its wider acceptance to the logically weaker, but psychologically sounder attitude of other minds.

(β.) In replying to my second objection: 'what possible meaning can direction have except *in space?*' Mr. Mill has changed my statement unwittingly into the assertion that direction can only mean space, and thinks that the converse of this statement is nearer the truth. I think the primitive element in space is extension, and not direction, if we mean by the latter muscular exertion of a certain kind, for I believe that muscular exertions at all proximate in direction are not discriminated as different till they are found to correspond to differences *already noted* in vision.

[1] *Introd. to Fischer's Comm.*, p. xviii.

Mr. Mill is silent as to the second part of my objection, that on his theory a right line should not be the simplest, but the most difficult (even if the least exertion) to attain of our notions of direction, as it hardly ever occurs in muscular exertions.

(γ.) I still believe that the notion of velocity cannot be obtained without presupposing space, and feel convinced, after many careful experiments, that both Mr. Bains' and Mr. Mill's proposed derivations of it rest upon assumptions psychologically untenable. These objections will be developed presently.

(δ.) When I pointed out that the measure of extension must not be identified or confounded with extension itself without strong reasons, Mr. Mill accepts the challenge, and says all the facts can be accounted for by such identification. If they can, it is only under the assumption that our perception of extension by sight comes into play later than our muscular experience. This is repeatedly implied by Mr. Mill, and is as much opposed to observation as his former hypotheses.

As however I have failed to convince him by my previous method of arguing, I shall now adopt a different line of attack, and endeavour to show that the psychological conditions assumed by the Association School to account for the genesis of our notions of extension and space, are founded on hasty or incorrect observation. If it can be shown

that what we know of infants, and persons cured of blindness, is in any important respects inconsistent with the conditions these philosophers assume, it will hardly be maintained by Mr. Mill that he could not possibly have been guilty of the fallacy *non causa pro causa*, which is not far removed from *petitio principii*.

§ 4. *The Sense of Vision in the Hands of the Association School.*—Any one who reads carefully Mr. Mill's or Mr. Bain's description of the genesis of the idea of extension, will perceive in the first place, that muscular exertions are throughout assumed prior in time to the exercise of vision. It is plainly implied, if not stated, several times in Mr. Mill's chapter on the subject,[1] that the infant is meditating on series of muscular sensations, before the faculty of sight 'comes in,' as he calls it, and comprises these series in a single picture. It would almost seem as if infants were born like kittens and puppies, with closed eyes, and that this state lasted not nine days but nine months. Before sight has told them anything, they are supposed to feel simultaneity, velocity, and other sufficiently complex sensations, and even to institute comparisons among them. 'The eye *then* only *comes in*,'[2]

[1] *Exam. of Ham.*, pp. 278-9, 283. The reader will see in the sequel why I here exclude the muscular motions of the eye from the catalogue of conscious muscular exertions.

[2] Cf. *op. cit.*, p. 301.

and with its greater powers of simultaneous sensation, gathers up, by its acquired perceptions, a host of such measurements in one intuition.'

If I mistake not, this condition of things is copied from the case of a man born blind, who receives his sight in a mature state, not from that of infants. I appeal to any fair observer whether in opposition to such a description, the human infant does not use its sight long before it is capable of any systematic muscular movements. Swathed up for months in such a way as almost to preclude such movements, the infant learns its first lessons by the exercise of vision, and of those tactual sensations, which are now universally discriminated from the muscular feelings, and which rather produce pleasure and pain, than knowledge of what we call the external world. The natural inference from this state of things is, that with very slight motions of the eye alone—motions so slight that they could not possibly serve as means of discrimination—a very considerable knowledge of figure and therefore extension is obtained. Gradually, as the limbs come under control of the will, experiments are made to lay hold of visible objects, and by experience we learn what muscular efforts correspond to certain peculiarities in the visible picture. But these lessons principally concern depth or distance, which is very imperfectly taught, if given at all, by the eye. I do not believe that the length or breadth

of a small object ever meant the amount of muscular energy necessary to pass the hand from one side of it to the other. The visible picture, as it is the clearest and best, so it is also the primary measure of such an object. It is only when its magnitude exceeds the limits of momentary intuition, that we are obliged to have recourse to time, and measure the object by the time necessary to traverse it.

It is a matter of fact that the image on the retina of every eye is originally perceived as *extended colour*, either element being absolutely imperceptible without the other. I said just now that with the aid of very slight motions the eye would learn to know figures accurately. I think this admission is required by the facts, and does not in any way conflict with the theory I am maintaining. But even without any motion of the eye, an extended field of vision is most positively given on the retina, and this field is by no means so small that a circle $\frac{1}{10}$th of an inch in diameter, as Mr. Bain allows, cannot be perceived by a single act of vision without movement.[1] I urge that this positive

[1] The size of the extended image on the retina is of little consequence in the discussion, provided the principle be admitted; but I may add that Mr. Bain and Mr. Mill greatly understate the amount which the eye can grasp without motion. On an absolutely black field of vision, luminous points at a considerable distance from one another are plainly perceptible without moving the eye at all. Any one may verify this assertion

fact, which no philosopher can deny, should be made the starting-point of our knowledge of extension, and it should require the very strongest evidence to make us abandon this primitive datum in nature, and to have recourse to hypotheses, however plausible, which are inconsistent with it.

How do the Association School meet this capital difficulty? It is amusing to analyse the subterfuges by which Mr. Bain endeavours to elude it. His first attempt is to assume boldly that extension means nothing but the time and muscular energy required to pass from one point to another. If this is not begging the question under discussion, I know not what that fallacy means. 'I do not see,' says he in a passage quoted by Mr. Mill,[1] 'how one sensation can be felt as out of another, without already supposing that we have a feeling of space.' Neither do I. And it is precisely on this ground that Kant contends that the idea of space cannot be a generalisation or abstraction from experience. 'If I see two distinct objects before me,' he pro-

by walking into a dark room, and fixing his eyes on the fire. Several extended pieces of red hot coal will be distinctly visible, separated by black intervals. The contrast of light being great, those parts of the retina which are not furnished with papillæ as fully as its centre, are still able, without any motion of the eye, to convey a clear image to the mind. I request the reader to make the experiment, and satisfy himself on this point.

[1] *Op. cit.*, p. 288.

ceeds, 'as two candle flames, I apprehend them as different objects, and distant from one another by an interval of space, but this apprehension presupposes an independent experience and knowledge of lineal extension.' I deny that it pre-supposes any such thing, for lineal extension is given with the intuition of the two flames, the very first time they are perceived. '*There is no evidence*,' says he, '*to show* that, at the first sight of these objects, and before any association is formed between visible appearances and other movements, I should be able to apprehend in the double appearance a difference of place.' This is positively audacious. Mr. Bain considers us so completely ousted by his theory, that he calls upon us to prove by evidence that the image on the retina is perceived as extended! 'I feel,' he admits, 'a distinctness of impression, partly optical and partly muscular, but in order that this may mean to me a difference of position in space, it must [that is, to satisfy Mr. Bain's theory, and for that purpose only] reveal the additional fact, that a certain movement of my own would carry my hand from one flame to another; or that some other movement of mine would change by a definite amount the appearance I now see.' This vague, and to me unintelligible clause appears to portend a new explanation in store for us, when the present one fails. 'If no information is conveyed respecting the possibility of movements of

body generally, no idea of space is given,' and here is the reason, 'for we never consider that we have a notion of space, unless we distinctly recognise this possibility.' This I positively deny, and even were it so now, it would not prove Mr. Bain's point, for it might have been generated by association of ideas, even if extension were at first perceived by the infant's eye without such notions being attached to it. 'But how,' Mr. Bain concludes, 'a vision of the eye can reveal beforehand what would be the experience of the hand on the other moving members, I am unable to understand.' But this is perfectly unnecessary, it being quite sufficient for the facts of experience, though not for Mr. Bain's theory, that by experience we should learn what is the correspondence between them. Furthermore, Dr. Franz's case, to be discussed presently, shows that even this curious anticipation, incomprehensible as it seems, can find support in carefully observed facts.

This passage is from the First Edition of what Mr. Mill[1] calls Professor Bain's 'great work on the mind.' In his Second Edition, the author appears to have had an inkling that his theory was not safe from attack, and he accordingly adds an 'instructive note' with some more assumptions. He is obliged to concede that there is a purely op-

[1] Mill, *op. cit.*, p. 266.

tical extended impression, not requiring muscular movement, when we look at a circle or square of a very small size. 'Why then may we not say that through luminous tracing alone, we have the feeling of visible form?' Here Mr. Bain himself brings the question to an issue. What is his reply? 'By making an extreme supposition of this nature, it is possible to remove the case from a direct experimental test.' The objection is curiously irrelevant. The contending parties are endeavouring to discover what sight could teach us originally without muscular movements, and what these movements could teach us without sight. For this purpose Mr. Bain himself has made suppositions far more extreme than that to which he objects, and no less removed from direct experimental tests.

But even so, Mr. Bain sees strong grounds for maintaining his opinion. 'In the first place, our notions of form *are manifestly obtained* by working on a large scale, or by the survey of objects of such magnitude as to demand the sweep of the eye, in order to comprehend them.' This I hold to be psychologically false, and assumed to sustain a tottering theory. It is not true that 'the idea of a circle is first gained by moving the eye round some object of considerable size, and that having done this, we transfer the fact of motion to smaller circles, although they would not of themselves require an extensive ocular sweep.' In fact the very reverse

is true; for on Mr. Bain's theory we should forthwith proceed to the absurdity that a large circle, requiring motion of the eyes round it, *is more easily recognised as such than a small one.* It also contradicts the fact brought out prominently in Dr. Franz's case, that to move the eye round large objects is an effort, at first disagreeable, and producing difficulties in perceiving them as objects, whereas small things are perceived, practically, by a single act.

Mr. Bain's second reply recurs to his old *petitio principii.* 'We mean by a round form something that would require a given sweep of the eye to comprehend it; and unless we identify the small spot with the circles already seen, we do not perceive it to be a circle.' I again deny both the fact and the inference, the former as only to be received when Mr. Bain's theory is established, and the latter because I hold that our first intuition of a circle is a small image given at once on the retina as extended, with which we compare larger circles afterwards.[1]

Mr. Mill's arguments on the subject, in addition to the above quotations from his Scotch supporter,

[1] The reader will observe that Mr. Bain here speaks of the muscular motions of the *eye* as teaching us extension. This organ is quite thrown into the background when he comes to speak of muscular motions as a *measure* of extension, since the minute and momentary movements of the eye manifestly afford no such measure. I shall revert to this point hereafter.

are not very considerable, and are rather defensive than offensive. In the first place he endeavours to weaken the force of Sir Wm. Hamilton's clear statement that we must be cognisant of extension by sight, because we are conscious from the very beginning of colours, and of differences in colour. This argument cannot possibly be refuted. But Mr. Mill lays great stress on the fact that a perfectly fixed eye can only embrace a very small field of vision, at least distinctly, and thinks the conclusion warranted, that 'were the eye immovable, and were we without accompanying muscular sensations, the impression we should have of a boundary between two colours would be so vague and indistinct as to be merely rudimentary.' I think if the line of separation *crossed the very centre* of the eye picture, the perception of this line would be from the beginning quite distinct, and though very short, quite sufficient to give us our first notion of extension, rudimentary if Mr. Mill likes, but still far clearer and more definite, as well as earlier, than any corresponding knowledge obtained by the movements of our limbs. Mr. Mill falls back on the same idea of extension as that given by Mr. Bain, and having *assumed* this to be the correct one, advances to the following startling statement: 'to confer on these discriminative impressions (acknowledged on all hands to be given by sight) the name which denotes our matured and perfected cognition

of Extension, *or even to assume that they have in their nature any thing in common with it*, seems to be going beyond the evidence.' It appears to me that a man must be very much debauched with philosophy indeed if he cannot see that he is going directly against the evidence in *denying* this identity or analogy.

'When a larger collection of carefully observed facts respecting persons blind from birth, shall have been subjected to an acuter and more discriminating analysis, the additional insight which we may hope to obtain into the psychology of such persons, will probably dissipate the remains of obscurity which still hang over some details of the subject.'[1] I cannot but think that this remark was written before the note on Dr. Franz's case,[2] which curiously enough is a more exact observation than had hitherto been made, and which militates so strongly against Mr. Mill's theory, that he candidly confesses its facts if established would demand a considerable modification of his text. Therefore, I am at a loss to know why he did not study a case so important, and so easily accessible in its original form, instead of taking it secondhand from Dr. M'Cosh's imperfect description, and contenting himself with adding a few notes of interrogation and a few sceptical reflections on the accuracy of

[1] Mill, *op. cit.*, p. 302.

[2] p. 287, *note*.

the report. A perusal of Dr. Franz's[1] paper would have removed most of his difficulties. It is so important, and so little known, that I proceed to give a complete abstract of its psychological side, in the author's own words.

§ 5. *Dr. Franz's Case of a Gentleman born blind, and successfully operated on at the Age of eighteen.*— 'Mr. F. J., the subject of the present memoir, is the son of a physician; endowed with an excellent understanding, quick power of conception, and retentive memory. The father, to whose statement, on account of his professional knowledge, more weight is to be attached, informed me that both eyes were turned inwards to such an extent that a portion of the cornea was hidden by the inner canthus, and that in both pupils a yellowish-white discoloration was to be observed, which, being situated behind the iris, could not be the pupillary membrane. That the strabismus and cataract of both eyes in this case were congenital, is evident from the testimony both of the parents and of the nurse, whom I have closely questioned on this subject. The latter, who can distinctly remember all the circumstances of the case, told me that when the child was a few months old, she held a light before its eyes, of which it took no notice. I ascertained also from her that the eye-balls had not that restless motion which is generally observed in those

[1] *Trans. Royal Society for* 1841, Part I., pp. 59, *sqq.*

who are born blind, but that both eyes were always turned inwards, and that but rarely either the one or the other was moved from the internal canthus.'

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Dr. Franz then proceeds to mention some operations performed on the eyes of his patient while an infant, after which he says:—

'The patient acquired a certain sensation of light, which he did not seem to have had before the operation. He had not the slightest perception of light with the right eye; it was perfectly amaurotic. With the left eye he had a perception of light, and was even capable of perceiving colours of an intense and decided tone. He believed himself moreover able to perceive about one-third of a square inch of any bright object, if held at the distance of half an inch or an inch from the eye, and obliquely in such a direction as to reflect the light strongly towards the pupil. But this I am convinced was a mere delusion; for, from the state of the interior of the eye, it was evident that all rays of light falling in the direction of the optic axis in the pupil must be intercepted, and reflected by the opaque capsule. By these rays, therefore, a perception of light indeed might be conveyed, but certainly no perception of objects. On the other hand, it seems probable that a lateral cleft in the capsule permitted rays of light to pass into the interior of the eye.

'[But assuming] that the cleft in the capsule

held the same relation to the eye in this instance, as a small hole in a card placed immediately before a healthy eye; in this case the patient would not only have seen an object at the distance of half an inch or an inch, but even at a much greater distance. That he was incapable of this I have satisfied myself by repeated experiments, which have led me to the conclusion that his belief that he really saw objects resulted solely from his imagination, combined with his power of reasoning. In feeling an object and bringing it in contact with the eyelids and the cheek, while holding it close before his eye, by his refined sense of touch an idea of the object was produced, which was judged of and corrected according to the experience he had gained by constant practice. This opinion is confirmed by the observations of those who have known and watched him for years, and also by a fact which I have myself frequently observed, viz., that all well-educated blind persons, who are not absolutely amaurotic, endeavour to persuade others that they see more than they really can, in order to conceal as much as possible their deficiency in the noblest of the senses, and from a reluctance to be regarded as objects of compassion.

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'On terminating this inquiry into the condition of the visual organ and the actual state of vision, I may here be allowed to mention that the patient's

sense of touch had attained an extraordinary degree of perfection, and that in order to examine an object minutely he conveyed it to his lips. The sensation produced by silk stuffs was most pleasing to him. He was said to possess the power of distinguishing colours by the touch, but this assertion was not confirmed by his own testimony.

[Dr. Franz's operation is then described.]

'On opening the eye for the first time on the third day after the operation, I asked the patient what he could see; he answered that he saw an extensive field of light, in which everything appeared dull, confused, and in motion. He could not distinguish objects. The pain produced by the light forced him to close the eye immediately. Two days afterwards, the eye, which had been kept closed by means of court-plaster, was again opened. He now described what he saw as a number of opaque watery spheres, which moved with the movements of the eye, but, when the eye was at rest, remained stationary, and then partially covered each other. Two days after this the eye was again opened; the same phenomena were again observed, but the spheres were less opaque and somewhat transparent; their movements more steady; they appeared to cover each other more than before. He was now for the first time capable, as he said, to look through the spheres, and to perceive a difference, but merely a difference, in the surrounding objects. When he

directed his eye steadily towards an object, the visual impression produced by the object was painful and very imperfect, and no clear visual perception of it took place, because the eye, on account of the intolerance of light, could not be kept open long enough for the formation of the idea as derived from visual sensation. The appearance of spheres diminished daily; they became smaller, clearer, and more pellucid, allowed objects to be seen more distinctly, and disappeared entirely after two weeks. The *muscæ volitantes*, which had the form of black, immovable, and horizontal stripes, appeared every time the eye was opened, in a direction upwards and inwards. When the eye was closed, he observed, especially in the evening, in an outward and upward direction, an appearance of dark blue, violet, and red colours; these colours became gradually less intense, were shaded into bright orange, yellow, and green, which latter colours alone eventually remained, and in the course of five weeks disappeared entirely.

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'As soon as the intolerance of light had so far abated that the patient could regard an object without pain and for a sufficient time to gain an idea of it, the following experiments were made in the presence of Dr. Swaine. The first experiments were of that class in which the idea of a visible object is derived merely from pure visual sensation; the suc-

ceeding, of that kind in which the idea, in ordinary cases, depends upon the sense of sight combined with the sense of touch, and is gained by reflecting on the impressions made on the organs of both senses. It was necessary to perform these experiments on different days, as otherwise they would have distressed the eye too much.

'*First Experiment.* Silk ribands of different colours, fastened on a black ground, were employed to show, first the primitive, and then the complementary colours. The patient recognised [?] the different colours, with the exception of yellow and green, which he frequently confounded, but could distinguish when both were exhibited at the same time. He could point out each colour correctly when a variety was shown him at the same time. Grey pleased him best, because this colour he said produced an agreeable and grateful sensation; the effect of red, orange, and yellow was painful, but not disagreeable; that of violet and brown not painful, but very disagreeable; the latter he called ugly. Black produced subjective colours, and white occasioned the recurrence of muscæ volitantes in a most vehement degree.

'*Second Experiment.* The patient sat with his back to the light, and kept his eye closed. A sheet of paper, on which two strong black lines had been drawn, the one horizontal, the other vertical, was placed before him, at the distance of about three

feet. He was now allowed to open the eye, and, after attentive examination, he called the lines by their right denominations. When I asked him to point out with his finger the horizontal line, he moved his hand slowly, as if feeling, and pointed to the vertical, but after a short time, observing his error, he corrected himself. The outline in black of a square, six inches in diameter, within which a circle had been drawn, and within the latter a triangle, was, after careful examination, recognized and correctly described by him. When he was asked to point out either of the figures, he never moved his hand directly and decidedly, but always as if feeling, and with the greatest caution; he pointed them out, however, correctly. A line consisting of angles, or in other words a zigzag, and a spiral line, both drawn on a sheet of paper, he observed to be different, but could not describe them otherwise than by imitating their forms with his finger in the air. He said he had no idea of these figures.

'*Third Experiment.* The windows of the room were darkened, with the exception of one, towards which the patient, closing his eye, turned his back. At the distance of three feet and on a level with the eye, a solid *cube* and a *sphere*, each of four inches in diameter, were placed before him. Allowing him to move the head in a lateral direction no farther than was necessary to compensate the point of view

of the right amaurotic eye, I now let him open his eye, and requested him to state decidedly what he observed. After attentively examining these bodies, he said he saw a *quadrangular* and a *circular* figure, and after some consideration he pronounced the one a *square* and the other a *disc*. His eye being then closed, the cube was taken away, and a disc of equal size substituted and placed next to the sphere. On again opening his eye, he observed no difference in these objects, but regarded them both as discs. The solid cube was now placed in a somewhat oblique position before the eye, and close beside it a figure cut out of pasteboard, representing a plane outline prospect of the cube when in this position. Both objects he took to be something like flat quadrates. A pyramid, placed before him with one of its sides towards his eye, he saw as a plane triangle. This object was now turned a little, so as to present two of its sides to view, but rather more of one side than of the other; after considering and examining it for a long time, he said that this was a very extraordinary figure; it was neither a triangle, nor a quadrangle, nor a circle; he had no idea of it, and could not describe it; in fact, said he, I must give it up. On the conclusion of these experiments, I asked him to describe the sensations the objects had produced, whereupon he said that immediately on opening his eye, he had discovered a difference in the two objects, the cube and the sphere, placed before him, and

perceived that they were not drawings; but that he had not been able to form from them the idea of a square and a disc, until he perceived a sensation of what he saw in the points of his fingers, as if he really touched the objects. When I gave the three bodies (the sphere, cube, and pyramid) into his hand, he was much surprised that he had not recognized them as such by sight, as he was well acquainted with these solid mathematical figures by his touch. These experiments prove the correctness of the hypothesis I have advanced elsewhere on the well-known question put by Mr. Molyneux to Locke, which was answered by both these gentlemen in the negative, and has been much discussed since their time.

'*Fourth Experiment.* In a vessel, containing water to about the depth of one foot, was placed a musket-ball, and on the surface of the water a piece of pasteboard, of the same form, size, and colour of the ball. The patient could perceive no difference in the position of these bodies; he believed both to be upon the surface of the water. Pointing to the ball, I desired him to take up this object; he made an attempt to take it from the plane of the water, but when he found he could not grasp it there, he said he had deceived himself, the objects were lying in the water; upon which I informed him of their real position. I now desired him to touch the ball, which lay in the water, with a small rod; he attempted this several times, but always missed his

aim; he could never touch the object at the first movement of his hand towards it, but only by feeling about with the rod. On being questioned with respect to reflected light, he said that he was always obliged to bear in mind, that the looking-glass was fastened to the wall, in order to correct his idea of the apparent situation of objects behind the glass.

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'When the patient first acquired the faculty of sight, all objects appeared to him so near that he was sometimes afraid of coming in contact with them, though they were in reality at a great distance from him. He saw everything much larger than he had supposed from the idea obtained by his sense of touch. Moving, and especially living objects, such as men, horses, &c., appeared to him very large. If he wished to form an estimate of the distance of objects from his own person, or of two objects from each other, without moving from his place, he examined the objects from different points of view by turning his head to the right and to the left. Of perspective in pictures he had of course no idea; he could distinguish the individual objects in a painting, but could not understand the meaning of the whole picture; it appeared to him unnatural, for instance, that the figure of a man represented in the front of the picture should be larger than a house or a mountain in the background. All objects appeared to him perfectly flat; thus, although he very well knew by

his touch that the nose was prominent, and the eyes sunk deeper in the head, he saw the human face only as a plane. Though he possessed an excellent memory, this faculty was at first quite deficient as regarded visible objects; he was not able, for example, to recognize visitors, unless he heard them speak, till he had seen them very frequently. Even when he had seen an object repeatedly, he could form no idea of its visible qualities in his imagination, without having the real object before him. Heretofore, when he dreamed of any persons, of his parents, for instance, he felt them and heard their voices, but never saw them; but now, after having seen them frequently, he saw them also in his dreams. The human face pleased him more than any other object presented to his view; the eyes he thought most beautiful, especially when in motion; the nose disagreeable, on account of its form and great prominence; the movement of the lower jaw in eating he considered very ugly. Although the newly-acquired sense afforded him many pleasures, the great number of strange and extraordinary sights was often disagreeable and wearisome to him; he said that he saw too much novelty which he could not comprehend. And even though he could see both near and remote objects very well, he would nevertheless continually have recourse to the use of the sense of touch.

'Walking alone in the crowded streets, especially

in the city, he found very tedious. He said, seeing so many different things, and the quick movements of the multitude of people, carriages, &c., confused his sight to such a degree, that at last he could see nothing; that the sensation produced by the object last seen had not yet disappeared from the retina, when the next object made its impression thereon, by which means confusion of ideas, great anxiety, and even vertigo were occasioned, from which he could only free himself by closing his eyes for a few moments.'

The difficulties raised by Mr. Mill are for the most part soluble from this fuller abstract. His recognition of a horizontal line, and description of it, arose (I conceive) from the fact that the *muscæ volitantes* with which he had been at first troubled appeared in the shape of *horizontal bars*.[1] As to Mr. Mill's difficulty how he could know that the sphere and cube presented to him *were not drawings*, it is answered by the fact that black lines on white paper had been shown to him in a previous experiment. He perceived at once that the outlines of the solid figures had not the same hard clearness, and so pronounced them different from the drawings he had already seen. As to the complete blindness of the patient before the operation, there is no part

[1] I may observe that this statement was made in England, and is not due to an Irishman.

of Dr. Franz's report more complete and careful. There was in one eye a sensibility to strong light,[1] but none whatever as to form, and this was scientifically ascertained by experiments, because the patient said or fancied he had some such notion. There is no reason to believe that he was informed by those around him that the sphere and cube were tangible objects. On the contrary, every care was taken to extract from him his first visual impressions without any previous hint. The whole case tells therefore as strongly as possible against the theory of the Association School, and shows that there is an original feeling of identity between extension as given by sight, and extension as given by touch.

Let me observe, in concluding this part of the discussion, that it is by no means necessary to our side of the question that a blind man should identify particular visual figures with particular series of muscular motions, a thing which Mr. Mill thinks we must prove. Dr. Franz's experiments might be considered conclusive, but I persist that it is unnecessary. Provided we recognise that the extension we see is the same sort of thing as the ex-

[1] This fact may perhaps have given him the idea of mere extension by sight; but without some definite separations of colour; there could be no forms, and therefore nothing to explain the remarkable identification of eye pictures and muscular feelings.

tension we feel, the Kantian theory is quite justified. It becomes a matter of experience to discover what movements or sensations are required to bring our bodies to a point which we see before us, and in all lengths exceeding a very limited extent, the eye does not tell us exactly how much the muscles of the limbs must do to correspond to it. If the twenty-two yards which a cricketer tries to measure with his eye, from constantly seeing it marked out, were nothing but a visual mark for the exertion of walking the distance, I suppose he would be better able to calculate the distance than he now is. The visual picture always requires verification from the muscles of the limbs, or from an equivalent tape, because it is from the beginning *a different measure.* I have also assumed throughout this discussion that we do obtain extension from touch, an opinion which I now proceed to examine more closely.

§ 6. *The Muscular Sense according to the Association School.*—Having shown that the sense of sight is unduly depreciated by my adversaries, I proceed to indicate how the sense of touch has been exalted in proportion, and how functions have been attributed to it beyond the evidence which I can gather from the most careful and oft-repeated observations. The Association School, having styled themselves *psychological* thinkers, have to some extent imposed on the philosophic world a belief, that in empirical

observation and experiment at all events they have surpassed those whom they call *a priori* thinkers. The facts I have already laid before the reader will show how far this claim is to be acknowledged without careful testing of their statements. The derivation of space and extension from touch is not accomplished without introducing an additional series of assumptions, which I have been unable to verify, and which I refuse to accept without farther evidence.

(1.) The first notion which they assume is that of *simultaneity*, given as they think by the presence of several sensations at the same moment. I questioned this point in a former work when discussing Platner's celebrated case, in which we are expressly told that if 'objects, and the parts of his body touched by them, did not make different *kinds* of impression on his nerves of sensation, he would take everything external for one and the same.'[1] This remark Mr. Mill himself urges against Hamilton, who thought that even tactual impressions similar in kind were originally given as separate in space. Mr. Mill's exposition of the genesis of extension, starting from the contact of both hands with two small objects, is therefore inconsistent and untenable, unless he could add that the sensations in the two hands are *different in kind*. His reply to

[1] Mill, p. 277.

me (p. 279, *note*) errs similarly, for it is no answer to my difficulty that we can perceive a sound and a smell at the same moment, as well as separately, and that we are thus given simultaneity. For the sound and the smell would only suggest that two separate sensations could be felt together, not that these sensations coexisted in space. The inference from the simultaneity of sensations *differing in kind*, which cannot give us space, to those *of the same kind*, which can, is by no means obvious, and it was this latter which I thought had not yet been made clear. With no knowledge from sight, I am still doubtful whether separate sensations of touch would not produce, as Mr. Mill and Mr. Bain themselves say (at other times), a *greater volume of sensation*, rather than two simultaneous, but distinguished sensations.

At all events, as they acknowledge that it would be so, and as I cannot admit without proof that sensations differing in kind would lead the mind to this discovery, it remains for Mr. Mill to maintain that we may have sensations of the same kind, but differing sufficiently in degree, to suggest to us that they are separate in space, though simultaneous. Thus if the objects touched by the hands when separate (according to his supposition) were hot and cold respectively, or hard and soft respectively, he might argue that these would be given as separate, and not as one confused sensation. It appears to me

that even if this point were granted (though I still doubt its correctness), the theory would nevertheless be untenable. For such pairs of sensations *are most decidedly the exception, not the rule.* The great majority of those tactual sensations, whereby we are supposed to learn extension, are very similar in degree as well as in kind; by the very conditions therefore of their favourite association, our adversaries cannot pretend to base an irresistible belief on the evidence of exceptional cases.

(2.) I pass in the next place to the supposition of Mr. Bain, who accounts for the genesis of extension not by the motion of the hand from one object to another touched by the second hand, but (after Brown) by the direction and intensity of the effort made in contracting and extending a muscle or a limb. The objections long since raised against this derivation have not been answered. 'In the first place,' says Mr. Bain, 'this sense of muscular range gives us *lineal* extension.' Had he said, rectilinear, the fact would at once have been denied, for Weber's experiments have shown the great difficulty of producing a right line by extending or contracting the muscles. According to Mr. Bain, it would therefore follow that not a right line, but rather some sort of curve, should be apprehended as the simplest extension in space. Again, the moving limb would not give us length without breadth, and so the surface must come into the

mind before the line. These difficulties have been urged long ago, and not fairly met; but there are many more in store for Mr. Bain, and of a kind perhaps better suited to show the weak points in his argument.

It is not officially asserted by Mr. Bain that we have a distinct feeling for each *degree* of contraction of a muscle, by which this condition can be discriminated as such from the proximate degree of contraction. In fact he distinctly 'does not mean to affirm' this.[1] He says, on the contrary, that it is not the muscular state arrived at, but the series of motions required to arrive at it, felt as *series in time*, which gives us extension. According as this series is longer, and requires greater contraction or extension of the limb, we believe the extension to be greater. Let me now entreat the reader's attention.

The two most obvious conditions to make this muscular series in time a standard measure are: (1) a fixed starting-point, and (2) a constant rate of velocity. For example, if the extension of an object placed in the hand is to be measured, as my opponents will have it, by the interruption in the series of feelings produced in closing the hand, then the object will not appear constant in size, unless the contraction starts from a fixed point of

[1] Cf. *Mill*, p. 268.

feeling, say perfect flatness (openness) of the hand, and unless the contraction is carried on perpetually (or at least for a long time) at a perfectly uniform rate. If the hand be already a little contracted, Mr. Bain has just conceded to us that each degree of contraction is not in itself discriminated, and that therefore we cannot know from whence we start. If the contraction takes place more rapidly, the series *in time* will be shorter, and therefore the extension will appear to vary. Doubtless the reader has already outrun me to my first conclusion, that the two indispensable conditions required by Mr. Bain's theory are not only far from psychologically universal, but are even very exceptionally present. It is not true that we start from any fixed point in the expansion or contraction of our muscles; it is not true that we perform these operations at any fixed rate. A brief observation of the motions of an infant's muscles will convince any fair student, who does not concede the point at first hearing.

It may be allowed, in the case of considerable differences, 'that in comparing two different lengths we can feel which is the greater.'[1] But I deny altogether, that unless the very exceptional conditions which Mr. Bain has imposed upon himself (as we have seen) be realised, 'we can also acquire some absolute standard of comparison, through the

[1] *Mill*, p. 269.

permanency of impressions sufficiently often repeated.' The fact is that as soon as difficulties arise, he departs even from the true observation he had himself made, that we cannot measure by a distinct feeling the *degree* of contraction, as distinguished from the *series* required to reach it. At the outset it was conceded that there is no distinguishable feeling attached to a limb extended 4, 6, 8, and 10 inches respectively—that this is only known artificially by long experience of the difference in the time required to stretch the distances. How then can we attain an absolute standard? Surely not by the length of the series in time, for that length perpetually varies according as we use more or less energy, or even use the same amount more or less quickly. It must then be by the state of tension arrived at, which we have been already told *cannot be discriminated from the immediately proximate state.*

Mr. Bain's change of attitude becomes obtrusively marked as his difficulties increase. How does he propose to explain *velocity?* The obvious solution is that it arises from a comparison of space (as given by sight) with the time required to pass through it. If the same space so perceived is passed through first in ten seconds, and then in five, we say the latter motion has a greater velocity. But as Mr. Bain denies himself the assistance of sight, what subterfuge is open to him?

'We must learn,' says he, 'to feel that a slow motion for a long time is the same as a quicker motion with less duration; *which we can easily do by seeing that they both produce the same effect in exhausting the full range of a limb.*' Here then we have the first position completely abandoned. We were told above that the *series*, and not the *state* at the end of the series was the muscular feeling known and discriminated by the mind. Here it is the state at the end of the series which is brought into prominence, and we are told that all methods of reaching it are perceived by the mind to be equivalent. Verily we are trying to catch a real Proteus. But let us play the part of Menelaus, and not relax our hold.

I persist, that we can learn nothing of the kind except we start from the same point consciously, and arrive at the same goal consciously, in our muscular movement. We have already seen that the former position is not sustainable. The latter is equally weak. Is there such a thing as the *full range of a limb*, which we know we cannot exceed? Is it not a common thing for us to employ greater energy, and therefore more velocity, not that we may arrive at this goal, but that we may exceed it? and I suppose it is physiologically true also, that our ordinary full reach may be slightly extended by using greater exertions. But even supposing we had a distinct consciousness

of what Mr. Bain calls the 'total sweep' of a limb, no one can deny that it is a condition exceptionally reached, and that if we could not learn the meaning of velocity except in those rare cases *where we started from one extreme and proceeded to the other*, the idea would not be an early and obvious, but a late and precarious acquisition. Nor am I certain that even in these exceptional cases, we should *identify* the two acts, and not rather consider them to be *two different ways* of reaching the same end, seeing that the sensations are very different. It would be like going to a certain place by two different roads.

But I have kept a much stronger objection for the last. *It is not psychologically true that we identify a slow and a quick motion over the same amount of space.* Let the reader verify this by a simple experiment. A blindfolded man, if his hand be passed quickly over a surface, and then slowly over the same surface (say a book or a table) will invariably declare the surface to be different, and that over which he has passed slowly *to be the larger.* In fact any one may verify it by shutting his own eyes, and trying the experiment. The shorter series in time asserts its rights even in the case of full-grown and educated men, in spite of the greater energy employed, and shows clearly that without sight, velocity is not estimated correctly; at all events, Mr.

Bain's derivation errs at every step, and contains a whole nest of psychological assumptions.

(3.) There is but one subject more which must be briefly noticed to make the discussion complete. I have hitherto followed the Association School in keeping out of the controversy as to the muscular motions those performed by the eye, when it desires to comprehend an object of considerable size. This omission is remarkable enough, for when the same philosophers are refuting the possibility of our learning space by simple vision, they insist constantly on the muscular motions of the eyes, their convergence, the sweep of the eye, and so forth. Why do not these particulars appear, when they are trying to account for extension as a series of muscular sensations? Simply because everybody would at once feel the absurdity of setting up a series of minute and hardly felt eye-movements as the measure of extension. These lesser motions of the eyes are almost automatic, and accompanied with so little exertion, that (as I before said) we may include them under simple vision, and allow that the knowledge gained by them does not fall under the scope of the Association theory. It is not necessary that we should claim them, controversially, but I think as a matter of psychological truth the muscular motions which alone can serve Mr. Mill and Mr. Bain are those where we are

conscious of some effort, and of effort lasting through some appreciable time.

I have now gone as fully as I was able through all the objections to the Kantian theory arising from the positive theory which derives Space from Time and muscular feelings; and although my argument is long and intricate, I trust it is clear and cogent enough to convince the reader that the Kantian theory has not been overthrown, and is not likely to be overthrown, by such weapons. To retort a sarcasm of Mr. Mill's: 'his School has referred the doctrine of Kant to the right test. Their objection, if true, is conclusive, *but they are not very particular about the proof of its truth.*'[1]

§ 7. *The Necessity of Mathematical Judgments.*— I cannot but think that the arguments by which the Association School seek to explain the peculiar features of mathematical intuitions form the weakest part of their system. But it is absolutely necessary that the philosopher who has accounted for Space as a derived notion should deny the primitive character of the relations of space—especially of geometry; for in the case of arithmetic it would be quite possible to admit Mr. Mill's derivation of space, and yet deny his conclusions concerning numbers. Although arithmetic is, in my opinion, as well as in his, actually learned from space, there can be no

[1] *Mill*, p. 245.

doubt that it is possible to learn it from a succession of single sensations of the same kind, as for example, sounds. Time being admitted primitive by the Association School, this, the simplest analysis of its succession, must also be conceded primitive, and thus arithmetic would be traced up to one of the primitive conditions of the mind. It might farther be argued, that all our intuitions of numbers in space are successive acts of apprehension, and that therefore even this aspect of arithmetic could be reduced to a simple analysis of the laws of Time.[1] It is undoubtedly owing to this close relation of Arithmetic to Time, that it is so universally applicable, as compared to geometry. For while the latter only concerns our external intuitions of sight and touch, and their representations in the imagination, the former refers both to these and to the remainder of our intuitions, and even to those inner states of mind which can never possess any form.

But I leave it to others to develope these views against the Association School; I desire rather to consider arithmetic in close relation with geometry, as the sciences immediately derived from our intuitions of space, especially from our intuitions of sight. We have seen above that the human eye is

[1] These interesting suggestions are due to my friend Dr. Tarleton.

conscious from the first of an extended field of vision. Such a field necessarily implies boundaries and subdivisions, in other words, figures and units. The laws of these boundaries and subdivisions appear intuitively, up to a certain point of complication, as soon as the field of vision is analysed. Requiring then an act of experience for their development, these laws of space do not require an accumulation of experience for their proof. Being self-evident from an analysis of our external intuition, they depend indeed for their apprehension upon this analysis, and may therefore come distinctly into our consciousness at a late period,[1] or in the case of savages, perhaps never. But for all that as soon as they are apprehended, they are at once perceived as necessary, and as self-evident. This is, as I conceive, the true account of the origin of Mathematic.

The Association School give a very different account of the whole matter. They deny both the facts and the inferences of the Kantian School. They consider the supposed necessity of mathematical judgments to be an illusion,[2] arising from the greater mass of evidence we have for such truths, and in consequence from the greater firmness of the associations we form concerning them. They deny

[1] See above, p. 102.

[2] Mill's *Logic*, i., p. 253.

that our sense of vision gives us originally distinct intuitions, and confine its province to indicating sensations by which we may anticipate our muscular exertions. They even venture to assert, that the reverse of mathematical truths might be possible, under certain variations of our experience, and one writer has had the rashness to suggest what variations would suffice.[1]

On many of these points, my opinion has already been stated and vindicated. I have explained what I mean by necessity, and how it applies peculiarly to mathematical judgments. I have discussed the earliest information given by the sense of vision, and have shown that the opposed theory does not embrace the plain facts of the case. But there are two additional points which are brought prominently forward by this special controversy, to which the reader's attention must be directed: first, the assertion, that the alleged necessity of mathematical judgments arises from *a superior degree of empirical evidence;* secondly, that the inconceivability of their reversal is due to the *accident of our evidence being consistent*, and not to the primitive laws of our intuition. Is it true that we have been observing examples of the laws of mathematics from the dawn of consciousness, and that *therefore* we cannot but believe them? Is it true that we could, if we had

[1] *Mill on Hamilton*, p. 86.

any starting-point in experience, proceed to imagine them no longer true, but false?

§ 8. It is assumed by Mr. Mill as self-evident that we are perpetually experiencing exemplifications of the simpler axioms of mathematics. We are constantly presented, he says, with cases of parallel lines not meeting, of two right lines not enclosing a space; of 2 and 2 making 4, and not 5. Hence we associate these facts indissolubly together, and cannot conceive them reversed. In a previous discussion of the subject, I permitted some of these statements to pass unchallenged.[1] But when I found, upon farther reflection, that many psychological assumptions had been made in other parts of the association theory, which implied hasty or inaccurate observation, it appeared desirable to sift afresh the evidence for these statements as to the mathematics of ordinary experience. The following remarks will show that here also the Kantian theory is better supported by the facts, than the theory which professes to be derived from them alone.

It is of course certain that all phenomena given to us as external are subject to the general laws of space, as they are called. It is certain that the outlines of objects and their numbers are exemplifications of these laws, *but surely it is first necessary*

[1] Their strongest statement is perhaps in Mill's *Logic*, i., p. 261.

that we should attend to these outlines and numbers, by abstracting from other qualities. I do not believe it to be psychologically true, that from our earliest youth we perform this abstraction: I hold on the contrary that we seldom make it, and that when we are taught mathematical figures and their meaning, we do not at first identify them with the outlines or numbers of common objects. As soon as the truth is duly explained to us, I think most men's memory will tell them, that its universal and necessary character rather *flashes upon us suddenly, and we then begin to see* that our experience has all along been exemplifying the truth to us, but that we had not hitherto perceived it. If this be so, it is not upon the evidence of such experience that we believe it, but rather from having been incited, perhaps for the first time, to analyse our intuitions of space, and perceive what they necessarily imply.

If this position appear strange to the student, let him reflect how difficult it is to obtain in every-day experience examples of *simple* mathematical figures, such as, for instance, triangles. Let him also consider that the great majority of the geometrical figures present to our eyes are due to the accident of our architecture, and that in a state of nature, among caves and wigwams, it would be difficult to find such suggestions. We all know that nature's handiwork is often beautifully geometrical, but always with great intricacy and variety, and not like

our dull rows of square houses. In fact I feel confident that our experience is not specially adapted to bring out into distinct consciousness, by means of its outlines, a perception of the axioms of geometry, and that the increase of regular outlines, in our civilised condition, has led philosophers to raise what is merely an accident into a law.

But surely, even if the outlines of nature be not such as to suggest *geometrical* axioms, there is ample basis for *arithmetical* truths in our experience. Flocks of sheep, or of birds, where the individuals are very like, must surely have from the first forced the simpler axioms of arithmetic upon us. This would seem at first sight an almost insuperable objection to my position. Happily, however, we are in possession of evidence as to the mental state of primitive men, which throws important light on their knowledge of arithmetic, and shows that even here the facts tend to support Kant's side of the question. It is one of the most obtrusive contrasts between savages and civilised men, that the former have very imperfect notions of numbers. There are many tribes which cannot count beyond 5. Others are puzzled at 8 or at 10.[1] This suggests that their minds are unable to comprehend

[1] For a compendious statement of the evidence see Lubbock's *Origin of Civilisation*, pp. 293-9.

multiplicity. But when travellers talk in this vague way about them, they suddenly surprise us by the additional fact that they seldom lose oxen, even though they keep them in large herds, and in the case of a Kaffir tribe, intelligent observers[1] add the reason—*that they miss one of the faces which they know*, though they are totally unable to count even a portion of the herd. To such a savage each ox or cow is in some sort a personal friend that he expects to see, and being disappointed, he proceeds to search for it. Here then we have the human mind in a condition able to take in a great multiplicity, and yet unable to perform the abstraction of regarding this multiplicity as a series of units. This is precisely the state of things I should have expected in the primitive state of the human mind; and I think that had mathematical instruction been applied to these savages by a man thoroughly acquainted with their language, and well able to explain himself, they would have very soon *recognised* all the simpler axioms, just like the boy in Plato's Meno, who appears in no way to have been gradually arriving at this sort of knowledge, but

[1] Cf. Lichtenstein and Galton, quoted in Lubbock, *op. cit.* They add other curious details about their stupidity in understanding bargains by barter, as they were unable to imagine the objects bartered merely as added or subtracted units.

rather to have evolved it from a simple analysis of his notions of space, as soon as his attention was directed to the subject.[1]

If these inferences from carefully-observed facts be correct, we may doubt the grounds brought forward by the Association School for basing mathematics upon experience, and we may see in the individual learner an analogy to the first discoverer of mathematical demonstration, who gained his point not by gradual observation, and by random groping after special experiences, but by a sudden revelation that he must construct an intuition for his peculiar purpose, and obtain his results by its analysis.[2]

There is yet another difficulty as to the conditions of the Association theory of mathematics which deserves a moment's consideration. It is asserted unanimously by the defenders of this theory that phenomena, in order to be associated inseparably, must be in *immediate* contiguity. I showed in a former work that this was not the case in the supposed inseparable associations between the phenomena of

[1] I therefore see grounds to reject such statements as the following: (Mill's *Logic*, i., p. 262), 'Independently of *a priori* evidence, we should certainly believe it with an intensity of conviction far greater than we accord to any physical truth: and this too at a time of life much earlier than that from which we date almost any part of our acquired knowledge, and much too early for our recollection.'

[2] Cf. above, p. 12.

sight and of touch, by which Mr. Bain and Mr. Mill explain our ideas of space and extension. Mr. Mill in reply[1] says that the inseparable association may be created *between two ideas*, and that the phenomena need not have been actual perceptions. But he has completely omitted to show, what on his own principles it was necessary to show, *how the ideas come to be in immediate contiguity*, when the actual perceptions are not so. Until this is shown, the objection is in no wise removed.

I may also here repeat an additional objection urged in the course of the same discussion, to which Mr. Mill made no reply, and which still appears to me almost fatal to the theory which bases mathematical necessity upon association. Both in his Logic, and in the last edition of his work on Hamilton,[2] the difficulty is raised that experience does not afford us exact lines and circles, and that therefore such a proposition as that concerning a tangent only touching a circle once cannot be proved from empirical evidence. To this Mr. Mill replies that we can obtain it by approximation, in fact from an induction by the method of *concomitant variations*. If the reader will but turn to the description of this kind of induction in Mr. Mill's own *Logic*, he will find it a method of proof by no means obvious, and

[1] *Mill on Hamilton*, p. 321, *note*.

[2] *Logic*, p. 262, *note*; *Exam. of Hamilton*, p. 323, *note*.

subject to sundry uncertainties—in any case a very *mediate* sort of proof, and therefore, I contend, completely incapable of producing in us an association of the perfectly obvious and intensely inseparable description required by the facts of the case. I need hardly remark, by the way, how strange it is to find Mr. Mill here again admitting that the figures about which we assert strict mathematical axioms are not real, but merely *ideas*, nor can he here evade the difficulty by asserting *that they exactly resemble the real phenomena*.[1]

§ 9. It now remains for us to discuss the assertion, that the supposed necessity of mathematical above physical truths is an illusion, and that under supposable circumstances a reversal of them might become equally necessary. I have already considered the value of the assertion that we have a great deal more, and more constant, evidence for mathematical than for physical truths. If my view be correct, there is a great deal more evidence before the mind (in an early stage) that a stone will sink in air or water, than that two right lines cannot enclose a space. The former is a fact which every mind must observe, the latter requires a certain effort of abstraction, which according to our evidence is foreign to savages and to children. But even waiving this point, Mr. Mill has failed to make out his case

[1] Cf. Mill's *Logic*, i., p. 265.

against the Kantians. The reverse of mathematical truths would be conceivable, says he,[1] '*if our minds were the same, and our experience different.*' He must excuse me if I consider this statement hopelessly ambiguous. For if he includes under experience, the mental conditions of experience, as I think he ought to do, then his statement amounts to this: that if the laws of our intuitive faculty were altered, we might conceive what we now cannot conceive—a statement to which most Kantians would agree. But is it defensible to say in this case that our minds are the same?

If on the other hand Mr. Mill merely means, as I think he actually does, the material conditions of experience, then he is bound to show what alteration in these conditions would enable us to conceive such a thing as $2+2=5$. And this he did attempt, in a quotation from a 'barrister,' but as it turned out, very unsuccessfully. The barrister thought that a man who knew nothing but round objects, and was placed on a fixed point between two railway lines, would on inspection believe that parallel straight lines meet when produced. He also thought that in a world where a fifth unit was always created when two were added to two, men would come to believe necessarily that $2+2=5$.[2]

[1] *Mill on Hamilton*, p. 84. This point was suggested to me by Mr. Monck.

[2] Mill, p. 86, *note*.

I showed that in the first case the barrister had assumed that the fixed man *knew the railway lines to be straight*, and that in the second case the writer had confused the units themselves with the act of adding them. However the act of adding two and two might produce five, these particular units would still remain four out of the five, with an additional unit created by the act. But I need not dilate on my refutation, as Mr. Mill in his last Edition declined to defend the barrister, adding that he quoted the passage not as an argument, but as an illustration.

As I have shown just now, this is not a logical reply. Until Mr. Mill is able to show by some reasonable hypothesis that a change of our material experience might produce a reversal of mathematical axioms, he is not entitled to assert what is contrary to all the evidence we possess on the subject. The attempt of the barrister was therefore a distinct argument in favour of the Association Theory, and an argument which has been refuted.

I had attacked the theory from another side, and received from Mr. Mill a curt reply which cannot be left unnoticed. In arguing that the necessity of mathematical truths was derived from consistent experience, he had said:[1] 'had but experience afforded a case of illusion,' in which these truths appeared to be reversed, the counter-association formed might

[1] Pp. 324-5 (in the wording of the earlier Editions).

have been sufficient to defeat the supposed necessity of thought. In other words, had we but the least starting point, to help our imaginations in doing it, we could have conceived the reverse of $2 + 2 = 4$, or of a straight line being the shortest between two points. This statement I naturally enough took up, and showed that in our everyday life there were such things as double vision of an object single to the touch, and a straight stick appearing bent in water. I argued that on Mr. Mill's showing these natural phenomena should have been sufficient to 'defeat the supposed necessity,' and that still they were not so. 'As a protection,' says Mr. Mill, 'against future irrelevancies of this kind, I have inserted in the text the word *persistent* before illusion. Mr. Mahaffy argues as if the illusions in our experience never got corrected by contrary experience, but would permanently deceive us unless over-ridden by an *a priori* conviction.' I never did any such thing; I simply took up Mr. Mill's statement as I found it, and showed it to be inconclusive.[1]

But now my adversary completely changes his ground; he no longer maintains the proposition I above refuted, but this very different one, that if we had a persistent illusion to the contrary, we

[1] I did not mean to maintain that mankind had reason to *believe* that $1 = 2$, or that a bent line was the shortest way between two points; but merely that on Mr. Mill's own showing we had a sufficient amount of experience to enable us to *conceive* it.

could conceive mathematical truths not necessary. What does he mean by a *persistent illusion?* If he means *one which we cannot banish*, which perpetually recurs, even after we know it to be inaccurate, then his remark is in itself reasonable, but does not answer my instances, for they are strictly persistent in this sense. We can produce them at any moment, we can make them last as long as we like. To take a similar instance: we are perfectly able to conceive the earth fixed, and the sun rising and setting literally, even though we have immediate access to the evidence which disproves these conceptions; because they are persistent, although disproved. The illusion and the proof are here respectively stronger and weaker than in the case of double vision in the crooked stick, but yet they differ from that case only in degree. If we can hardly shake off the former illusion, we should surely, on Mr. Mill's principles at least, be able to suppose the truth of the latter. For they are in a reasonable sense persistent illusions.

But as in this sense the reply is totally beside the point, it is probable that Mr. Mill means by *persistent, one which we cannot disprove*, and indeed he reverts in the context to the unfortunate barrister's instance, of the fixed man on the railway lines, and his notion as to parallel lines meeting. In this sense, the reader will at once see that the whole point of Mr. Mill's remark has vanished. He now

states nothing more than this, that if the constitution of nature were different, we might have different beliefs. This brings us round to the old standpoint which we have already disposed of, where Mr. Mill speaks of our minds remaining the same and our experience being different. Having discovered our old friend under his new disguise, I may refer the reader to the earlier part of this discussion,[1] and conclude by observing that my objection, instead of being irrelevant, has forced my adversary from a new and advanced position back upon the old ground, which he himself confesses has been under heavier fire than any other part of his book.

If then the philosophers who derive our notions of Space and Extension from mere experience are duly questioned, we find them assuming before proof a new meaning for extension, then depreciating the plain facts of vision, and exaggerating those of touch in order to sustain this meaning. We find them setting up imaginary and exceptional cases, as if they were universal and obvious, and basing indissoluble associations on these cases. Until these defects are removed, we may still adhere with confidence to the theory of Kant.

[1] Above, p. 156.

PART II.

THE DEDUCTION AND SCHEMATISM OF THE CATEGORIES.

ADDITIONAL PREFACE

(TO PART II.)

LIKE most Authors, I find myself unable to publish at the rate I originally proposed. As, however, additional parts of this work had been promised, I thought it better to publish even this short instalment, as an earnest of my intentions. The first volume will only be completed with the appearance of a third part, which I hope to publish when the turmoil and fever of politics allow us some rest.

The great importance and difficulty of the subjects treated in these chapters make its shortness less objectionable. For I have here taken up, and honestly grappled with, the great crux of Kant's system, his Deduction of the Categories. Many of my intelligent critics said fairly enough that the former parts of the book were not sufficient to test my

pretensions as a Commentator. They said that many previous critics had grasped the Aesthetic, but that the Analytic would prove the real test of any book professing to explain and simplify Kant. I have met this challenge by the present publication, in which I claim to have given a clear and consistent account of the Deduction and Schematism of the Categories, and to have left unexplained not more than two or three sentences, with an open confession of my perplexity; sentences, too, which do not in the least affect the general argument.

But though it claims to be clear and consistent, this Commentary is not, and cannot be, either easy or short. It is not easy, because the subject is not easy, and deals with notions exceedingly abstract, and only familiar to those who have made mental science a subject of special study. To such this book will be clear and readable enough, while those impatient young gentlemen, who skim through philosophical systems for examination or reviewing purposes, will find it tedious and perhaps useless. It is not short, because Kant's book, if worth reading at all, is worth reading and knowing accurately, and no pains are misplaced, if they result in a full

and comprehensive grasp of the greatest metaphysical system the world has yet seen. I have therefore compared editions, and noted objections very deliberately, endeavouring to shirk no difficulty, and expressing a distinct opinion, whether right or wrong, on every disputed point.

Some errors of translation, which were pointed out by critics, I have corrected in the next page.

CORRIGENDA IN VOL. III.

THE following corrections are partly due to MR. SIDGWICK'S review of Vol. III., No. 56, in the Academy :—

PAGE 23, note, *for* from the Critick, *read* into the 2nd Ed. of the Critick.
—— 27, last line, *read* the corresponding intuition contains.
—— 39, line 23, *the sense is* not escaping suspicion because true.
—— 85, foot, *for* so far *read* so far as.
—— 115, line 6 sqq., *read* 'Metaphysic, that is the occupation of Reason with itself, and the supposed knowledge of objects arising immediately from this incubation of its own concepts, without requiring, or indeed being able to reach that knowledge through, experience.'
—— 129, *perhaps* regularity *should be* legitimacy.
—— 150, line 4, *for* intuition *read* intention [end].
—— 155, line 1, *insert* not *after* does.
—— 198, line 4, *for* unities *read* units.
—— 199, line 30, *read* means of the aforesaid predicates of a triangle.
—— 201, line 16, *read* so far as they can come together in our experience.
—— 212, line 15, *for* a *read* one.

THE following are due to a manuscript review by PROFESSOR SELSS, to be shortly published in *Hermathena* :—

PAGE 27, line 12, *for* come into use *read* been exercised.
—— 40, line 12, *omit* this.
—— 155, line 15, *for* our intercourse *read* of evasion.
—— 200, line 30, *for* It *read* There.
—— 220, line 16, *read* The Categories are here so peculiarly circumstanced.
—— 235, line 10, *for* their *read* its.
—— 241, line 7, *for* is based on *read* aims at.

CHAPTER V.

INTRODUCTION TO THE TRANSCENDENTAL ANALYTIC.

* BEFORE entering on a new division of Kant's Critick, a few general remarks will not be out of place. The Analytic affords the reader a far longer and more weary task than the Aesthetic. The latter is perhaps too compressed, owing (I suppose) to Kant's earlier discussions having to a great extent forestalled it. At all events, there is hardly any repetition, or enforcing of the same truth in slightly varied language, when Kant discusses the basis of Mathematic. The Analytic, on the contrary, just thought out by the great philosopher, is born, if I may so say, with the pangs of labour. We see Kant wrestling with his utterance to put it clearly before the world. As might have been expected, such a discussion defeated its own end. Repetitions and explanations weary and confuse us, when they are carried beyond reasonable limits. And so Kant labours again and again at the Deduction or justification of his Categories, in the first Edition, then in the Prolegomena, then in his second Edition, and yet his first exposition, though not the most complete, is by far

the clearest he has given. The difficulties, however, of any of them seem quite sufficient for most English philosophers. A few have made bold to discuss and comment on the Aesthetic, or its doctrines. But as soon as we approach the Analytic, we find little to help us, but either servile repetition or silence. In truth, the duty of a commentator on this part of Kant's Critick is not merely to paraphrase, or to expand. If he would have his author receive full justice, he must, above all things, abbreviate. He must bring together Kant's varied reassertions of the same fact, and reproduce them in a single, but complete form. This will be the plan of the Commentary now offered on the Deduction of the Categories, and therefore the practice of adhering to the paragraphs of the original will be sometimes advisedly abandoned.

The division on which we now enter is the second part of the Transcendental Stoicheiology, viz., *transcendental Logic.* Kant's Introduction is naturally devoted to the accurate definition of this expression, which is not in itself obvious.

I. *Of Logic Generally.*—'Our knowledge springs from two sources within us. The first is the faculty of receiving impressions (*sensibility*), the second, that of knowing objects by means of these impressions—or the faculty of producing concepts (*understanding*). By means of the former an object is given to us; by the latter the object is *thought*, in relation to this

given representation, as a mere determination of our minds.' The distinction of *pure* (*a priori*) and *empirical* (*a posteriori*), already applied[1] to intuitions, holds good of concepts also. As the pure intuition contains the mere form, in which something is intuited, so the pure concept contains the mere form in which we think an object generally. This receptivity of impressions and this spontaneity of our understanding are both essential to knowledge. Though perfectly distinct in their nature, they combine in their action, and there is no ground for preferring one to the other. No object can be given without sensibility, no object can be thought without understanding. Taken by themselves, concepts without intuitions are *vacua*, intuitions without concepts *cæca*. 'It is, therefore, as necessary to make our concepts sensuous, as to make our intuitions understandible, or bring them under concepts. For the understanding can intuite nothing, and the senses can think nothing, they cannot exchange duties; we can only have knowledge, or cognition, by combining them. *But this affords no reason for confusing their respective contributions*, which we should rather carefully distinguish and separate. We have done so under the titles *Aesthetic* and *Logic*.'

* It has been a common objection to Kant, urged among others by Mr. Lewes and by Edmund Montgomery, that Kant separated faculties which are

[1] Above, pp. 35-6.

never separate in nature. The previous paragraph shows, I think, that they have not done justice to Kant. He knew, as well as they, that sensibility and understanding cannot be severed in use. He even shows, what he claims as an original psychological observation, that, in our ordinary perceptions the understanding is necessary, acting through the imagination.[1] But if scientific analysis means anything, it means the separate consideration of the fused elements given in our ordinary experience. I cannot forbear to add, that whatever mistakes in theory Kant may have made, his psychological observation was far too subtile to allow any obvious fact to escape his notice; any objection founded on such grounds can generally be straightway refuted from his own express statements.

We may approach Logic with two different objects; either to ascertain the rules of our understanding, which are absolutely necessary for using it in any way whatever, or to ascertain those which guide its use when applied to a particular class of objects. The latter is called the *organon* (or logic) of this or that science. In the schools it is generally supposed to be a preliminary to the study of a science; in reality it is the very last question settled in each science. We must know the objects very well, before we can state the rules which make a

[1] Cf. Vol. iii. p. 211, note.

science of them possible. Thus, for example, while mathematical studies are in a very advanced condition, what is called the *Logic* of Mathematic is still in obscurity. The first notions necessary for a sound method in Geometry, in the Differential Calculus, or in Mechanics, still divide the minds of competent inquirers.

Turning back then to the former—general Logic, which makes no distinction as to objects—even this Logic may be applied Logic, as well as pure. For *pure general* Logic must abstract from all empirical conditions, not only external but internal. It must exclude the influences of the senses, the play of imagination, the laws of memory, and all those sources of particular prejudices, which only affect us in particular cases. It merely contains a *canon of the understanding and reason*, as regards the formal elements in their use. So far the matter is plain enough. But how can a general Logic be *applied*, for this seems to imply particular objects? There is one set of conditions, which, though empirical, yet apply to all mankind. These are the psychological conditions that may hinder or advance reasoning. Logic can be general, and yet include a consideration of these, viz., attention and its consequences, the causes of error, the conditions of doubt, of conviction, and such like. For these, though individually contingent, are, as a whole, necessary for any concrete use of the understanding. This is the only

sense in which Kant admits the term applied Logic, as a *kathartikon*, or purifier, of common sense. It bears the same relation to pure general Logic that moral teaching, or practical Ethic bears to pure Morals, a science which contains nothing but the necessary moral laws of a free will, while practical Ethic discusses the difficulties and hindrances with which men must contend in carrying out these laws.

It is necessary for logicians to sever most carefully the pure from the applied (though still general) side of Logic. The former alone is strict science. They should keep before them two rules; (1), Pure Logic abstracts from all content whatever in our knowledge; (2), as being pure it possesses no empirical principles, more especially it must borrow nothing from empirical Psychology. In a demonstrative science everything must be certain *a priori*.

II. *Of Transcendental Logic.*—We spoke above of the Logic of a particular use of the understanding. When this particular use is determined by a special class of objects (or special science), its Logic becomes the *organon* of that science. But the particular use may be determined not by the *object*, but by the special *procedure* of the understanding. As there are not only empirical but pure intuitions, so there may be a similar distinction between empirical and pure thinking. We might then have a Logic which did not abstract from all the content or matter of knowledge. For though the analysis of the pure think-

ing of objects must (1) exclude all cognitions of empirical content, in order to be general, it may (2) discuss the origin of our knowledge, when pure—a subject quite beyond the range of general pure Logic, which must take the facts as it finds them, and in no way concerns itself about their origin, but only about the way in which the understanding connects them.

Kant here inserts a remark of great importance. The term *transcendental* is not applied in the Critick to every *a priori* cognition, but only to such as inform us, that certain representations (intuitions or concepts) are applied altogether *a priori*, how they are so applied, or that they are possible *a priori*, and how so. For example, space or any of its geometrical figures is no transcendental representation, but the knowledge that it is *a priori*, and the possibility of its applying, though *a priori*, to the objects of the senses, this may be called *transcendental*. The contrast of empirical and transcendental concerns a distinction *in our cognitions, and not their relations to their objects.*

Let us assume that there are concepts referring *a priori* to objects, as we found intuitions so doing. These concepts being mere acts of pure thinking, neither empirical nor aesthetical in origin, suggest to us the notion of a peculiar science, the science of that cognition by which we think objects com pletely *a priori*. Such a science determining the

origin, sphere, and objective validity of such cognitions, may be called *transcendental Logic*, being concerned with the laws of understanding and reason only, and with these only so far as they apply to objects *a priori*.

III. *The Division of General Logic into Analytic and Dialectic.*—The celebrated old question by which men thought either to puzzle logicians, or make them confess their ignorance, was this: *What is truth?* The definition of the term—the agreement of cognition with its object—is here pre-supposed; what we demand is the universal and safe criterion of the truth of each single cognition. *Prudens interrogatio dimidium scientiae.* A silly question may not only disgrace the interrogator, but mislead the incautious respondent into silly answers, and so (according to an old proverb) while one milks the he-goat, the other holds the sieve for him.

If truth means the agreement of a cognition with its object, it is implied that this object is distinguished from all others, for the cognition, whatever other agreements it may contain, is only true if it correspond to its particular object. Now an universal criterion of truth must be valid for all cognitions, without distinguishing their objects. As therefore such a criterion must abstract from all content of knowledge, and is at the same time to concern this very content, to demand it is absurd and self-contradictory. An universal, as well as sufficient

mark of such truth cannot be found. As the content is called the matter of knowledge, our result may be stated thus: 'No universal criterion of the truth of our cognition as to its *matter* can be required, because such a criterion is self-contradictory.'[1]

As regards mere *form*, the science of Logic, in expounding the universal and necessary rules of the understanding, must evidently present us in these rules criteria of truth. Whatever contradicts them must be false, or the understanding would be in conflict with its own general laws. But these criteria are insufficient, as they only affect the form of truth. For a cognition might fully satisfy the logical form, that is, not be self-contradictory, and yet contradict the object. The mere logical condition of truth, or agreement of a cognition with the universal and formal laws of understanding and reason, is then the *sine qua non*, or negative condition of all truth: but logic can do no more, and is powerless to detect the errors which affect not form, but content.

General logic analyses all the formal operations of understanding and reason, and determines the principles of all logical estimating of our knowledge. 'This part then may be called *Analytic*, and is the negative touchstone of truth, whose rules must be thoroughly satisfied before we examine our know-

[1] Cf. Mansel, *Proleg. Logica*, p. 189-90.

ledge as to matter, to see whether they contain positive truth as regards the object.'[1] But as the mere form of knowledge, however perfect, is quite insufficient to guarantee the material (objective) truth of knowledge, no man can venture to assert from Logic anything about objects, without obtaining farther information. He may then attempt to use or combine his materials according to logical laws, or better still, merely to test them in this way. But the act of giving all our cognitions the form of understanding, however indigent we may be as regards their matter, is so seductive, that general logic, which is a mere *canon* for testing, has been used (and accordingly abused) as an *organon* for producing, or apparently producing, objective assertions. General logic, when it claims to be an organon, is called *Dialectic.*

However the ancients may have varied in their acceptation of this term, they practically used it as the *Logic of illusion.* They applied the accurate method of logic sophistically to give their ignorance, or even their deliberate fallacies the appearance of truth. But we may lay it to heart as a safe and useful caution: that universal Logic, *considered as an organon*, is always dialectical, or a logic of il-

[1] I am persuaded that Mr. Meiklejohn has seen the true sense of this sentence, in which the pronouns are very confused. I have followed his version, which is not the obvious one.

lusion. The pretence, therefore, of using it as an instrument (organon) to extend, even apparently, our knowledge, turns out mere idle talk. Such a proceeding is totally unworthy of philosophy. Dialectic has therefore been included in Logic as the *Critick of dialectical illusion*, and as such we shall here use it.

IV. *The Division of Transcendental Logic into Transcendental Analytic and Transcendental Dialectic.* In transcendental Logic we isolate the understanding (as we isolated the sensibility in the transcendental Aesthetic) and select from our knowledge that part of thinking which has its origin in the understanding. But we cannot use this pure cognition except objects be given us in intuition—a necessary condition, without which cognition is void. The part of transcendental Logic, then, which expounds the elements of pure rational cognition, and the principles without which nothing can be thought, is called Transcendental Analytic, and is a Logic of Truth. But though experience alone provides us with the matter to which these pure concepts of the understanding can be applied, there is the strongest temptation to use them by themselves, and beyond the limits of experience. Hence the understanding is in danger of making a material use of its formal principles, and of judging about objects which are not, and perhaps even cannot be, given. Thus a mere canon for controlling the

empirical use of the understanding, is misapplied into an *organon* of universal and unlimited use, and the understanding ventures without farther aid to assert and decide *synthetically* about objects in general. The second part of our transcendental Logic must therefore criticise this dialectical illusion and is called transcendental Dialectic—not in the sense of the art of producing such illusion, but—as the Critick of the Understanding and Reason in their hyperphysical employments, which exposes the illusion of their false pretensions, and reduces their claim of discovering and extending knowledge by purely transcendental principles to a mere protecting the understanding from sophistical illusions.

CHAPTER VI.

TRANSCENDENTAL LOGIC. PART I.

The Transcendental Analytic.—This Analytic is the resolution of our whole *a priori* cognition into its component elements. It requires the following conditions:—(1) the concepts must be pure; (2) they must belong, not to sensibility, but to thought and understanding; (3) they must be elementary concepts, well distinguished from those deduced from them, or composite; (4) the list must be complete. This last quality cannot be obtained by a mere aggregate of observations. We must start from a notion of *a priori* cognition *as a whole*, and subdivide it into the concepts belonging to it, which are then *connected systematically*. The pure understanding, apart from all that is empirical, and even from all sensibility, is an independent self-contained unity, not to be enlarged by additions from without. Hence the sum total of its cognition forms a system falling under one idea, and the completeness and perfect articulation of this system will be a touchstone to test the claims of all cognitions that belong to it. The Analytic is divided, on the model

of ordinary Logic, into two books, of which the first contains the *concepts*, the second the fundamental *judgments* [or Principles, *Grundsätze*] of the pure understanding.

Transcendental Analytic, Book I.

The Analytic of Concepts.—Kant does not mean by this term the ordinary analysis of concepts, in order to make them clear and distinct, but rather the analysis of the faculty of understanding itself, a task seldom attempted. For we shall endeavour to ascertain the possibility of *a priori* concepts by seeking them in the understanding alone as their place of birth, and analysing its pure use; this is the proper business of transcendental philosophy. These pure concepts lie prepared in their forms and dispositions in the human understanding, until they develop by occasion of experience, and may then be found in the same understanding, freed of the empirical conditions that attach to them.

Analytic of Concepts [Chapter I.].

Of the Clue to discover all pure Concepts of the Understanding.—If we bring any of our cognitive faculties into action, in due time sundry notions present themselves, which make this faculty known to us, and which can be collected more or less completely, according to the number or acuteness of our obser-

vations. But we can never make sure that our task is completed; and moreover the concepts attained in this accidental way come in no order or systematic unity, nor can they attain these qualities by being ranked according to their greater or less comprehension, however methodical this arrangement may be.

Transcendental philosophy has the advantage, and is also under the obligation, of seeking its concepts on a fixed principle, as they spring pure and unmixed from the understanding as an absolute unity, and must therefore be connected according to some one notion. This connexion must afford a rule, according to which every pure concept may be ranked, and the completeness of the list fully determined *a priori*.

* It appears manifest from these introductory remarks that the common charge made against Kant, of having picked up his Categories empirically, and without proper reduction, can only be true in one sense. He may have blundered in the carrying out of his idea—a question which cannot be discussed as yet—but he certainly did not intend to proceed empirically, nay, he even professedly repudiated the error attributed to him by his critics. His mistake then, if he really made it, was not a mistake in principle, but a mistake in psychological insight—an inability to see how several of his separate heads might really be reduced to one. I cannot but repeat

that such a fault is not likely to occur in a great master thinker, and that if his starting point be right, as his critics must confess (according to their own statements, which coincide with his), he is less likely than they to have committed an error from want of acuteness. But of this anon.

*We now come to the first really difficult discussion in the Critick. The Aesthetic, however the commentators may have blundered in details, has been, as a whole, comprehended even by English philosophers, and has had its full and fair effect on philosophical thought, ever since Kant's days. But with the exception of Hegel, whose system implies a profound knowledge of Kant's transcendental Logic, it would be difficult to find any philosopher who had fully utilised Kant's teaching in this part of his work. The later commentaries are indeed progressing towards a fuller knowledge. That of Kuno Fischer, for example, following the lead of Schopenhauer, is tolerably clear and precise on the difficult Deduction of the Categories, so far as it was expounded in the first Edition, though he shirks all comparison with the changes in the later Editions. But even Kuno Fischer settles the hard question before us, the passage from the ordinary table of logical judgments to that of the Categories, in a single short paragraph, omitting all mention of Kant's close analysis of the *function* of thought, and the *functions of unity* produced among phenomena of the understanding.

We can here obtain no help but from the author himself, and must seek from a careful analysis of his argument and from the short explanations in his Prolegomena to develop his meaning.

THE TRANSCENDENTAL CLUE TO DISCOVER ALL THE PURE CONCEPTS OF THE UNDERSTANDING. [SECTION I.]

Of the logical Use of the Understanding generally.—We know already that our understanding has no faculty of intuition. As there is no other way of cognising except through concepts, the understanding must cognise through them, but discursively, as opposed to intuitive cognition. All intuitions are affections of sense, all concepts functions of the understanding. By Function Kant means 'the unity of action in ranging various representations under a higher one.' So the understanding is *spontaneous* in forming its concepts, not receptive of impressions, like the sensibility. What we here desire to ascertain is the exact number of the primitive functions of the understanding, that is, of its various *a priori* unities of action, or ways of ordering its representation under higher notions. How does Kant set about to do this? In the first place, suppose we have the concept ready, how can we make use of it? It is confessed, that no concept refers directly to objects. Intuitions alone are immediate representations of objects, for we still hold, in spite of Sir Wm.

Hamilton and other Scotchmen, that external objects (in the common sense) are not presented to the mind, but represented by intuitions, or modifications of our sensibility. Therefore we regard both intuitions and concepts as representations, but the former as immediate, the latter as mediate; and when the concept refers to objects through the intuition, it produces in us the representation of an (immediate) representation. But as we cannot use concepts to intuite objects through them, there is no use left for them except that we should *judge* objects by means of them. For in a judgment we can bring an intuition (as subject) under a concept (as predicate), and so we indirectly cognise an object through our concept. We may repeat the process, making a lesser concept the subject, and bringing it under a greater, as predicate. For example, in the judgment *all bodies are divisible*, both terms are concepts, but we have previously brought many intuitions under the former, by judging: *this is a body*, and *that is a body*. But then we bring the concept *body* under a higher concept of *divisibility*, which applies to other concepts also. Judging, therefore, consists in bringing many intuitions, or many lower concepts, under one higher concept, which embraces the many. Hence judgments are called by Kant *functions of unity*, that is to say, functions producing unity, in our cognitions. But, if concepts can only be used in judgments, then the understanding has no action apart

from judging; it may, in fact, be called *the faculty of judging.* For what is *thinking* (as opposed to intuition) but cognising through concepts? Whenever we do this, we regard the concept as the predicate of a judgment, in which we assert that another representation comes under it. Every concept, therefore, as it must contain many representations, so it must be also regarded as the predicate of many possible judgments. If therefore all the acts of the understanding can be classed as judgments, and if concepts can only be used in judgments, it is obvious that an analysis of the various kinds of judgments will be the clue to discover the various kinds of concepts. In Kant's language, the functions of unity in judgments, if they can be reduced to fixed classes, will discover to us all the functions of the understanding.

* I think I have left no difficulty unresolved in the above paragraph, except the definition of the word *Function,* which Kant says is 'The unity of the act (die Einheit der Handlung) of ranging diverse representations under a common one.' The reader must not confuse this with what Kant calls *functions of unity*, which are evidently functions producing unity, as is clear from his exposition of judgments, which he describes in these words. I had once thought of suggesting a slight emendation (der Einheit die Handlung), so that the passage would run thus: 'I mean by function of unity, the act of

ranging, &c.' This would evade the difficulty, and give a true and easy sense. But the recurrence of the words, 'the unity of the act of combining, &c.,' in at least three other places in the Critick, is decisive against this solution of the difficulty.

These are the passages (p. 85, Ed. Bohn): 'I cannot know a line, or anything else in space, without *drawing it*, and so producing a certain combination of various elements synthetically, so that the *unity of this act* is at the same time the unity of consciousness (in the notion of a line), and so alone can an object in space be cognised.' He accordingly says, in a very decisive passage (p. 80, Ed. Bohn), when talking of synthesis, as a spontaneous combination of variety by the understanding: 'You here perceive easily, that this action is originally one [*einig*] and equally valid for all combination.'[1]

* The third is a passage expounding the very same subject as we are now treating, and is a sort of appendix to the Aesthetic thrust into the Deduction of the Categories in the Second Edition.[2] He is speaking of the action of the understanding on the materials supplied by intuition, and says, 'the

[1] This sentence is completely ruined in Mr. Meiklejohn's translation, who strangely substitutes the following: 'The reader will easily enough perceive that the possibility of the conjunction must be grounded in the very nature of this act,' &c. ! !

[2] Latter part of §§ 24 and 25, or §§ 20 and 21, Ed. Bohn.

synthesis [of the understanding], considered separately, is nothing but the unity of the [act or] action, of which, as such, the understanding is conscious, even without sensibility, but by which it determines even the sensibility,' &c. He proceeds in the next paragraph to illustrate his meaning by the very example adduced in the previous passage, adding several other similar ones.

It will thus appear that Kant declares no object can be considered by the mind as such, till its parts or qualities have been brought together by a spontaneous act of the mind, and that though the various parts must be gathered successively, there is an unity in this act in every case, and this is really the unity attributed to the object. A slight variation in expression will be found in the corresponding passage of the First Edition to that last quoted.[1] He there speaks of the *identity* of the function, and even of the *identity* of the act, which subjects intuited impressions to an *a priori* unity. There is good reason to speak of the identity of the function, for it is in every case a synthesis of variety; but I think Kant wisely changed his expression in the Second Edition, and spoke of the unity of the act, for though the various Categories are indeed phases of the same identical function of synthesis, yet the acts of unifying multiplicity in each can hardly be called identi-

[1] Cf. Vol. iii., p. 201.

cal. And so, in the Second Edition, in the close of the passage we have been expounding, he says that an analysis of judgments will disclose to us the Functions of the understanding; that is to say, the phases of that higher function, which is identical in all consciousness, and consists simply in making all representations *our own*, or modifications of an identical self. The action of the understanding in the case of each Category is identical, for each Category is *one way* of producing unity in our representations. The action of the understanding in all the Categories together is *one kind* of action, and so far one, though it may vary in the detail of each Category.

The Clue to discover all Pure Concepts of the Understanding [Section II.]

§ 9.[1] *Of the Logical Function of the Understanding in Judgments.*—If we abstract from all content,

[1] This numbering of paragraphs continued (after a long suspension), from p. 73 above, is used by Kant down to the end of the Deduction, merely for the convenience of reference, and has nothing to say to the divisions and subdivisions of chapters and sections in which he luxuriates. I have preserved it for the same reason. Mr. Meiklejohn has unwarrantably changed it, and so confused some of Kant's references. He has inserted §§ 1-4 in the earlier part of the Analytic, where Kant does not use them, and so finds himself at § 5, where Kant resumes with § 9. The reader who refers to his translation will note this, as I shall refer to Kant's paragraphing, even when I give the pages according to the English translation.

and apply ourselves to the mere form of judgments, we find that the function of thought in them can be brought under four heads, each of which contains three phases [Momente]. Here is the table:

1. Quantity of Judgments.	2. Quality.
Universal.	Affirmative.
Particular.	Negative.
Singular.	Infinite.
3. Relation.	**4. Modality.**
Categorical.	Problematical.
Hypothetical.	Assertative.
Disjunctive.	Apodictical.

Some remarks on this table are necessary.

1. Logicians say justly, that singular judgments can be treated as universals in syllogisms, for the whole subject is affirmed of the predicate. But in their quantity, as cognitions, they differ as unity does from infinity, and are therefore materially distinct. Hence the *judicium singulare*, as a mere cognition, compared in quantity with other cognitions, must have a separate place in a complete table of the phases of thinking.

2. Similarly in transcendental Logic, infinite judgments must be distinguished from affirmative, which is contrary to the practice of general Logic. The latter abstracts wholly from the content of the

predicate, and merely examines whether it is affirmed or denied of the subject. But the former is concerned about the value of this affirmation by means of a negative predicate, and what our cognition can gain by it. If I say *the soul is not mortal*, this judgment, regarded as negative, at least guards against an error. Regarded as affirmative (not-mortal), it divides all the universe into mortal and immortal things, and excluding the mortal, includes the soul in the infinite number of non-mortal things. Many other parts might in like manner be abstracted, without in the least increasing or determining our notion of the soul. These infinite judgments then, as regards logical comprehension, are really limitative of the general content of a cognition, and must not be passed over in our transcendental table, as this function of the understanding may be important in the field of pure *a priori* cognition.

3. All the relations of thinking in judgments are either (α) that of predicate to subject, (β) that of antecedent to consequent, (γ) that of a divided cognition to its combined members. In the first kind two concepts, in the second two judgments, in the third several judgments are considered in relation to each other. This is obvious in the first and second cases. The relation of the various parts in a disjunctive judgment is not only one of opposition, in that they are mutually exclusive, but also of community, in that they jointly make up the

sphere of the cognition concerned. Each then completes the rest. For example, 'the world exists either through blind chance, or through internal necessity, or through an external cause.' Each of these judgments embraces a portion of the sphere of our possible knowledge about the world's existence: taken together they express the whole of this sphere. Remove one and you posit the rest, and *vice versa*. There is then this community in these judgments, that though mutually exclusive, they make up, when combined, the whole content of one given cognition.

4. The Modality of judgments is a peculiar function, in that it adds nothing to their content, but only affects the value of the copula in relation to our thinking. Problematical judgments are those in which the affirmation or negation is only considered *possible*, or optional. In assertative, it is considered *real*, or true; in apodictical, *necessary*. Thus in a hypothetical judgment, both antecedent and consequent are optional, and only the consequence is assertative. Whether you assume them true or not, the consequence is real. So the various judgments contained in a disjunctive judgment are problematical, and may be merely assumed for a moment, to lead the mind towards the true solution. The assertative judgment asserts logical reality or truth, as for example, in a hypothetical syllogism the antecedent which has occurred prob-

lematically in the major premiss, is repeated assertatively in the minor, and shows that the proposition is no longer optional, but connected with our understanding according to its laws. The apodictical judgment considers the assertion as determined by these laws of the understanding, and, therefore as making its assertion *a priori*, or necessarily. As these various stages are reached gradually, the mind proceeding from an assertion first to its truth, and then to its necessity, the three functions of modality may be counted as distinct phases of thought.

The Clue to discover all the Pure Concepts of the Understanding [Section III.].

§ 10. *On the Pure Concepts of the Understanding, or Categories.*—*We now come to the second serious difficulty in the Analytic, which has not yet been adequately explained. Even Kuno Fischer's professed Commentary quietly ignores all the argument in this paragraph, and contents itself with the stating the result[1]. As Kant's own exposition has not penetrated the minds of his readers, it seems advisable

[1] Cf. my translation, pp. 71, sqq. I had there endeavoured to supply the omission in a note, which I found too brief and compressed, when I came to lecture on the subject to younger students. I therefore now give a fuller and I hope a more satisfactory explanation.

to abandon paraphrasing, and to state the argument in an independent form.

* We saw above (p. 178) that the function of the understanding was simply to gather up objects, or lesser concepts, under higher notions—in fact to produce unity in our knowledge; and we saw that this was done by acts of judging, which compared the lesser notion with the greater, and either reduced it under this notion, or referred it to some notion, to be otherwise determined. But an analysis of judgments was a task long since accomplished by logicians, and from this analysis it appears that our judgments, or acts of producing unity among our representations, must assume, and can only assume, one of the forms laid down in the logical table of judgments. This fact points to an original feature in the constitution of our understanding, and indicates that our power of combining variety is confined to these forms, or to something corresponding to these forms.

* Now let us consider that all the subjects of our earliest judgments are not concepts, but intuitions of objects. We cannot in fact have a general concept till we have formed it by means of a number of such judgments. Nevertheless, from the very outset our judgments must have taken the various forms laid down in the table of judgments, that is to say, we must have considered the objects about which we judged as one, as many, or as both; as

substances, as causes, &c., &c. How, I ask, did we come to range our intuitions under such classes? For we received through our sensibility nothing but various impressions or representations, which our sense placed in space and in time, but which were *in sense* not otherwise combined, and were nothing but a confused congeries of single impressions. How, in fact, have we come to consider them as separate objects at all, and judge about them as single, as plural, as substances, or as causes?

* Kant says there is from the very beginning another faculty besides sense at work, unconsciously indeed and darkly working, but occupied in binding up the various data of sense into groups or unities. This faculty is the imagination, and its function he calls *synthesis*. We can never obtain a notion of any combined set of impressions, or of such a complex as distinct from surrounding impressions, without the action of this faculty. It is not, however, left to combine impressions at random, upon no principle, for being closely allied with the understanding, the spontaneous action of the understanding supplies it with its rules, and so it proceeds to combine and form objects according to the laws prescribed by the understanding.

But we saw above that the laws of combination under which the understanding acts are expressed by the forms of the various judgments. Hence these forms are a clue to the laws which the under-

standing prescribes to the imagination in its synthesis of representations, in order to form objects. It is the same action which produces unity in the judgment, and unity in the intuition—taking unity in a large sense, to signify systematic connexion among the parts. Hence the various phases of this synthesis of intuitions correspond to the various forms of judgment, and both are called by Kant *Categories.* They must of course be *general* phases, general ways of combining—in Kant's words, *synthesis, represented generally.*[1] They must affect the *pure* synthesis of the imagination, and must involve no data save those given by the transcendental Aesthetic, viz., multiplicity generally, presented in space and time.

* Let me endeavour to make the whole matter plain by an illustration. When you sit in a room, the senses supply you with a number of impressions all separate in space or in time, various patches of colour, various sensations of texture, of sunlight, of cold, of odours, and many others. The sensibility may give these partly simultaneously, partly in succession, but no more than these. How does the mind

[1] So general, as he observes of the science of nature in his *Prolegomena* (vol. iii., p. 65), as to reduce nature generally, including both the object of the external or that of the internal sense (the object both of physic and of psychology) to universal laws.

come to sever them all into distinct groups, and call them separate objects, or the qualities of separate objects? Surely in this way, that the imagination, by reproducing some of the sensations just past, binds them up with those actually present, and so produces a certain grouping of representations. This grouping, however, is not carried on at random, but according to laws imposed on the imagination by the understanding. What are these laws? They are not special laws binding up any particular kind of representations, but general laws, applicable to any sort of representation, and they are not difficult to indicate.[1] We see a single chair close to us, we see several others through the room, we speak

[1] It will be observed that Kant's theory of our empirical knowledge is just as much a 'psychological theory' as Mr. Mill's, inasmuch as he holds the external world, as we know it, to be made up of our perceptions and their relations, and of these only. But Kant differs from the Association School in attributing the notions of Externality, and also of Permanence and Substantiality, to original laws of our minds, and not to the gradual teaching of associations. This controversy has been stated generally above (pp. 93, 97-8), and it seems hardly necessary to devote a separate chapter to the additional objections suggested by Mr. Mill's official chapter on the subject, (*Exam. of Hamilton*, chap. xi.) Mr. O'Hanlon's difficulties, even as they appear in Mr. Mill's short extracts, are not answered, and there are many others in reserve. For instance, Mr. Mill's object (pp. 222-3) consists of an indefinitely large group of sensations, of which a few only are present, but suggest all the rest by inseparable association. This

of the whole furniture of the room. This means that the understanding has directed our imagination to consider a certain quantity of sensations as making up a single chair, and has therefore imposed the Category of Unity on these sensations. When we speak of several chairs, then a larger group of sensations, in which certain features recur, has been arranged by the imagination as a plurality of units—here is the Category of Plurality. The whole mass of representations produced by the objects around us (as we call them) is again considered as a plurality of units, making up one great unity—this is the Category of Totality in application. It appears, then, that we could not obtain our ordinary

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implies such a set of distinct inseparable associations of each of the present sensations with each of the remainder, that our completed notions of substances should be very slowly obtained. He next (p. 224) advances the statement that the constant antecedences and consequences which we observe in Nature, and which form the most important part of our knowledge of external things—that 'almost all of these do not obtain between [present] sensations, but between the [absent] permanent possibilities of sensation'! I confess I have not yet thought myself into the attitude of Mr. Mill's school, so as to comprehend how a series of all-important indissoluble associations can arise between a set of absent possibilities, which are only suggested by certain present sensations not so associated. Here is a third difficulty. He thinks (p. 230) that with every sensation we have, we associate the idea of something different from it. This, of course, must be some different sensation. He argues that, in like manner, we come to asso-

knowledge of objects, if the understanding did not order our receptive faculties to group the representations they receive, as to quantity, into units, pluralities, and totalities. In like manner, the sensations which affect us are classed as Real, such as those of light and heat in the room, as the Negation of real, such as darkness and cold, or as Limitations of the real, as when we feel transitions from the one to the other. We must also consider our groups of representations in relation to each other, and so we judge that the hardness, colour, and texture of the chair are Accidents of a Substance, that the heat of the room is the Effect of a Cause (the fire), and that the various articles of furniture in the room are not re-

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ciate with the sum total of our sensations this notion of something different from it. This inference appears to violate all the conditions of inseparable association. We seldom think of this sum total at all, and when we do, it comprises all the differing sensations; so that, of all our ideas, it is that which does not imply any idea of difference, except that of individual sensations, as opposed to a whole of sensations. For how could an association between two differing sensations suggest an association between a sensation and a thing not a sensation? He goes on to state (p. 230) that this something, regarded as different (I suppose in kind) from a sensation, or *a possibility of sensation*, is identified with *permanent possibilities of sensation*, because these latter are extremely unlike actual sensations [only]. Are they unlike possibilities of sensation also? Surely this part of Mr. Mill's argument cannot appear conclusive to any careful reader.

lated in either of these ways, but are substances simultaneously existing, and determining each other in place, as, for example, we indicate the place of a stool by its proximity to a sofa or a chair. Finally, we consider certain sensations *possible*, as when we see the end of the poker blueish, or brick colour, and judge that it will possibly burn us if we touch it. The judgment becomes *real*, if we make the experiment, and burn our fingers. A person sitting in the room before we came in, who had seen it thrust between the bars of the grate, and removed just when it was becoming red, would judge its burning heat to be *necessary*. Thus, then, in our ordinary experience, we are perpetually using the Categories, not only as the frames, or pure forms of our judgment, but as the frames, or pure notions, of the objects of intuition around us.[1] Such is Kant's famous derivation of his Categories from the forms of judgments—a derivation imperfectly comprehended for want of holding fast to Kant's express statement, that these pure *a priori* concepts were the rules not merely for judgments, but for all *objects of our intuition*.

[1] It was noticed to me by Mr. J. C. Malet, that this binding up of intuitions produces *integral* wholes, whereas the binding up of concepts in judgments produces *universal* wholes—a remark worthy of notice, as suggesting a transcendental affinity between logical and real unity. Cf. *Prolegomena*, pp. 73, 76. Kant there holds that the Categories determine our intuitions, *in order to fit them for judgments.*

The following is accordingly the table of these pure concepts of the understanding:—

1. Quantity.	3. Relation.
Unity.	Of Inherence & Subsistence.
Plurality.	Of Causality & Dependence.
Totality.	Of Community (reciprocal action between agent and patient).
2. Quality.	**4. Modality.**
Reality.	Possibility—Impossibility.
Negation.	Existence—Non-existence.
Limitation.	Necessity—Contingency.

*Kant has called them *Categories*, *because his original design is identical with Aristotle's*, though the execution of it differs widely. On this observation English philosophers, especially Hamilton and Mansel, have made such comments as disclose a complete ignorance of Kant's derivation of the Categories. They say that he brought a new, nay an opposed meaning into Aristotle's time-honoured nomenclature, because the investigations were totally diverse. In his usual antithetical style, which palms off rugged clearness upon us as good sense, Hamilton says that Aristotle was investigating the laws under which the object is known, Kant on the contrary the laws under which the subject thinks.[1] If the reader has followed my exposition in the pre-

[1] Cf. Note A to *Reid's Works*, p. 762.

vious pages, he will have seen that Kant's Categories are just as much as Aristotle's, 'the highest classes to which objects of our knowledge could be generalised,' nor was Kant likely to make so silly a blunder as to assert his intention to be the same as Aristotle's, if it were only to be contrasted with it. This is not the only place in which commentators have had the audacity to contradict the plain statements of the Critick as to Kant's intentions.

But as Kant says, the execution of the plan differs widely from Aristotle's. For the above is the list of all the pure notions of combination, or synthesis, which the understanding contains, and through which it is an *understanding*, for by them alone can it *understand* the variety of intuition, by grouping it into objects. This table then and its divisions are deduced from one general principle (that of judgments) instead of being picked up at random by mere empirical induction, which can neither certify the completeness of the list, nor give any reason why these and no other should be in the pure understanding. Hence Aristotle's table, even with the post predicaments, was never complete; it included modes of sensibility (*quando*, *ubi*, *situs*, &c.), an empirical notion (*motus*), and even deduced concepts (*actio*, *passio*).

Apropos of the last-named notions, Kant observes that the Categories, as generic concepts of the pure understanding, have their *pure deduced*

concepts under them, which he proposes to call *predicables* of the pure understanding. To draw out a table of these would be here to turn from his object, and he therefore passes the matter by with this notice. He also declines to define the Categories, as he wishes to avoid collateral controversies,[1] and is only here concerned with analysing them for his special purpose, not building up a system of pure reason, in which such definitions would be fairly demanded. He considers that with the basis here supplied the task will not be difficult.

§ 11.* In the Second Edition, two sections of reflections on the Categories were appended, which I shall pass over as briefly as possible, as not belonging to his main argument. But I must call attention to the very first statement in these sections, which contains a vindication of the common charge brought against Kant, that he was enslaved by the love of symmetry, and forced such Ideas as those of the world and God into the scheme supplied by the Categories and logical syllogisms. Not only is the table, says Kant, necessary in the

[1] In a passage of his First Edition, which will be found in vol. iii., p. 220, sqq., he goes more fully into the reasons why the mere Categories *cannot* be defined. These passages were modified in the later Editions. Notwithstanding there are, in the discussion of the Schemata of the various Categories (*Critick*, pp. 110–12, 181) various indications of the Categories, which amount almost to Definitions, by means of the schemata.

theoretical part of philosophy, both in giving us a plan for a *complete system* of our science, as well as its *division on fixed principles*, but as it contains all the elementary notions of the understanding, and even the form of their systematic combination, so it must suggest for any speculative science both the *heads*, and the *arrangement* of them. Kant himself applies them to natural science in another treatise. If the critics then had objected to Kant that he was violating the natural relations of things by forcing them into his classification, he would answer that not he, but nature, had prescribed it. All our thinking is only comparison, all comparison is judging. Analyse therefore the possible forms of judgment, and you have all the possible kinds of thinking. If this be so, the arrangement according to the Categories (and of course according to the syllogisms derived from them) is not artificial, but the most natural and necessary possible, and moreover one which will apply equally to all theoretical sciences.

Remark 1. The table naturally falls into two subdivisions, the one referring to objects of intuition, the other to the existence of these objects. These he distinguishes as *mathematical* and *dynamical* Categories. The second, as they consist of relations of objects either to other objects, or to us, have correlates.

Remark 2. Instead of a division by dichotomy, each class has three members, the third arising from

a combination of the first and second. So *totality* is nothing but plurality considered as unity; *community* the *causation* of different *substances* in determining one another, and so of the rest. Nevertheless, this third Category is no mere *predicable*, or deduced concept. For it requires a distinct act of the understanding. So our notion of a *number* (which is a totality of several units) is not always possible, even when we have the concepts of unity and plurality before us, as for example in the case of infinity. Neither do substance and cause explain, when merely combined, how one substance can *influence*, or be the cause of something in another.

Remark 3. The agreement of the Category of *Community* with the corresponding form of the disjunctive judgment is not at first sight obvious. But, we have already seen (above, p. 184), that the sum of the predicates in a disjunctive judgment makes up a total sphere of knowledge, in which the parts are not subordinate, but co-ordinate, as mutually exclusive, being the parts of an aggregate. A similar combination is conceived in the *totality of things*, which are not subordinated to one another as effects are to causes, but thought as co-ordinate, and affecting one another; as for example, in a body, the various parts are co-ordinate, and mutually attract and repel each other. The understanding pursues the same proceeding, when representing to itself the sphere of a divided concept, and the parts of a divided

thing; both consist of a whole, containing mutually exclusive parts.

§ 12. The celebrated proposition, *Quodlibet ens est unum verum bonum*, though not included by scholastic philosophers in the list of Categories, nevertheless holds among them a position which ought to give it this *status*. It is worth inquiring whether some real though misunderstood rule of the understanding may not be at the basis of this principle, though it is now antiquated and in desuetude in our philosophical books. These pretended transcendental attributes of things are nothing but logical requisites and criteria of our *concepts of things* generally, and place the Categories of Quantity at the basis of this cognition. But though the schoolmen were using these Categories only logically, in a formal sense, they incautiously raised them to the position of properties of things *per se*. In every cognition of objects there is a *unity* of the concept, which may be called *qualitative unity*, as when we speak of the unity of a play, a speech, or a story. Secondly, there is *truth* as regards its consequences. The more true consequences follow from a given concept, the more evidences have we of its objective reality. This may be called the *qualitative plurality*. Finally, *Completeness*, in that this plurality can be reduced to the unity of the concept, and to it alone—this we may call its *qualitative completeness* or totality. It appears, then, that the Categories of Quantity in

which the units that produce the *quantum* should be thoroughly homogeneous, are here used to combine *heterogeneous* parts of our cognition, by using the quality of cognition as our principle. So the criterion of an hypothesis (or other concept) is its *unity*, i. e. its not requiring auxiliary hypotheses; the *truth*, or agreement with itself, and with experience, of the consequences deduced from it; and, finally, its *completeness*, in that the consequences point back to this, and this alone, so that what we conceived synthetically can be shown analytically. The list of Categories are not then to be increased by these pretended attributes of things, which only come into existence by leaving out all relation to things, and reducing our mere treatment of concepts to general logical rules.

* § 12. *Kant's Table of Categories, and his Critics.*— It is curious that the very ground upon which Kant attacks the Categories of Aristotle has been urged as the particular objection to Kant's own list. 'It was a design,' he says (p. 65), 'worthy of an acute thinker like Aristotle, to search for these fundamental concepts. Destitute, however, of any guiding principle, he picked them up just as they occurred to him.' Now, let us hear Schwegler,[1] 'The method of Fichte, just like that of Hegel afterwards, is a combination of the analytical and synthetical methods, by which Fichte earned the credit of having first deduced the

[1] Ed. Stirling, p. 262.

Categories of philosophy from one single point, and of having brought them into connexion, instead of taking them merely empirically, and co-ordinating them, as had been done, even by Kant.' The same view is taken by Mansel :[1] 'the Kantian Categories are not deduced from an analysis of the act of thought, but generalized from the forms of the proposition, which latter are assumed without examination, as they are given in the ordinary logic. A psychological deduction, or preliminary criticism, of the forms themselves, might have considerably reduced the number.' And so both Fichte and Mansel have given further analyses, which the curious reader may find in the treatise just quoted of Mansel's, and in Fichte's *Wissenchaftslehre.*[2] These analyses are in substance the same, and consist in identifying quality with quantity, and discarding relation and modality, on the principle that substance and cause are implied in them, and that these notions exclude them from the first rank. I suspect that, upon a careful perusal of Mansel's discussion, the reader will be glad to fall back upon Kant's plainer, if more empirical, classification, and will agree with him in not taking any interest in the subtleties of modern philosophers on the subject.[3] There is, however, one charge from

[1] *Metaphysics,* p. 193, *note.*

[2] *Works,* vol. i., p. 166, *sqq.*

[3] The great diversity of philosophers as to the reduction of Kant's Categories is remarkable, and is an argument against

which Kant must be cleared, and that is, that he did not go upon a fixed principle in his Table. His introduction to the subject is quite explicit. 'Transcendental philosophy,' he says (*Critick*, p. 56), 'has the advantage, and moreover the responsibility, of searching for its concepts upon a principle, because they originate pure and unmixed from the understanding, as an absolute unity, and must hence be connected according to one concept or notion. Such a connexion gives a rule,' &c.

What is the principle according to which we must proceed? He shows that the understanding has no power of intuition, and hence can only regulate and bring into classes and unities the intuitions given by our sensibility. This spontaneous faculty he calls the function of the understanding. And what is the only use we can make of these unities? To judge by means of them. And how do we judge by means of them? We repeat the process by which they have been already formed, and bring an additional representation under them. The understanding has no other duty at all; hence it may be simply called our judging faculty. This is the *a priori* argument and principle upon which he bases his

such reduction. Cousin reduces them to substance and cause; Fischer and Schopenhauer, to cause only; Hamilton to Condition, which appears to be the Category of cause without the schema, or of relation generally. When philosophers differ so widely, it may be well to inquire whether any remedy is really required.

Table of the Categories; so that, in this sense, his list is neither purely empirical, nor picked up at random.

The number of the classes of judgments he did take for granted, from the existing treatises on logic (which, I suppose, discovered them empirically); but this because there could not be a class of judgments without a corresponding expression for them in human language, and the grammatical analysis of language is long since completed; and because he saw distinctly that psychologically they depended upon different acts of the mind. That it was possible to reduce them in number, was a point which came distinctly before him, and which he combats in his observations on the Table of Judgments; and in farther remarks (p. 67), he even insists on some judgments, which are logically reducible under one head, being kept apart as psychologically distinct. It is not fair then to charge Kant with having evaded or overlooked a more complete psychological deduction; but we must rather place his authority (and his psychological acumen) over against those of the critics, and supposed improvers, of his system.

It is obvious that two sorts of reduction are possible: we may either reduce the number of the Categories under each head, or we may reduce the various heads or classes to a lesser number. The first description of reduction has been (as was observed already) noticed and rejected by Kant. The second

has been attempted by Mansel. Now, that there exists an analogy between the classes of Categories would be naturally suggested, and probable, from the unity of the pure reason, upon which Kant insists frequently, and this would also suggest the same number of judgments under each head. But the question remains—Is this similarity *Identity*, or merely *Analogy?* Kant could only regard them as identical, if the quantity and quality of judgments were proved identical. Take, for example, the supposed identical Categories of unity and reality. Because affirmation asserts unity between two representations, can we jump at the conclusion that affirmation is identical with unity? Certainly not; an asserted unity between representations has nothing to do with the Category of unity, derived from singular judgments. Of what does a judgment consist? Of a subject, a predicate, and a copula. What can we say about the subject? It may be either one, or many, or a totality (the many regarded as a unity). What about the predicate? We may assert it to be identical with this one, or many, or whole, or the reverse. How can this act of mind be declared the same as the former? If the predicate of a judgment were singular, and we affirmed it of any sort of subject, we should be much nearer the Category of unity.

So, again, in a negative judgment we regard one attribute as not co-existing with another; but here,

if we take a singular judgment, viz., 'Socrates is not foolish,' we do not *necessarily* imply other subjects which have this attribute, and hence, we no not obtain plurality. But supposing a class were here implied, it would surely be just as much implied in the corresponding affirmative judgment, which would accordingly suggest plurality as much as unity. Possibly Mansel was misled by his own statement, that in a judgment two concepts are considered 'in relation to *a common object* of intuition.' Perhaps the correct expression would be, 'in relation to *common objects*,' viz., how far the objects which rank under one of these concepts rank also under the other. If so, to think the co-existence or non-existence of attributes in one or more subjects is obviously distinct from thinking the unity or plurality of these subjects themselves. The former are, indeed, unifying and dividing processes, but so are all functions of thought, as Kant has said.

It would be tedious in this place to urge all the similar objections which could be made in detail to Mansel's reduction. But in general, except we can reduce the psychological acts expressed in the various classes of judgments to the same act, we have only demonstrated analogy, and not identity. The attempts, then, of Fichte and Mansel corroborate Kant's view of the symmetry and harmony between the various acts of the understanding as one complete whole; for these analogies are strong enough to suggest to acute minds complete identity.

CHAPTER VII.

INTRODUCTION TO THE DEDUCTION OF THE PURE CONCEPTS OF THE UNDERSTANDING. SECTION I.[1]

§ 13. *Of the Principles of Transcendental Deduction generally.*—Jurists, in discussing claims, are wont to distinguish the *quæstio facti* from the *quæstio juris*, and used to call the proof of the latter the *Deduction*, that is to say, the deduction of the claim from acknowledged principles, or documents. We use a number of empirical concepts without any such justification being required by ourselves or others, because experience is always at hand, to prove their objective reality. Yet here, too, there are some concepts, such as *luck* and *fate*, which, though commonly recognised, cause us great difficulties when the question *quid juris* is asked as regards them, seeing that neither experience nor reason affords the grounds of answering it.

But among the various concepts in the complex tissue of our knowledge there are some meant for

[1] The heading is: 'The Transcendental Analytic,' Book i., part 2.

pure *a priori* use, and their claims always require a deduction, for proofs from experience are here insufficient, and yet we must know how these pure concepts can refer to objects. The explanation of the way in which they do so Kant calls their transcendental deduction, as distinguished from the empirical, which shows how a concept is acquired by experience or reflection upon it, that is to say, the facts from which our use of it arose.

There are two very diverse kinds of notions which agree in referring *a priori* to objects—the notions of Space and Time as Forms of Sensibility, and the Categories as concepts of the understanding. If a deduction of these (or proof of their possibility) is necessary, it must, of course, be transcendental, as their distinguishing feature consists in applying to objects, without drawing anything from experience in order to represent them.

Of course, we may inquire quite independently into the occasions when both this part, and the rest of our knowledge arose in experience—an experience which contains two dissimilar elements, the *Matter* given by the senses, and the *Form* for ordering them, springing, on the occasion of the former, from pure intuition and from thought. Locke deserves the credit of first opening this path. But a *deduction* of pure *a priori* concepts can never be thus obtained. For then we only explain from experience *the fact that we possess* pure cognition, whereas these concepts

must exhibit a very different pedigree from that of empirical concepts. No one, therefore, who understands their nature can accept anything but a transcendental deduction of them.

But granting all this, is such a deduction absolutely necessary? We have, indeed, pursued the notions of space and time to their source, by means of such a deduction, and so explained and fixed their objective value. Yet Geometry follows its course through nothing but *a priori* cognitions, without asking for any certificate of the legitimacy of its fundamental notion—space—from philosophy. But the use of this notion here applies to the external world of sense, where all geometrical cognition is immediately evident, being based on *a priori* intuition, in which the objects are given (as to form) by our cognition. When we come to the pure *concepts of the understanding*, the necessity becomes apparent, not merely of justifying them by a deduction, but of giving a deduction even of the notion of space. For these concepts refer to objects not through intuitive predicates, but through pure thinking. They refer to them generally, and are neither based on experience, nor can they show any object in *a priori* intuition, affording a basis for their synthesis. Hence they not only excite general suspicion about their objective validity, and the limits of their use, but even involve the *concept of space* in this suspicion, as they are disposed to apply it beyond the conditions

of sensuous intuition. This is the reason why a transcendental deduction[1] was given above. The reader who is not convinced of the inevitable necessity of this deduction will only grope in the dark, and end as ignorant as he began. But he must also perceive the obscurity and difficulty of the investigation, and not complain of weariness in its solution. For upon this it depends whether we are to give up all our claims to any possessions in the favorite department of metaphysic, beyond the bounds of all experience, or bring this critical investigation to a successful issue.

There was no great difficulty in showing (in the Aesthetic) how the notions of space and time, though *a priori* cognitions, were yet related necessarily to objects, and rendered a synthetical cognition of them possible, independent of all experience. No object can appear in empirical intuition except by means of thse pure forms, hence they are pure intuitions, which render objects possible as phenomena; their synthesis is therefore objectively necessary.

But as phenomena can appear in intuition, without being necessarily related to the functions of the understanding, a difficulty arises which did not occur in the Aesthetic, viz., *How are subjective conditions of thought to have objective validity*, or be the necessary conditions of all cognition of objects? Take, for example, the concept of cause, which signifies a

[1] He calls it a transcendental exposition in the Aesthetic.

peculiar kind of synthesis, by which we put after *A* something quite different *B*, according to a fixed rule. It is not obvious *a priori* (empirical evidence being inadmissible), why phenomena should contain anything of the sort, and we may doubt whether such a concept is not idle, and baseless in experience. Objects would not be objects did they not conform to space and time, but it is not so clear that they must conform to the conditions which the understanding requires to produce unity in its thinking. Phenomena could appear without any such conformity. It has been suggested (by Hume and others) that experience is perpetually offering us examples of these regularities in phenomena, which are quite sufficient to suggest the notion of cause, and establish its objective validity. Kant thinks that such concepts must either show an *a priori* basis, or be abandoned as mere chimeras. He points, as usual, to the *strict necessity* of the sequence of cause and effect, and the absolute universality of its application, as attributes which cannot possibly be given by experience. This attitude of Kant has already been discussed.[1]

Transition to the Transcendental Deduction of the Categories.

That our synthetical representation should necessarily correspond or coincide with its objects is

[1] Above, p. 94, sqq.

only possible in two cases; either if the object makes the representation possible, or if the representation, and it alone, makes the object possible. In the former case, the relation is empirical, and the representation could never be possible *a priori*. This is the case with phenomena, so far as they are sensations. In the second case, our representation does not, indeed, cause the object to exist (if we except the causality of the will, to be elsewhere discussed), but nevertheless determines it *a priori*, if through the representation alone we can know anything *as an object*. This knowledge requires two conditions necessarily, intuition, by which the object is given merely as an appearance; and a concept, by which an object is thought, corresponding to the intuition. We have above explained how all phenomena must necessarily agree with our intuition, as they only appear (and are intuited) through it. Now comes the question, whether there are not also concepts within us, as antecedent conditions *a priori*, under which alone anything can be thought an object. If so, all empirical knowledge of objects must correspond to these concepts necessarily, or else no *object of experience* is possible. But as soon as we go beyond the mere data of the intuition of the senses, all our experience does contain *concepts* or notions of objects given in intuition, or appearing in it; so then concepts of objects in general do lie at the basis of all our empirical cognition, as *a priori* conditions. Con-

sequently the objective validity of the Categories, as *a priori* concepts, depends on this, that through them alone experience (as far as the form of thinking is concerned) is possible. Of course, they have a necessary relation to objects of experience, if it is only by means of them that such an object can be at all thought.

This then is the principle on which the transcendental deduction of all *a priori* concepts depends. To explain the development of experience in which they occur, is not a deduction, but an illustration of them, as it does not prove them necessary. Without showing their primitive relation to all the possible experience in which objects occur, their relation to any single object could never be comprehended.

In his First Edition, Kant closes this preface to the Deduction with a mention of the three faculties of the mind that afford the clue to the succeeding discussion.[1] In the Second Edition he substituted the following observations. 'The celebrated Locke,' he says, 'ignoring totally any such deduction, and finding the pure concepts of the understanding in experience, deduced them from it, and was yet so illogical, that he attempted in this way to reach

[1] This passage, which I have given in my translation of Fischer's Commentary, p. 76, *note*, merely anticipates the after discussion, and therefore requires no farther mention here.

cognitions far beyond the limits of experience.'[1] David Hume saw that this latter attempt necessarily required concepts with an *a priori* origin. But as he could not understand how the understanding came to think certain concepts necessarily joined in the object, which were not *per se* joined in the understanding, and as it did not occur to him that the understanding might, through these very concepts, be the originator of experience, he was compelled to derive them from experience, and through constant association, which produces *custom* or subjective necessity, falsely deemed objective. He was logical enough to deny that with such principles we could ever pass the bounds of experience. But these empirical deductions are refuted by the fact, that we actually possess scientific cognitions *a priori*, viz., pure *mathematic* and *general physic.*

The former of these celebrated men opened the door to *enthusiasm*, for if the reason has pretensions or claims on its side, it will not be restrained by vague exhortations to moderation; the latter abandoned himself to *scepticism*, as he thought he had discovered so universal a delusion mistaken for sound reason in our faculty of knowledge. We are

[1] This is the ordinary view of Locke's philosophy, which ignores the intellectual side of his system. But this is not the place to correct it. Cf. Prof. Webb's *Intellectualism of Locke*, passim.

now to essay whether the reason cannot be steered safely between these rocks, and whether we cannot save for it the whole sphere of its proper activity, while assigning to it fixed and determinate boundaries.[1]

[1] The explanation of the Categories, with which he concludes this section, is only an amplification of the remarks explained above, p. 187, sqq., to which I refer the reader, as I desire to remove from this exposition, as far as possible, the many repetitions and amplifications, which have misled the student of Kant hitherto.

CHAPTER VIII.

THE DEDUCTION OF THE CATEGORIES. THE FIRST EDITION, AND THE PROLEGOMENA.

* We have now arrived at the great *crux* to most readers of the Critick, the famous Deduction of the Categories. The solution has been, to some extent, implied in the foregoing discussion, and the intelligent student will, doubtless, anticipate the gist of Kant's argument; but we must not be content with stating the theory; we must also give some comparative account of the various forms which the discussion assumed in the First Edition of the *Critick*, and in the *Prolegomena*, published in 1783. Were this omitted, the reader might ask why Kant had obscured by prolixity and by repetition a discovery in itself plain and comprehensible, and which can be stated in a brief compass.

* Perhaps the first and most important help the student can obtain from a commentary on this part of the Critick is to have the repetitions in Kant's argument carefully pointed out. The discussion in the First Edition goes over the same ground three

times. As he tells us himself,[1] 'I have thought it better, in the four following paragraphs rather to prepare than instruct the reader, and not to lay before him the systematic discussion till the succeeding third section.' All the *momenta* of the proof are, however, contained in this preparatory discussion;[2] and he accordingly, in opening the third section (p. 207), says, 'The detached observations made in previous section (containing the four paragraphs), we shall here unite and present in a connected form.' The reader will, therefore, find in this section a *repetition* of the observations in the previous section, not, however, without some modifications. For having hitherto pursued the analytical method, starting from empirical perceptions, and passing up by analysis to the *a priori* elements contained in them, he now tells us (p. 207), that he will 'begin from pure apperception'—in other words, give us the same proof *synthetically*. He does this briefly and completely (pp. 207–10), but having done it, he reverts to his former analytical procedure, and says (p. 210), 'We shall now expound the necessary connexion, &c., beginning from below, from the empirical extremity.' He then goes over the very same ground, and in the very same order, as in the four preparatory paragraphs, amplifying a little here and there, modifying a few expressions,

[1] Vol. iii. p. 194.

[2] Vol. iii. pp. 194–207.

but adding little, except (as we shall see) that he shows the close relation between the three faculties expounded, and so brings into a connected form the observations before detached. If the reader will attend to these hints, he will considerably curtail his labour, and save himself the perplexity of endeavouring to find new arguments, where Kant is merely repeating and enforcing old ones.

As the Second Edition differs mainly from the First in developing at great length the synthetical proof, very briefly given at first (pp. 207–10), I shall consider that part of the discussion by the light of the Second Edition, and shall give an account, as brief as possible, of the First Edition, omitting this short passage.

A few words will here show us the attitude of the *Prolegomena* on the same subject, in a passage following the analytical method also, as Kant expressly tells us at the outset of his shorter work. I already called attention to the two-fold character of the Categories, which are both general concepts, or frames of objects of intuition, and also pure general forms of judgments. These two functions are closely related, for the frames into which the former bring intuitions are necessary conditions of these intuitions becoming fit for judgments; our intuitions are, as Kant says, determined by these Categories, in relation to some one of the pure forms of judgments.[1]

[1] See especially his statement in the *Prolegomena*, iii. p. 73.

The deduction of the Categories need therefore only establish their objective necessity in either of these relations, and the other will necessarily follow. For when we speak of the Categories being necessary for our experience, what do we mean by experience? We mean a great complex, embracing a vast number of *objects*, and we also mean the legitimate and orderly *connexion of these objects* into a great harmony, or unity. This connexion of objects, which implies certain necessary relations among them, can only be expressed or conceived in judgments concerning objects. If the Categories are necessary for the formation of the judgments of experience, it is clear that they must also be necessary for the objects of these judgments, since nothing can be for us an object except it be either the subject or predicate of some judgment. The necessary laws, therefore, of the connexion of objects must hold good of these objects themselves. Such an inquiry Kant calls a deduction of the possibility of [the faculty of] experience, as contrasted with a deduction of the possibility of the objects of experience. The latter side of the deduction had been brought forward prominently in the First Edition, and it is only[1] in the two summaries of the discussion, that he notices the power of the understanding to make laws for nature,

[1] In the fourth paragraph, in section 2, and at the end of section 3, especially p. 203, vol. iii.

in fact, to establish *necessary connexions* among the objects of our experience. This latter is then the aspect of the Categories which he takes up in his Prolegomena.[1]

Starting from the statement that Nature means a necessary synthesis of phenomena, not of things *per se*, he shows (§ 15) that there is a pure science of such nature, which possesses universal and necessary synthetical judgments applicable to all nature, whether internal (psychology) or external (physics). These judgments are the *laws* of nature. But the word nature, he adds (§ 16), also means the complex of all the objects of experience. He proceeds to inquire (§ 17) which form of the problem (the same in either case) is preferable, and he decides that, owing to the ambiguity of the word *object*, the Kantian sense of which was then new and strange,[2] it is better to take the formal side, and discuss the possibility of experience, upon which the possibility of the objects of experience necessarily

[1] Vol. iii. pp. 63, sqq.

[2] An object, in the proper Kantian sense, consists of a number of sensations, bound up into a necessary unity. As this latter element cannot be given by mere sense, an act of the understanding, or of the imagination, is necessary in knowing any object. As the former element can only reach us through our sensibility, objects only exist in our experience, and things *per se* are improperly called by the same name. This will appear more fully in the sequel.

depends. Following this course, he shows (§ 18), that our ordinary judgments of perception cannot become judgments of experience without expressing a *necessary* connexion, or a connexion in the object, as it is called, when all men agree in the connexion. But this objective validity or necessity is merely equivalent to universality. What, then, must be added (§ 20) to the perceptive judgment, to make it a necessary judgment of experience? Simply this; the perception in question must be subsumed under such a concept as determines for it a place among the general forms of judgment.[1] These general

[1] As to the examples given by Kant (vol. iii., pp. 71-4) there is no difficulty except in the case of the proposition, 'the air is elastic.' He arrives at this in a peculiar way, and himself confesses that the illustration is obscure. If we compare the analogous case of 'the sun warms the stone,' discussed in his note (p. 74), we shall see that he considers the proposition 'when the sun shines on the stone, it grows warm,' to express the attitude of the mind in mere perception, whereas the categorical equivalent marks the classing of the representations under an *a priori* concept. But I confess that I do not see my way in the other case so clearly. Kant indicates that after we have established the air to be the necessary condition, or cause of expansion, we then advance to the judgment, 'the air is elastic,' in which we regard elasticity as a quality necessarily belonging to the air. Mr. Monck has suggested to me that Kant had the experiments of Torricelli in his mind, by which both the weight and the elasticity of air were demonstrated. It was shown that if the pressure on the atmosphere be diminished, its volume increases, as for example, if a partially filled bladder be placed

forms of judgment will, therefore, suggest the table of pure concepts which correspond to them. The whole argument is clearly and concisely summed up in § 23, which I recommend the reader to study carefully, before he accompanies me farther. I can add nothing to the statement in that place.

I now revert to the exposition of the First Edition (Vol. iii., Appendix A.), for the most part analytical, like that of the *Prolegomena*, but differing, as I have said, in two points: (*α*) there is a short synthetical exposition at the opening of section 4; (*β*) with the exception of the concluding passages in the duplicate analytical exposition, the Categories are rather considered as pure concepts of objects, than as pure forms of judgments combining objects. If we omit these passages, and eliminate repetitions, we may sum up the argument as briefly as possible in the following way.[1]

A concept (p. 191) is nothing but a combination of attributes. If this combination is to mean anything more than a mere empty frame, the attri-

in a vessel from which the other air can be removed by a pump, the bladder will become fully distended, or even burst. This expansion depends on the nature of the air itself (requiring only the absence of counteracting causes) as its positive cause. I have no doubt this explanation is the true one, and clears up the difficulty as to Kant's illustration.

[1] I cite the pages of my English version in Vol. iii., Appendix A, so that the reader may verify the commentary at every step.

butes must be supplied by intuition; thus only can our concepts refer to the sole objects we can know, the objects possible in our experience. If then there be in us *a priori* concepts, even they must refer to experience, not of course as its offspring, but as rendering it possible; on this ground only can they be objectively valid. The possibility of experience, therefore, is the real point to be investigated. Whatever attempts we may make to grasp such notions as God or spirits by the aid of the pure concepts or Categories at the basis of experience, we must still conceive these things as objects, and therefore start from the same basis as we do in our legitimate experience. The Categories, therefore, will be sufficiently justified, and proved objectively valid, 'if we prove that through them alone an *object* can be thought.' (Here, then, he keeps out of sight the Category as a pure form of judgment, and treats it as a pure frame of objects of intuition.) But as other faculties are concerned, Kant proceeds to expound the subjective sources which make objects possible, and how far these sources are of transcendental use, or at the basis of our experience of objects.

Let the reader hold fast to Kant's prefatory remark (p. 194) that all our representations are bound together by one bond at all events, that of Time, the formal condition of our internal, and therefore indirectly of all our sense. All our representations are brought into at least one mutual relation, in Time.

But (1) as all our knowledge of objects requires a successive series of representations (both separate in space and differing in kind), there must be in the mind a power to grasp these separate details, and consider them as one complex object of intuition. This act (which is a function of our imagination applied to present objects of sense), Kant calls the *synthesis of apprehension.* But since even pure space, and time regarded as objects, cannot come into the mind without their parts being grasped together in this way, though they are *a priori* representations, it follows that this synthesis is possible *a priori*, and there is in us a *pure* synthesis of apprehension. (2) There is, moreover, another combinative faculty of mind, which causes past representations to come back to us in groups, and not singly. Our imagination reproduces them according to a law of association, which implies some prior affinity existing among them. This reproduction of past phenomena is equally necessary to our experience, for we could not think of a large number, or a long time, if we lost from our minds the earlier numbers or moments without recovery. This faculty of the imagination may then be called the *Reproductive* synthesis of the Imagination. Even this, however, is not enough. (3) When we have apprehended the present details, when we have reproduced the past impressions, what guarantee have we that they are identical with those formerly intuited? They must be *recognised* in the

concept we form of them, a concept which reduces this multiplicity to unity, and declares them to be the phenomena of a single identical consciousness. When we have produced this unity, we call it an *object.* What is this object? As we can know nothing beyond our representations, the object can only mean a necessary combination of them, which forbids our doing so at random, or capriciously. But such necessary combination can only be produced *by the understanding*, for the senses merely give us isolated representations. Thus an external object of these representations, such as *body*, is conceived just as we conceive (p. 199) a *triangle* to be an object, and yet this consists in nothing but a certain necessary combination of three right lines, under a concept, and may not exist in external nature. If the combination be necessary, it must, according to Kant's fundamental principles, depend on a transcendental condition. How can the necessary unities, which produce in us the notion of objects, be produced *a priori* by the understanding?

The required condition Kant finds in the *Transcendental apperception.* This does not mean the empirical consciousness of self, given in what is called the internal sense, but the transcendental condition, which renders this internal sense possible; that is to say, the mental unity, or identity, which we feel even when intuiting such *a priori* objects as space and time. All representations must be mine, they must come

under the identity of my permanent conscious self. Yet it is not the *existence* of this self, but its *action* or function, of which we are conscious. We mean no more by this feeling of personal identity than that it is the same identical function which combines phenomena into objects in all our experience. We cannot, therefore, be conscious of the identity of self except as the 'unity of the synthesis of all phenomena,' of course according to some plan, or some concepts yet to be determined.

Let us now turn back and consider what our notions are of *object* in general, and what we mean by a concept having objective validity. Our thoughts are said to refer to objects, when they apply to our intuitions, which again are supposed to refer immediately to (phenomenal) objects. But even these objects are only phenomena, and are, therefore, referred farther to a transcendental object, which is a mere indefinite supposition of thought, not obtainable by any intuition, and therefore the same in all cases, a mere unknown quantity, or x. Our whole notion of a definite object is a number of intuitions, necessarily combined. As the determinate intuitions are *ex hypothesi* absent in a general notion of object, what remains but the necessary combination, or synthesis, the frame-work, so to speak, of the intuitions? If this be so, the transcendental apperception just explained affords us the necessary bond of unity, or synthesis, and supplies us with the general notion of object,

which contains nothing else. This, then, is the form of phenomena, as space and time are the form of intuitions.

4. Kant adds a paragraph explaining how the Categories may be *a priori* cognitions, and enforcing this truth. When I speak of our experience, I mean one great unity, one vast combination of all the phenomena presented to me as *my* phenomena. Except they belong to this unity, they are no part of my experience. But whatever conditions are imposed on my (faculty of) experience must, of course, be equally imposed on the objects of experience acquired through that faculty. But the Categories have above been shown the necessary conditions of judging, therefore of thinking, in any experience, therefore they afford to objects also of experience their possibility. Thus they are *a priori* cognitions, and yet objectively valid. The Categories are, in fact, phases of the pure apperception, and all consciousness must be subject to it. Through it, therefore, or under it, they legislate for phenomena.

All empirical derivations of these Categories are idle, for they do not account for their *necessity;* and secondly, they postulate an universal law of association among phenomena, which suggests to us laws, and they give no explanation of this association. How can phenomena be conceived as related to one another by a thoroughgoing *affinity*, which alone explains our associating them? On Kantian prin-

ciples, this affinity is transcendental, and produced by their all being subject to one condition—the pure apperception, which binds them together by a pure synthesis. So it comes that the understanding prescribes laws for nature. Hence we can make *a priori* assertions about nature, and a strict science of nature is possible.

But the reader who desires to avoid repetitions, and obtain the shortest possible exposition of the analytical deduction, may, I think, pass by the four preparatory paragraphs, and confine himself to the repetition of their substance in pp. 210–17. For there, as Kant tells us, he has connected and brought into relation the isolated facts of these paragraphs. There it is that he declares the synthesis of apprehension to be the work of the imagination, which is necessary in knowing even ordinary objects (p. 211, note), and so brings the synthesis of apprehension and reproduction into relation. There it is more especially that he expounds the relation of the imagination and pure apperception, showing that association must be based on affinity; that this affinity is given by the union of all phenomena in one consciousness, but that this synthetical unity of consciousness, which is intellectual, can only act on sense by directing the productive imagination to combine phenomena according to fixed laws. The Imagination is, in fact, the go-between, which mediates between the pure understanding and the phe-

nomena; it is only reproductive as regards these phenomena themselves, but *productive as regards the order* in which they are reproduced. Kant here trenches upon the ground to be hereafter occupied in the schematism, I shall therefore say nothing more concerning it now. Finally, the statement that the understanding prescribes laws for nature is more fully developed in the end of the discussion, pp. 215-17. He adds a caution, that we cannot suppose empirical laws to be directly deducible from the pure Categories, any more than all the varieties of intuition could be conceived from pure space and time. But nevertheless, according to this very analogy of space and time, all empirical laws must be built on the type of the Categories, in other words, all our experience, *as to form*, must be conformable to them. More than this our deduction never attempted to prove.

CHAPTER IX.

THE DEDUCTION OF THE CATEGORIES. THE SECOND EDITION OF THE CRITICK.

We now approach the discussion in its ultimate form, as it appears in all the later Editions of the Critick. The first point to be noted is that in his first Preface, he had himself carefully distinguished two sides of his Deduction, one consisting of a view of the subjective faculties of the mind, the other a mere explanation how objects can become possible. This latter is the proper Deduction; the former, which consists in assigning a particular set of causes for a given effect, is not so.[1] It was, therefore, naturally to be expected, that when he desired to compress some parts of his original work, in order to make room for expansion in others, this highly important, but unnecessary exposition should be curtailed. Moreover, the first four paragraphs of the First Edition were fully reproduced in the sequel, and besides the publication of the Prolegomena during the interval, supplied an independent analytical exposition.

[1] Cf. above, p. 7.

I may add, that these paragraphs, and especially an introductory statement,[1] also suppressed, seemed to attribute to *sense* a power of combination which Kant carefully qualified on farther consideration. He would not speak in the Second Edition of a *synopsis of sense*, and he was more careful to show that the synthesis of apprehension was really the work of the imagination.

As therefore the *pure apperception*, or synthetical unity of apperception, was the point most obscure, and most difficult of comprehension, he determined to develop his brief synthetical exposition in the First Edition,[2] in order that he might 'begin from pure apperception,' and explain it more fully to his critics. It was necessary to do this in two directions, first, for those who could not understand him, or see how the synthetical power of the understanding could form a principle of unity in nature; secondly, for those who exaggerated our knowledge of this very pure apperception, and held that the Ego was given to us directly, not as a phenomenon, but as a noumenal reality.[3] The sections 16-19, therefore,

[1] Cf. K. Fischer's Commentary, p. 76, and Hartenstein's *Kritik*, p. 120, note.

[2] iii., pp. 207–10.

[3] The danger of being misunderstood in this direction affords another reason for his striking out the passage (p. 213) in which he spoke of 'the fixed and permanent Ego' as the correlate of all our representations. He insists here more strongly on what he had already stated in the First Edition, that we are directly con-

contain his fuller exposition of the synthetical unity of apperception. The second part of § 24 and § 25 contain his expanded refutation of the second error. This latter passage, then, may be postponed by the reader as not forming a necessary part of the deduction.

In the next place, the opening of § 15[1] is to some extent a repetition of his remarks on synthesis, in § 10, adding a few important points, but almost ignoring what he said of synthesis in the former section. The same observation applies more strictly to §§ 16 and 17, which merely amplify and reinforce the same points in varied language. Let me observe, lastly, that the first part of § 24 anticipates the schematism of the Categories, and discusses the function of the productive imagination, which must again come before us at greater length in that chapter. In brief, then, I recommend the reader the following course in this discussion. Let him read § 15, comparing it with § 10, and let him next read § 19. Let him then read § 16 or § 17, either of which suffices for Kant's argument. Proceeding directly through §§ 18, 20, 24, let him postpone the second part of § 24 and § 25 till he has read the concluding sections.

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scious only of a faculty of combining (synthesis), not of a subject exercising this faculty.

[1] Cf. my note on this numbering above. Mr. Meiklejohn numbers these § 6 and 11 respectively.

By this means he will greatly curtail his labour, and be better able to apprehend Kant's argument. I now proceed to accompany him through these sections in the order prescribed.

§ 15. If we look back to the exposition of § 10, we there see *synthesis*[1] put forth as the original and primary condition of knowledge, at first rudimentary and almost instinctive in its action, afterwards explicating itself into certain definite phases, or ways of combining, which Kant calls Categories. As his object at first is mainly to discover or determine the pure Categories, he passes over the earlier or undeveloped stage of synthesis, which is in existence and at work before we can form a concept, as its necessary condition. It is to this stage that Kant now turns his attention. It had been mistaken by some of his critics, and it had been asked whether the

[1] It may be asked why I have adhered to Kant's strange word *synthesis*, and not used the English word *combination*, which may mean the same thing. I have done so to avoid an important ambiguity, which Kant saw when he avoided the word *Verbindung*. Combination oftener means *the result of an act* (σύνθημα) of combining, than *the act itself* (σύνθεσις). This kind of ambiguity is common to *imagination*, *conception*, and many other such words. But nothing is more vital in this discussion than to hold fast that we are speaking of combination as an *act* or *function* of the understanding. This definite sense is exactly expressed by *synthesis*. Adhering strictly to this sense, the reader may substitute *combination*, or any other word he pleases.

Category of unity was not sufficient to account for the unity in objects of intuition. But, granting that our intuition is sensuous, or purely receptive, it is plain that representations are given us through it merely as such. Their form may also be *a priori* in us, and yet be nothing but the way in which we are affected. Neither of these can give us combinations of various representations [objects], for this is not an act of receptivity, but of spontaneity, and therefore the work of what we call the understanding, as opposed to sense. Whether we are conscious of it or not, whether the things combined be concepts, or sensuous intuitions, or pure intuitions, the *combination* is an act of the understanding, which Kant calls *synthesis*, indicating that this alone cannot be given by objects, but is the self-activity of the subject, and that we can represent nothing as combined in objects, which our understanding has not previously itself combined. Kant thinks it obvious that this act of the understanding is originally one and equivalent in all combinations,[1] and also the necessary condition of analysis.[2] It will be remembered that he

[1] Cf. above, p. 180, note.

[2] He shows this in an ingenious note to § 16. My notion of *red* is obtained by *analysing* several red things, and abstracting the colour. But I cannot do this without presupposing red as an attribute already combined with others in this or previous representations. An attribute common to many different representations, implies that they each contain something different com-

spoke in the First Edition of the *identity of function* of the understanding, and also of the *unity of the action*, in this synthesis.

But the very notion of such combination implies that variety is brought into *unity*, and this unity is a prior condition, not a result of the combination, which has no meaning without presupposing unity. We cannot, therefore, proceed to a judgment, or to a Category (such as that of unity), which is based on the power of judging, without presupposing this combination, or unity of given representations. We must therefore seek it at the very earliest stage of cognition. Let it be observed (§§ 10 and 19) that this unity is presupposed by all judgments, which are very inadequately described as the assertion of a relation between two concepts. In what does the relation consist? In nothing but reducing them to an unity, by means of this synthesis of which we are speaking. I may do this myself personally, in which case I call it a case of association, or may conceive it as being done by all mankind, in which case I call it a judgment of my perception, or a law of objects—in either case every judgment implies unity produced by this synthetical action of the understanding.

§§ 16, 17. Beyond the necessary reference of all

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bined with it. These, then, are synthetical unities, which must be presupposed before I can obtain an unity by analysis.

intuitions to space and time, they must be subject to another condition, viz., they must be present in our consciousness. There must be *a conscious I* to intuite them, or they are nothing. But this conscious I is not a receptive, but a spontaneous faculty, in short the faculty which combines them, as has just been explained. Furthermore, it is nothing but this consciousness of a combining faculty, the same in all acts of consciousness. This faculty Kant calls pure, or original apperception, since it is *a priori* and spontaneous. He also calls it the transcendental unity of self-consciousness, because this oneness of the conscious self is the source of *a priori* cognitions.[1] If representations could not be brought under the condition of being recognised as belonging to my single self-consciouness, they could not be considered as mine at all. The consciousness which merely accompanies different representations is fragmentary, and may be called empirical consciousness. But when I combine these various acts, and am conscious of this synthesis, then only do I become aware that my consciousness in them all was one, and identical. When I say then that all these representations belong to me, I mean this, and this only, that I am combining, or am able to combine them by this mental synthesis into one whole—the unity of self-consciousness, or, as Kant calls it,

[1] See his explanation of transcendental above, p. 167.

the synthetical unity of apperception. To say, therefore, that the understanding means the faculty of combining *a priori* our various representations under the unity of apperception (or consciousness), is to state an identical proposition, but it explicates our notion of pure consciousness, and shows that our identity of self cannot be thought without a synthesis of the variety given in intuition. These conditions are imposed on us because the faculty (intuition) which gives us multiplicity, and the faculty (self-consciousness) which gives us unity, are different in kind. If our understanding could intuite, then the multiplicity of intuitions or objects would be given directly in its representation, and it would not require the act of synthesis which our understanding, which only thinks, must perform. To us this condition is so necessary that we cannot even conceive an intellect directly intuiting, or even intuiting through other conditions than space and time, but if these other conditions made its intuition receptive, a synthesis similar to ours would still be required for the understanding attached to such an intuition.

When we speak of the understanding, or the faculty of *cognitions*, we regard the latter as referring to *objects*. But an object implies a group or combination of intuitions. This combination, as we have seen, can only be made by the synthesis of our consciousness. It follows that the unity of our consciousness is the necessary condition of our forming

any notion of objects. Here is an illustration: mere space gives us no object, but only the materials for an object. In order to know *something in space*, as for example a line, I must *draw* it, and so produce a synthetical unity of parts. The unity of this act, as comprising several successive acts, is the unity of my consciousness, which gives me the notion of a line, and so only can I obtain such an object. The synthetical unity of consciousness is therefore an absolutely necessary, or objective condition of all cognition, for not only do I require it in order to know an object, but every intuition must come under it, before it can even become to me an object.

§ 18. This *transcendental unity* of apperception is (as we have said) the unity by means of which we combine the variety of intuition into the notion of *an object*. For this reason we call it *objective*, to contrast it with such *determinations of our internal sense* as are merely subjective and empirical, and therefore not necessary. Every man makes some of these combinations for himself *a posteriori*. But the pure form of intuition (given *a priori*), considered as mere presented variety, must stand under the original and primitive *I think*, which alone contains an objectively valid unity, viz., valid for every understanding. It is under this objective unity (§ 19) that intuitions are brought in the act of judgment. When we say body *is* heavy, we do not merely assert what seems to us by association subjectively combined, but we

make an assertion which, whether true or false, is only possible by understanding what *necessary unity of apperception* is, and consequently bringing two representations under it. We assert these notions to be necessarily combined into unity, not in our empirical intuition, but by the synthesis of our perceptions in our pure consciousness.

Thus the first step in the Deduction has been reached. It has been shown that *objects* of intuition can only be obtained by a combination of multiplicity. This combination is not given in a sensuous intuition, which is pure receptivity. It is therefore added by the understanding, which is a faculty whose function is to combine. But all the several acts of combining are recognised by us as belonging to one and the same consciousness. The importance therefore of the unity of apperception, and its objective character, are manifest.

§ 20. But what have the Categories to do with this argument? What relation have they to the pure apperception? It is this. The intuitions can only be brought under it by the logical function of judging. Whatever variety therefore is given in intuition can only be brought under the pure apperception by being brought under one of the functions of judging (as exhibited in the table, p. 183). But the Categories are these very forms of judging, so far as they merely combine the variety of intuition (§ 13). This variety therefore stands under the Ca-

tegories as various phases, or ways, of reducing them under the unity of apperception.

§ 21. We have now proved that the Categories, which arise in the understanding, quite apart from sensibility, can introduce unity into intuitions quite generally, for this might still be the case, even were our faculty of intuition different from what it now is, provided it were receptive. We have not yet considered how empirical objects are actually given us, or whether we can identify the unities given in them with the unity imposed by the Category. When this is done, our deduction will be complete. But though we have hitherto abstracted from the way in which intuitions are given us, we could not abstract from the fact that they are *given to us*, that is, given from some other (here undetermined) source than our understanding, and independent of it. If our understanding possessed a power of intuiting, the Categories, which are mere acts of combining variety *given to it*, would be idle, for the objects would then be given directly to it in the act of intuiting. This peculiarity of our understanding, as opposed to an intuitive understanding, is, of course, a primitive fact, and inexplicable.

§ 22. But before we consider how empirical intuitions are given *to us*, as contrasted with other possible sensuous faculties of intuition, it is important to limit the other side of the process, and show that *the Category is of no use in cognising things, except*

when applied to objects of experience. For *thinking* and *knowing* (cognising) *an object* are not the same. To know it, we want both a Category, or concept, and also an intuition, without which the former is mere form, or possibility of knowledge. But we can have none but *sensuous* intuitions either of pure space and time, or of sensations in space and time; and, moreover, the objects given by the former (mathematical figures) are mere forms, which do not prove the existence of things corresponding to them. *Things in space and time* must be representations accompanied by *sensations*, or empirical perceptions. Hence the Categories, even when applied to pure intuition, give us no knowledge of things, till we appeal farther to empirical intuition, or experience. Our assertion is therefore proved.

§ 23. It was easy to perceive the corresponding limitation in the case of space and time, for we cannot carry them beyond our senses. The pure Categories are not so restricted, and may apply to the objects of any *sensuous* [or receptive] intuition, whether it be in other respects like ours or not. But this extension proves vain. For beyond *our* sensuous intuitions they are mere empty forms of objects, since there is no actual intuition at hand, to which they can apply their synthesis to produce an unity of apperception, and this is the only function they can exercise. We can only then describe an object of an intuition different from ours by negative predi-

cates, by judging, for example, that it is in space and time, or subject to change. But these negations contain no positive cognition whatever. And even if they did, we should still not have the least notion what Category to apply to such an object, for empirical intuition must determine this point also, as will appear when we consider the schematism.

§ 24. In this paragraph Kant comes to explain the office of the imagination, as intermediate between the pure understanding and the sensuous intuitions. He anticipates to some extent the schematism, but this is nevertheless requisite to the full comprehending of the Deduction. The pure Categories, referring to the combination of the data of intuition generally, are mere *forms of thought*, and not only transcendental, but purely intellectual. But as the form of sensuous intuition lies *a priori* within us, the understanding can act upon this, and through it upon sensuous intuitions. By this means the purely intellectual synthesis of the naked Category passes into an intuitible or figurative synthesis (*synthesis speciosa*), though still *a priori* and transcendental. Kant regards this latter synthesis as the work of the imagination, which therefore performs a transcendental synthesis, to be distinguished from that of the mere understanding. As reproductive of intuitions, it is indeed a faculty belonging to *sensibility*, but as exercising a spontaneity which actively determines intuitions in harmony with the Cate-

gories, it is allied to the understanding, and may be called the *productive* imagination, which performs a transcendental synthesis under the direction of the understanding.

Omitting for the present the Appendix to the Aesthetic here inserted by Kant, we proceed at once to the conclusion and summary of the whole deduction.

§ 26. In the *metaphysical Deduction* (or *exposition*, as he calls it in the Aesthetic), the *a priori* origin of the Categories was proved generally by their perfect coincidence with the general functions of thinking (§ 10). In the *transcendental* (§§ 20, 21) their possibility was shown as *a priori* cognitions of the objects of intuition generally—that is to say of any sensuous or receptive intuition. We now proceed to complete the Deduction by showing the possibility of cognising *a priori*, according to the laws of their combination, whatever objects can be presented *to our senses*. Our combination of variety in space and time, an act of the imagination, called by Kant (above, p. 223), *the synthesis of apprehension*, must obviously conform and correspond to the *forms* of space and time. But space and time are not mere forms of sensuous intuition, but themselves intuitions, that is to say, their variety is represented *a priori* as combined into *unity*. It appears then that *unity in the synthesis of variety*, both within us (in time), and without (in space), is given as the first condition of sensuous

apprehension along with the very act. This can be no other unity than the combination of intuitions in general, which takes place in pure consciousness, according to the Categories, as above explained (p. 234); it is here applied to *sensuous intuitions*. As, therefore, experience is nothing but a knowledge of connected perceptions, and these are shown to stand under the condition of the Categories, the Categories are fully proved to be the conditions of the possibility of experience. Here are some examples: When I perceive a house, the *necessary unity* of space, and of my external intuition generally must be presupposed. It is in accordance with this that I as it were draw its figure, and separate it from surrounding perceptions.[1] This is the synthesis of apprehension. But abstracting from space, we find that the understanding exercises the same spontaneity more generally by the *synthesis of homogeneous parts* in any intuition, which is the Category of quantity. The former synthesis mustcorrespond with this latter.

[1] That is to say, to perceive a house implies that we know it as a single object, separated from the surrounding perceptions given at the same time; also that it exists in space, in which the surrounding perceptions also exist. Two unities, the larger one of space, the lesser one of the house, are both implied in our knowledge of it as an object. Kant further states that we separate the house from its surroundings by a spontaneous act, which he calls drawing the figure, or mentally marking it out from the rest.

When I perceive the freezing of water, I apprehend two states of water standing in a time relation. But time is an *internal intuition* (as well as a form) with a necessary synthetical *unity* of parts, and the necessary condition of perceiving this relation. This is the synthesis of apprehension. But apart from time, the unity under which the understanding combines such varieties in intuition generally, is the Category of *cause*, which, when applied to my sensibility, determines all events in time according to its relation. Therefore the apprehension of the event, and therefore the event itself, stands under the relation of cause and effect.

The conclusion of the paragraph repeats the argument already (iii. pp. 206, 215) developed, that as the Categories prescribe laws for phenomena, or objects of nature (*materialiter spectata*), they must consequently legislate for the legitimacy or order of nature (*formaliter spectata*). There is no difficulty whatever in the argument, and as I have explained it already,[1] I shall not weary the reader with repetitions.

§ 27. We have come to the strange conclusion that for us no *cognition a priori* is possible, except *of objects of possible experience.* Yet though thus limited, it is nevertheless not borrowed from experience, but as regards both pure intuitions and pure Categories,

[1] Above, p. 219.

found in us *a priori*. As therefore experience and the Categories are in harmony, and experience is not the ground of possibility of the Categories, the reverse must be the case. This Kant calls the *Epigenesis* of the pure reason, which begets the frame and order of nature by means of its Categories.

Another alternative has been proposed: That we are so organized as to have subjective dispositions implanted in us, corresponding to the independent laws of nature. This is a sort of pre-established harmony. In the first place, Kant argues in reply, if we once begin to postulate such hypotheses, there is no limit to their farther use in explaining other difficulties. But it is still more decisive, that in such case the Categories must lack that *necessity*, which belongs to their very nature. He thinks that the law of Causality, for example, which asserts the necessity of certain consequences, would be false. For we should only be entitled to say: I am so constituted that I cannot think the effect and cause except thus conjoined. This is just what the sceptic wants, for then all our supposed objective judgments would be mere illusion, and when men were found, as there surely would, who denied the necessity, though they must feel it; we could, at all events, never dispute with them about a matter depending on the peculiar constitution of their thinking subject.

* The reader will at once perceive the close analogy between this reply and that of Locke to the

idealist sceptics of his day [Locke's *Essay*, iv. 2, §14]. It is too, like that passage in Locke, one of the weakest passages in the great work of a great author. Surely if we are all agreed that the laws of nature are a mental relation superadded to the bare successive feelings given to our nerves of sense, then the only question which remains is this: did the mind impose them originally, or abstract them from repeated sensations? That there should be an unknown order of nature, in addition to and corresponding with the order which our understanding is, on either theory, competent to impose on its sensations—to require this is so perfectly otiose and gratuitous, as to be wholly inadmissible in any reasonable theory of human knowledge. We might as well assume a real space and time, after all the phenomena have been perfectly and adequately explained by the Kantian theory.

If the reader has been able to follow me through this long and intricate discussion, he has mastered perhaps the greatest difficulty in the Critick.

We may conclude this Chapter with an account of the supplement to his Aesthetic, which is inserted in the middle of the discussion on the Categories, in §§ 24, 25. 'This,' he says, 'is the place to explain the paradox which must have struck everyone in the exposition of the internal sense' (§ 6), where it is said, 'that our internal sense represents us to ourselves as phenomena, not as we exist *per se*,' in other words,

that we only intuite our internal *affections*, not our internal being (self). As this puts us into a passive relation as regards ourselves, it has been usual to identify the faculty of *apperception* with the *internal sense*, whereas we distinguish them carefully.

In order to know ourselves, as in the knowledge of any other object, our understanding must employ its primitive faculty of combining the variety given in internal sense, and bringing it under the unity of apperception. We have seen that our understanding is not a faculty of intuiting, and must regard such a faculty, when acting in the sensibility, as a faculty differing from itself, and the variety given in it as a variety not obtained by its own direct action.[1] If, then, we turn our attention to the synthesis of the understanding, regarded purely by itself, it is nothing but the unity of the action, of which we are conscious even without sensibility, and which binds up the variety of sense, given internally, according to the form of internal intuition. So it is that our understanding, by a *transcendental synthesis of the imagination*, as it is called, being one of this subject's faculties, acts upon the passive subject, and thus affects the internal sense. Apperception and its unity, as the source of all combination, act upon all intuitions in general, under the title of Categories, before they act upon objects in sensuous intuition;

[1] So I understand this very difficult sentence.

in other words, the unity of apperception is necessary to obtain the frame, or Category, which is logically prior to our knowledge of any object (whether internal or external) in this frame. The internal sense is the mere *form* of intuition, which does not give us a *definite* intuition, or object, till its variety has been combined by that transcendental action of the imagination above called the figurative synthesis.

We can easily observe this in ourselves. We cannot conceive a line, or circle, or other figure, without *drawing* it in thought, or conceive even time, without drawing its external image, a right line. This means that we direct our attention merely to the action of combining multiplicity, by which we determine our internal sense successively, and so observe the succession in that sense. This motion, as an act of the subject,[1] if we attend to the mere action, by which we determine *the internal sense* according to its form, is what produces in us the very notion of succession. The understanding does not *find* the combination in sense; but *produces* it by

[1] Kant notices that the motion of an *object* in space belongs not to pure science, and therefore not to Geometry, as it requires experience to know that anything is moveable. But motion, as the act of drawing figures, which is presupposed by Geometry, is a pure act of successively combining multiplicity in external intuition generally by our productive imagination, it therefore takes its place even in transcendental philosophy.

acting upon sense. The difficulty as to how the thinking self can be regarded as different from the self-intuiting self, and yet identical with it, cannot be avoided or diminished by any other theory, if we regard ourselves (as we must) as objects of our own internal perception. That this latter is an intuition is plain, when we consider that the only image we can form of time, in which we represent ourselves, is a line in space, and that all measures in time are imaged by changes in external things, in fact, that the determinations of the internal sense in time are strictly analogous to those of the external in space. But we only intuite external objects, when we are affected through the external sense, we only intuite internal when we are affected through the internal sense, in other words, we know ourselves as phenomena in time, not directly, as to our real nature. Every act of *attention* gives us an example of this internal relation. Here anybody can perceive how his understanding, as an active faculty, determines his internal sense, as a passive state; in other words, we actively choose that our minds (here controlled as passive) shall attend to something different from the natural succession of ideas. § 25. But the phenomenal self given in internal intuition by the synthetical action of our understanding, is not the only datum we have. This very transcendental synthesis implies a consciousness, not of what we are, but *that we exist.* This representation we reach by *thought*,

not by *intuition*. Now, every human *cognition*, or knowledge, requires (α) a combining action of the understanding, which unites (β) the multiplicity given in some kind of intuition. It follows that this consciousness that we exist, as it wants the second element, is not a cognition of itself. This self is indeed no phenomenon, far less an illusion, but can only become an object by an appeal to internal sense. All the thinking in the world, all the Categories, will not supply this element. I exist therefore as an intelligence, conscious merely of its faculty of combining, but subject to a limiting condition in the things combined, viz., that they must be obtained by the internal sense, and therefore in time. This time modifies all the data we receive through it, and thus makes them phenomena, that cannot inform us of things *per se*. To obtain these latter we should possess an intellectual intuition.

The *I think*, gives us the *act of determining* our own existence, but no *determination* of our existence. As I have no self-intuiting faculty, to intuite the subject, prior to its act of determining, like as we have a pure sensuous intuition in time, prior to objects in time, it is impossible for me to determine my existence, as a self-acting being. I represent myself, therefore, as spontaneous in thought, but with an existence determined only, as other phenomena are, sensuously. It is the consciousness of spontaneity, however, which enables me to call myself an *intelligence*.

* I cannot but think this long and difficult parenthesis has been one of the main reasons why the Deduction was not better understood. It really does not bear on the argument of the Deduction, but on the Aesthetic, and was inserted here, because Kant could not treat it till he had explained pure apperception and the transcendental synthesis of the imagination. It is a direct refutation of the theory lately propounded by Dean Mansel, that we are presented with ourselves directly, or intuitively, as substances, in contrast to the indirect presentation of external things through their attributes. I cannot but think that his theory shows how little Mansel had apprehended this part of the Critick, as he seems to have followed Kant pretty closely whenever he could understand him. It is bad enough to say that we have an intuition of self, when, as a matter of fact, we cannot make a single assertion about the intuition, or explain it, but merely reiterate the assertion—unmeaning in itself—for the sake of a philosophical theory. But surely the further collocation of words, 'intuiting ourselves as substance,' might have made Mansel pause. How is it conceivable that we should intuite substance, as distinguished from its attributes? Surely if such a thing were conceivable, the substance which we postulate for external things would not be such an utterly negative, inconceivable representation? In a private communication to me, as regards this criticism, he

defended himself by saying, that if we were conscious of self as a cause, which Kant has explained just now, we must necessarily be conscious of ourselves as substance, as substance and cause are in this case identical. I hold, on the contrary, that we may be conscious of causation, or action, without knowing anything more of the substance which is the subject of the action. I hold the present case to be a very striking one of this fact. The ultimate appeal is, as I suppose, to each man's consciousness, and in this appeal I am confident the great majority of my readers will agree with the great majority of modern philosophers, who, whenever they have avoided amplifications of language, and stated the facts clearly, have plainly denied the immediate presentation of self as a substance.

CHAPTER X.

The Transcendental Analytic, Book II. The Analytic of Principles.

General Logic is built on a basis agreeing perfectly with the higher faculties of knowledge, which are *understanding*, [the faculty of] *judgment*, and *reason*. We have accordingly the doctrine of *concepts*, *judgments*, and *syllogisms* arranged on this plan. As this formal Logic merely discusses the form of thinking, it can even comprise in its Analytic the canon of the reason, for this faculty, apart from the peculiar nature of the cognitions used, must have its proceedings prescribed and fixed.

Transcendental Logic, which is limited to a definite content, viz., pure *a priori* cognitions, cannot follow in its wake. For it appears that the transcendental use of Reason is not objectively valid, and so not the *Logic of Truth*, or Analytic, but occupies, as a *Logic of illusion*, a separate place, under the title of *transcendental Dialectic*. It is then Understanding and Judging only that have a canon of their objectively valid use in Transcendental Logic. The

Analytic of Principles is simply a canon for the proper use of the *faculty of judgment*, and teaches it to apply to phenomena the Categories, which contain the *a priori* conditions for rules. Taking then the proper principles of the understanding for his subject, Kant indicates his scope by the title *Doctrine of the Faculty of Judging.*

INTRODUCTION. *Of the transcendental Faculty of Judgment generally.*[1]

If the understanding be the faculty of rules, the judging faculty is the power of *subsuming* under rules, or distinguishing whether a given case comes under the rule. General Logic cannot possibly give any rules for this faculty. For as Logic abstracts altogether from the *content of knowledge*, and adheres to the pure form only, were we to attempt to show generally what should come under its general rules, this could only be done by another general rule, and the application of *this* would raise the same difficulty. The faculty of judging is then a special

[1] The reader will observe that throughout this Chapter Kant uses the word 'judgment' in a sort of practical every-day sense, not merely as the general faculty of comparing representations. In this latter sense he stated above (p. 178), 'that judging and thinking were coextensive.' He now uses it as we do, when we speak of a 'man of judgment,' viz., a man who knows how to apply his principles, or bring (subsume) particular cases under the right principles. This ambiguity was first noticed by Dr. Toleken.

talent, which can be practised, but not instructed. It is, in fact, that mother-wit, which no schooling can replace, for even though we cram our minds with any quantity of rules derived from other sources, the faculty of using them must belong to ourselves naturally, and no learning can cure stupidity. But it is very useful to exercise this faculty by examples, especially as they seldom conform exactly to the rule, and so teach us to apply it in a wider sense; from this point of view they are specially requisite to men whose natural talent for judging is weak.

We have seen above that *general Logic* can prescribe no rules for the faculty of judgment. It is so very different a case with transcendental Logic, that it appears to be its special business to direct and secure the use of the pure understanding by fixed rules. For in obtaining extension for our field of knowledge *a priori*, or as *Doctrine*, to use Kant's word, philosophy appears ill equipped, and has done nothing; but as *Critick*, to prevent errors of judgment in the few pure concepts that we possess—in this negative duty it must exercise all its skill and acuteness.

But transcendental philosophy has this peculiarity, that beyond the rule (or better, the general condition of rules) given in the Categories, it can also show *a priori* the case, to which the rule should be applied. It shares this advantage with Mathematic alone of other sciences, because it treats of concepts

which are to refer *a priori* to objects; consequently its objective validity, as well as the general conditions under which objects can be given, in conformity with these Categories, can only be shown *a priori*. Were this not done, they would be mere logical forms, and not Categories. Our *transcendental theory of judging* contains two parts—first, the *Schematism*, treating of the sensuous condition, under which Categories must be used; secondly, the *Principles* of the pure understanding, or the synthetical judgments, which flow from the Categories under these conditions, and lie *a priori* at the basis of all the rest of our knowledge.

The Transcendental Theory of Judging, or Analytic of Principles. Chap. I.

Of the Schematism of the Pure Understanding.—Whenever we *subsume* an object under a concept, the two representations must be *homogeneous*, as a matter of course. Thus the concept of a plate is homogeneous with the purely Geometrical notion of a circle, for the roundness thought in the former, can be intuited in the latter. But the pure Categories are completely heterogeneous from all sensuous intuitions. How then can the latter be subsumed under the former, and how is, consequently, the *application* of the Categories to objects of sense possible? For surely none will assert that any Category, such as *Causality*, can be intuited in phe-

nomena and contained in them. Here then the necessity of the Theory of Judgment, or applicability of the *pure Categories* to experience becomes apparent. In other sciences, this divergence between the general concepts and their concrete representation does not exist. There must obviously be something intermediate, homogeneous on the one hand with the Category, on the other with the phenomenon, and this must make the application possible. This mediating representation must be *pure*, and yet not only *intellectual* but *sensuous*. We shall call it the *transcendental schema*.

We saw that the concept of the understanding produces pure synthetical unity of various parts generally. Now time, as the formal condition of the variety given in internal sense, and so of the combination of all our representations, also affords us an *a priori* multiplicity in pure intuition; that is to say, the (pure) times, in which a series of various representations are given and combined by the mind may themselves be regarded as an *a priori* multiplicity, combined, or combinable *a priori* into a pure unity. Therefore a transcendental *determination* of time must have this in common with the *Category* (which brings this time-determination into unity), that it is *universal*, and depends on an *a priori* rule. But, on the other hand, it is also in conformity with the *phenomenon*, inasmuch as time is contained in every empirical representation of va-

riety. Here then we have the schema we require. The deduction has already taught us that the Categories are only applicable to objects of experience, as distinguished from things *per se;* that they consequently must require modifications of our sensibility, and this implies that formal conditions of sense (especially internal sense) are also necessary, as a condition under which alone we can apply the Category to an object. This last condition is the schema of the Category, and the proceeding of the understanding as regards these schemata we call the *schematism* of the pure understanding.

The schema in itself is indeed, like the image, the product of our imagination, but also differs in not being an individual picture, as it merely aims at representing the general way in which the unity of intuition is produced. Thus I can place five points together thus ....., and they produce a picture of *one number* 5. But when I think of what *number in general* means, I have before me the peculiar way in which the imagination proceeds to form such an arrangement of points. 'When we represent to ourselves the general procedure of the imagination, in procuring an image for a concept, I call this the schema belonging to this concept.'

* The illustration used by Kant shows that he was a Conceptualist, as regards the object of the mind in part at least of its thinking concerning general ideas, as they were called by the schoolmen.

It also shows that, as usual, he took a deeper and fuller view of the mental state which was once the subject of such bitter controversy. Locke's abstract idea of a triangle, which had roused the ire and the laughter of so many critics, is here shown to be not only free from absurdity, but even the truest account of the matter contained in any previous philosophy. But Locke's fault had been to attend to the unimportant part of the process. It is the *act* of the mind in putting together the image of a triangle, not the completed *image*, which affords us the proper object in general thinking.[1] For the actual images are in every case different, and even inconsistent, but the act of making them in general, is one and the same in all cases. It is what Kant calls a 'unity of action.' 'In fact,' he says, 'not images, but schemata, lie at the basis of our pure sensuous concepts. No image could ever be adequate to the general concept of a triangle, as it cannot embrace right-angled, scalenon, &c. The schema of a triangle can exist in thought only, and means a rule of the synthesis of the imagination, when applied to pure objects in space.' The same is the case with empirical concepts. My notion (schema) of a dog means a rule followed by my imagination in drawing the general features of a certain quadruped, without confining myself to any particular figure.

[1] On this view of the schema as an act, cf. the *Critick*, pp. 110, 435.

This schematism of the understanding, as regards the pure form of objects, is a hidden craft in the secrets of the human mind, which we can hardly expect ever plainly to discover and to expound. But so much seems certain: the *image* is the product of the empirical working of the productive imagination; the *schema* of sensuous concepts, such as figures in space, is as it were a sketch (*monogram*) of the pure imagination *a priori*, through which alone images can be brought into agreement with the concept. The schema of a pure concept of the understanding (Category), on the contrary, can never be reduced to an image, but is only a pure synthesis, according to a rule of unity supplied and expressed by the Category. This schema is, of course, a transcendental product of imagination, affecting the determining of our internal sense generally, as to its form—Time. It produces that unity expressed by the concept, which is a phase of the transcendental unity of apperception. Let us proceed to illustrations.

The pure image of all quantities (*quanta*) in external sense is space, for all objects of the senses generally, it is time. But the pure *schema* of quantity [*quantitas*], as a Category, is *number*, or the successive addition of homogeneous units. The act of numbering is nothing but the unity of combining the variety of a homogeneous intuition; in fact, I generate time itself in the successive apprehending

of my intuition. Kant here means that the Category of unity is exemplified or imitated by the mind considering the perception in a single act, or moment of time, to indicate unity. The Category of Plurality is exemplified by the mind requiring several successive moments to apprehend a perception, of which the parts are separate but homogeneous, and therefore the several acts appear as separate units. Totality implies the adoption of a large unit, under which many smaller are combined.

Reality in the Category is that which corresponds to sensation generally, that of which the concept indicates existence in time, as opposed to Negation, or non-existence in time. Their opposition is therefore that of the same time full (of sensation) and empty. 'As time is only the form of intuition, or of objects as phenomena, that which in these phenomena corresponds to sensation is the transcendental matter of all objects, as things *per se*, in fact their *reality*.'[1] We must judge of this reality by the amount of sensation produced upon us. But every sensation has a degree, or quantity, by which it can affect our faculty of representation during the

[1] This statement, occurring in the first Edition, as well as the succeeding ones, is a strange way of preaching the absolute idealism which Schopenhauer and Fischer ascribe to Kant! He regards sensation here as directly suggesting something apart from our cognition, though we have no means of studying it save through our sensation.

same length of time, more or less, varying from the maximum of sensation down to its complete absence, or *negation.* Thus a continuous transition from reality to negation is possible, which enables us to regard every reality as a *quantum* (of sensation). The schema of a reality, in this sense, is its continuous and uniform generation in time, when we pass from total absence of sensation in time to some particular degree of sensation. As we before had several successive homogeneous perceptions in successive moments, giving us number, so we must here suppose several successive perceptions homogeneous in their character, but differing in the increasing intensity of the sensation they produce. Kant considers that we must conceive the maximum of sensation as made up of all the lesser degrees which we could apprehend successively in time. But as the sum of them is given to us in an equally short time as each of the lesser degrees, we come to know the difference between the same subdivision of time as either full or empty. So it is that an object which affects even three different senses together has more reality than an object which affects only one. The moment in which it affects us is a full time, and the fulness may be measured by three times of equal length, each filled by one of the sensations. The same fact is implied when we speak of one object being ten shades darker than another of the same kind. Quality is, after all, a quantity of reality.

'The schema of substance is the permanence of the real in time, or the representation of it, as the substratum of an empirical time-determination generally, which remains, while all else changes. Time does not elapse, but rather the existence of changeable things elapses in it.' Consequently substance, or the permanent in existence, is what corresponds in phenomena to time, itself unchangeable and permanent. It is therefore by substance alone that we can determine sequence and co-existence of phenomena in time.[1] The schema of Causality consists in the succession of various phenomena, so far as it is subject to a rule. The schema of community or reciprocal causation of substances as regards their accidents, is the necessary simultaneity of the determinations of both. The schema of possibility is the

[1] As he tells us afterwards that impenetrability is the empirical criterion of substance (p. 169, Ed. Bohn), we may take this as a specimen of a permanent reality (of sensation), which remains the same, and so enables us to determine changes in other qualities. So the chameleon remains a solid body while its colours change, and we accordingly talk of its substance remaining the same, while its accidents vary. But were there not a permanent phenomenon of some kind, corresponding to the general lapse of time, we should not know that other sensations occupied shorter time, and changed while the cause of them is conceived unchangeable. I may add, that these illustrations of the various schemata are developed and explained by the succeeding chapters on the Principles which embody them, and that it is impossible to make them clear to the reader till he has studied the theory of the Principles.

agreement of our synthesis of various representations with the conditions of time generally. For example, contradictory attributes can only exist in a thing successively, consequently possibility determines the existence of a thing at some time. The schema of actuality is its existence at a definite time; that of necessity its existence at all times.

We can now see the relation of all the schemata. That of quantity is the putting together (synthesis) of portions of time, in our successive apprehension of an object or objects. That of quality is the putting together of (feebler) sensations in time, or filling time with them. The schema of relation is the attitude of perceptions to one another in all time (either as transient and permanent, as necessarily consequent, or as necessarily simultaneous). The schema of modality represents to us time itself, regarded generally as the correlate for determining an object, when we consider how or whether it belongs to time. The schemata affect therefore respectively *a priori*, and according to rules, 1. the succession of time; 2. the content of time; 3. the order of time; and 4. the sum total (*Inbegriff*) of time, as regards all possible phenomena.

Kant concludes the discussion by reiterating what he had said above (§§ 22–3), as to the use of the Categories being only empirical, and that they have no meaning except as applied to objects of sense. The discussion of the schematism has shown

this more plainly, in that it proves that the transcendental synthesis of the imagination is wholly employed in *time* and its determinations. The schema is only the sensuous concept of an object in accordance with the Category. If we lay aside this restriction, the Category preserves nothing but a logical meaning, and can determine no object, not to say a thing *per se.*

It will tend to put this schematism as well as the deduction of the Categories in a clearer light, if we consider Schopenhauer's criticism, which at first sight appears somewhat plausible. Kant's plan (he tells us) was to find for every empirical[1] function of the understanding its transcendental parallel. Now when we use a very abstract empirical concept symbolically (as Leibnitz would say), we often glance back towards the empirical intuitions from which we have obtained the concept, and we call up in imagination a sort of imperfect image momentarily, merely to assure ourselves that our thinking is possible in intuition—a psychological fact which any one will discover for himself easily by reflection. This fugitive phantasm, intermediate between abstract concepts, and clear intuitions, Kant called a schema, and thence concluded that between the pure intuitive faculty of sensibility and the pure faculty of thought there are similar schemata of the pure

[1] He should have said *logical,* when he refers to Kant.

Categories. But what is the use of this schematism in empirical thinking? Merely to secure that the *content* of the concept be correct. The matter has been abstracted from empirical intuition: we refer to it occasionally, to make sure that our thinking is about *reality*. But Schopenhauer objects that the pure *a priori* concepts come from within, and are not derived from intuition; hence, such concepts cannot be referred to any intuition to guarantee their reality. It was, then, upon the misapplication of this psychological fact above mentioned, that Kant based his elaborate schematism of the pure understanding.

Although Schopenhauer's criticism is unsound, it has been here stated, as the refutation of it will bring the real doctrine of Kant into a clearer light. Schopenhauer has well described the 'abstract idea' of Locke as a fugitive phantasm, which gives reality to our symbolical concepts. What is the exact office of this schema? To insure to us that our (empirical) concepts are applicable in experience; to show us that they are not merely logically possible, but objectively real. Now, in empirical concepts this requirement is satisfied, if the content of the concept answers to the schema, as the law of contradiction secures its possibility, or logical correctness. But all our objects of experience stand not only under representative concepts (genus, species, &c.), but also under assertative concepts (substance, cause, &c.).

These are the Categories, which were already proved to be part of the (transcendental) content of representations. Hence, such concepts must be shown to be applicable to objects of experience just as generic concepts are. These latter establish their claim by means of the schema just mentioned—how can the Categories do so?

Let us look back to the deduction of the Categories. All phenomena were found to agree in one point at all events—they must be *my* phenomena. It is this unity which makes us speak of Nature as a unity, and yet as consisting of many lesser units, called objects. For there is no unity in our experience except what is imposed by our minds. Accordingly this highest and most general synthetical unity of consciousness acts upon phenomena by imposing upon them various phases of its unity, various lesser unities, all dependent upon the highest synthetical unity. These lesser unities are the Categories. They are imposed by the mind upon phenomena, which thus become objects. But how? The sensations which are the component elements of the object, being received into the mind successively, are reproduced, but not simply; the imagination moulds them, and so produces, not only the received phenomena, but also the form of a concept along with them; so that, owing to this addition (which is the transcendental content of the representation), that faculty is properly called *productive*. But what is the form added to the received

elements by the imagination and understanding in this its action? Surely no additional sensation, no heterogenous intellectual something, called a Category. The imagination can only arrange or regulate the relations to *time* of all our sensations. This is the point upon which the imagination fixes; for all our thoughts whatsoever must be in time. The Categories must be thought under this condition. The Categories then are imitated (so to speak) or exemplified in time-determinations, which are imposed by the productive imagination upon phenomena. Thus the pure Category of substance is that which can only be subject—and not predicate. An image of such a concept is impossible; but the nearest sensuous representation we can get is something which is absolutely permanent in time. This, then, is the schema under which the imagination brings certain phenomena, which are accordingly declared to be substance, and it is only by means of such schemata that we can assure ourselves that our thought is applicable to experience. In Mr. Monck's briefer words:—Sense or experience has its formal as well as its material conditions. The office of the schema of an empirical concept is to show that the material part is right; that of the schema of a pure concept to show that the formal part is so also. Such is, in brief, the general notion of the schematism, which follows necessarily from the productive imagination, and which forms one of the most remarkable claims of Kant for originality and acuteness.

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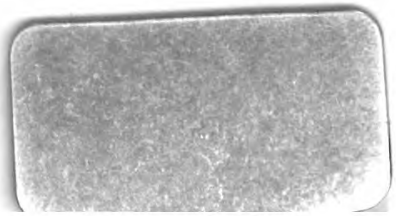
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