

KANT (2): THE PROBLEMS OF THE FIRST CRITIQUE

The general problem of metaphysics—The problem of a priori knowledge—The divisions of this problem—Kant's Copernican revolution—Sensibility, understanding, reason, and the structure of the first Critique—The significance of the first Critique in the context of the general problem of Kant's philosophy.

I. IF we look at the prefaces to the first and second editions of the *Critique of Pure Reason* and at the foreword to and first sections of the *Prolegomena to Any Future Metaphysics*,¹ we find the author placing an obvious emphasis on the problem of metaphysics. Is metaphysics possible or not? Obviously, the question is not whether it is possible to write metaphysical treatises or to indulge in metaphysical speculation. The question is whether metaphysics is capable of extending our knowledge of reality. For Kant, the chief problems of metaphysics are God, freedom and immortality. We can therefore express the question in this way. Is metaphysics capable of giving us sure knowledge of the existence and nature of God, of human freedom, and of the existence in man of a spiritual, immortal soul?

A question of this sort clearly presupposes a doubt. And there is, in Kant's opinion, abundant reason for such initial doubt, that is, for raising the problem of metaphysics. Time was when metaphysics 'was called the queen of all the sciences; and if one takes the will for the deed, she certainly deserved this title of honour on account of the outstanding importance of her subject-matter'.²

¹ References to Kant's writings in Chapters XI–XIII are to be interpreted as follows. *A* denotes the first edition and *B* the second edition of the *Critique of Pure Reason*. These will be found respectively in Volumes IV and III of the critical edition of Kant's works edited by the Prussian Academy of Sciences (see Bibliography). The numbers placed after *A* and *B* refer to sections as given in this edition (the sections corresponding to pagination in the original German editions). For the translation of passages I am responsible. But as the great majority of passages quoted in translation are taken from *B*, the references are generally valid for Professor N. Kemp Smith's translation of *B* (see Bibliography), as this translation embodies the division into sections referred to above. (Professor Kemp Smith's translation also contains the preface to *A*, as well as the Deduction of the Categories as given in *A*.)

Prolog. denotes *Prolegomena to Any Future Metaphysics*, which is contained in Volume IV of the critical German edition. Numbers following *Prolog.* refer to sections in the German edition. This division into sections is reproduced in, for example, the translation by J. P. Mahaffy and J. H. Bernard (see Bibliography).

² *A*, VIII.

Kant never denied the importance of the main themes of which metaphysics treats. But now, he observes, metaphysics has fallen into disrepute. And this is easily understandable. Mathematics and the natural sciences have advanced, and there is in these fields a great area of generally accepted knowledge. Nobody seriously questions this fact. But metaphysics appears to be an arena for endless disputes. 'One can point to no single book, as one can point to a Euclid, and say: This is metaphysics, here you will find the noblest object of this science, the knowledge of a supreme Being and of a future world, provided by the principles of pure reason.'¹ The fact of the matter is that metaphysics, unlike physics, has not found any sure scientific method the application of which will enable it to solve its problems. And this leads us to ask, 'why is it that here no sure path of science has yet been found? Is it perhaps impossible to find one?'²

The inconclusiveness of metaphysics, its inability hitherto to find a reliable method which will lead to certain conclusions, its constant tendency to retrace its steps and to start all over again; such characteristics have helped to produce a widespread indifference towards metaphysics and its claims. True, in one sense this indifference is unjustified; for it is 'vain to profess indifference in regard to such inquiries, the objects of which cannot be a matter of indifference to human nature'.³ Moreover, those who profess to be indifferentists are prone to make metaphysical pronouncements of their own, even if they are unaware of the fact. At the same time this indifference is not, in Kant's view, the fruit of mere levity of mind: rather is it the expression of a contemporary maturity of judgment which refuses to be satisfied with illusory knowledge or pseudo-science. It should serve, therefore, as a stimulus to undertake a critical investigation of metaphysics, summoning the latter before the tribunal of reason.

What form must this critical investigation take? To be in a position to answer this question we must recall what metaphysics means for Kant. As we saw in the last chapter, he disagreed with Locke's theory that all our concepts are ultimately derived from experience. He did not, indeed, accept the opposite theory of innate ideas. But at the same time he believed that there are concepts and principles which the reason derives from within itself on the occasion of experience. A child is not born with, for example, an idea of causality. But on the occasion of experience its reason

¹ *Proleg.*, 4.

² *B.*, xv.

³ *A.*, x.

derives the concept from within itself. It is an *a priori* concept in the sense that it is not derived from experience but is applied to and in a sense governs experience. There are, therefore, *a priori* concepts and principles which are grounded in the mind's own structure. These concepts are 'pure', in the sense that they are, of themselves, empty of all empirical content or material. Now, the metaphysicians have assumed that reason can apply these concepts and principles so as to apprehend supersensible realities and things-in-themselves, that is, not merely as they appear to us. There have thus arisen the various systems of dogmatic metaphysics. But the assumption was over-hasty. We cannot take it for granted that the *a priori* concepts and principles of the reason can be used to transcend experience; that is, to know realities which are not given in experience. First of all we must undertake a critical investigation into the powers of the pure reason itself. This is the task which the dogmatic philosophers neglected, dogmatism being described as the assumption that it is possible to make progress in knowledge simply on the basis of pure philosophical concepts by employing principles which reason has long been in the habit of employing, 'without having inquired in what way and with what right reason has arrived at these principles. Dogmatism is thus the dogmatic procedure of the pure reason without previous criticism of its own powers.'¹ It is this criticism which Kant proposes to undertake.

The tribunal before which metaphysics is to be brought is, therefore, 'nothing else than the critical investigation (*Kritik*) of pure reason itself', which means 'a critical inquiry into the faculty of reason with reference to all the cognitions to which it may strive to attain independently of all experience'.² The question is, then, 'what and how much can understanding and reason³ know, apart from all experience'.⁴ Let us assume with Kant that speculative metaphysics is a non-empirical science (or alleged science) which claims to transcend experience, attaining to a knowledge of purely intelligible (non-sensible) realities by means of *a priori* concepts and principles. Given this view of metaphysics, the validity of its claim will obviously be determined by the answer to the question, what and how much can the mind know apart from experience.

To answer this question a critical inquiry into the faculty of

¹ B, xxxv.

² The distinction between understanding and reason can be passed over for the moment. It will be explained later.

³ A, xii.

⁴ A, xvii.

reason, as Kant puts it, is required. What this means will, I hope, become clearer during the course of this chapter. But it may be as well to point out at once that Kant is not referring to a psychological inquiry into the nature of reason considered as a psychical entity; that is, with reason as an object among objects. He is concerned with reason in regard to the *a priori* cognition which it makes possible. That is to say, he is concerned with the pure conditions in the human subject as such for knowing objects. Such an inquiry is termed 'transcendental'.

One of the main tasks of the *Critique of Pure Reason* is to show in a systematic manner what these conditions are. And it is important to understand what sort of conditions Kant is talking about. There are obviously empirical conditions for perceiving things and for learning truths. For instance, I cannot see things in complete darkness; light is required for vision. And there are many scientific truths which cannot be discovered without the aid of instruments. Further, there are empirical conditions which are subjective, in the sense that they are conditions on the part of the knowing subject himself. I cannot see things if I am suffering from certain diseases of the eye in an advanced state. And there are obviously people who cannot, practically speaking, understand subjects which others understand with comparative ease. But Kant is not concerned with empirical conditions: he is concerned with the non-empirical or 'pure' conditions of human knowledge as such. In other words, he is concerned with the formal elements of pure consciousness. Tom, Dick and Harry, namely particular people with their particular limitations, do not enter into the matter at all. Or, rather, they enter into it only as exemplifying the human subject as such. That is to say, conditions of knowledge which hold for the human subject as such will obviously hold for Tom, Dick and Harry. But it is with the necessary conditions for knowing objects that Kant is concerned, not with variable empirical conditions. And if the conditions turn out to be such that realities transcending sense-experience cannot be objects of knowledge, the claims of speculative metaphysics will have been shown to be hollow and vain.

Now, Kant mentions Wolff with respect as 'the greatest of all dogmatic philosophers'.¹ And it is clear that when he speaks about dogmatic metaphysics, he has in mind principally, though not exclusively, the Leibniz-Wolffian system. We may be inclined to

¹ B, xxxvi.

the term 'metaphysics' is used to mean pretended or illusory knowledge of supersensible realities, one of the tasks of the critical philosophy is to expose the hollowness of the claims made on behalf of this pseudo-science. Finally, we must distinguish between metaphysics as a natural disposition and metaphysics considered as a science. The mind has a natural tendency to raise such problems as those of God and immortality; and though we should try to understand why this is the case, Kant neither wishes to eradicate the tendency nor believes that it is possible to do so, even if it were desirable. Metaphysics as a natural disposition is actual, and therefore it is obviously possible. But metaphysics as a science, if we mean by this a scientific knowledge of supersensible beings, has never, according to Kant, been a reality. For all the alleged demonstrations hitherto produced can be shown to be invalid, that is, pseudo-demonstrations. Hence we can very properly ask whether metaphysics, considered as a science, is possible.

All this may sound very complicated and confusing. But it is not so confusing in practice as it sounds when briefly summarized. In the first place Kant himself refers to the different uses of the term 'metaphysics'.¹ In the second place the context makes it clear in what sense Kant is using the term in a particular passage. But the fact that the term bears more than one meaning in his writings is of some importance. For if one is ignorant of it, one may rashly conclude that he contradicts himself, admitting metaphysics in one place, rejecting it in another, when there is perhaps really no contradiction at all.

2. But though the possibility of metaphysics as a science (that is, as a science with objects of its own, transcending sense-experience) is for Kant an important problem, it is only part of the general problem considered in the *Critique of Pure Reason*. This general problem may be said to be that of the possibility of a *priori* knowledge.

Now, by a *priori* knowledge Kant does not mean knowledge which is relatively *a priori*; that is, in relation to this or that experience or to this or that kind of experience. If someone puts a garment too near the fire so that it is singed or burned, we may say that he might have known *a priori* that this would happen. That is to say, on the basis of past experience the man might have known antecedently to his action what its effect would be. He

¹ See, for example, B 869-70.

need not have waited to see what would happen. But this antecedent knowledge would be *a priori* only in relation to a particular experience. And it is not of such relatively *a priori* knowledge that Kant is thinking. He is thinking of knowledge which is *a priori* in relation to all experience.

But here we have to be careful not to draw the conclusion that Kant is thinking about innate ideas, supposed to be present in the human mind before experience in a temporal sense of the word 'before'. Pure *a priori* knowledge does not mean knowledge which is explicitly present in the mind before it has begun to experience anything at all: it means knowledge which is underived from experience, even if it makes its appearance as what we would ordinarily call 'knowledge' only on the occasion of experience. Consider the following famous and often-quoted statements. 'That all our knowledge begins with experience there can be no doubt. . . . But though all our knowledge begins *with* experience, it does not follow that it all arises *out of* experience.'¹ Kant agrees with the empiricists, such as Locke, to the extent of saying that 'all our knowledge begins with experience'. Our knowledge, he thinks, must begin with experience because the cognitive faculty, as he puts it, requires to be brought into exercise by our senses being affected by objects. Given sensations, the raw material of experience, the mind can set to work. At the same time, however, even if no knowledge is temporally antecedent to experience, it is possible that the cognitive faculty supplies *a priori* elements from within itself on the occasion of sense-impressions. In this sense the *a priori* elements would be underived from experience.

Now, why should Kant think that it is possible for there to be any *a priori* knowledge at all? The answer is that he was convinced that there evidently is such knowledge. He agreed with David Hume that we cannot derive necessity and strict universality² from experience. It follows, therefore, that 'necessity and strict universality are sure marks of *a priori* knowledge and are inseparably connected with one another'.³ And it is easy to show that we possess knowledge which finds expression in necessary and universal judgments. 'If one desires an example from the

¹ B, 1.

² Universality which is based on induction is not, for Kant, strict but 'assumed and comparative' and admits of exceptions. If, on the basis of my personal experience, I say that human beings do not live more than a hundred years, the universality of the judgment is 'assumed'. Strict universality admits of no possible exception.

³ B, 4.

sciences, one needs only to look at any proposition in mathematics. If one desires an example from the commonest operations of the understanding, the proposition that every change must have a cause can serve one's purposes.¹ This last proposition is, in Kant's terminology, 'impure' in the sense that the concept of change is derived from experience. But the proposition is none the less *a priori*, even if it is not an example of pure *a priori* knowledge. For it is a necessary and strictly universal judgment.

There is, therefore, a considerable area of *a priori* knowledge. Kant acknowledged his debt to Hume. 'I freely confess that it was the thought of David Hume which many years ago first interrupted my dogmatic slumbers and gave an entirely new direction to my inquiries in the field of speculative philosophy.'² But though Kant had been convinced by Hume's discussion of the principle of causality that the element of necessity in the judgment cannot be justified on purely empiricist lines, he refused to accept Hume's psychological account of its origin in terms of the association of ideas. If I say that every event must have a cause, my judgment expresses *a priori* knowledge: it is not simply the expression of an habitual expectation mechanically produced by the association of ideas. The necessity, Kant insists, is not 'purely subjective';³ the dependence of any event or happening or change on a cause is known, and it is known *a priori*. That is to say, my judgment is not simply a generalization from my experience of particular cases; nor does it stand in need of experiential confirmation before its truth can be known. Though, therefore, Hume was right in saying that a necessary relation between event and cause is not given in experience, his psychological explanation of the origin of the idea of necessity was inadequate. We have here an instance of *a priori* knowledge. But it is by no means the only instance. Hume may have devoted his attention principally to the causal relation; but Kant 'soon found that the concept of connection between cause and effect is by no means the only one through which the understanding thinks connections between things *a priori*'.⁴ There is, therefore, a considerable area of *a priori* knowledge.

But if there certainly is *a priori* knowledge, why should Kant ask how it is possible? For if it is actual, it is obviously possible. The answer is, of course, that in the case of those fields (pure mathematics and pure physics) where, Kant is convinced, there

¹ B, 4-5.

² Prol., Foreword.

³ B, 5.

⁴ Prol., Foreword.

evidently is *a priori* knowledge, the question is not how this knowledge is *possible* (better, *whether* it is possible) but *how* it is possible. Granted its possibility (for it is actual), how is it that it is possible? How is it that we can have the *a priori* knowledge which we have, for example, in mathematics?

In the case of speculative metaphysics, however, the claim to possess *a priori* knowledge is suspect. Here, therefore, we ask whether it is possible rather than how it is possible. If metaphysics provides us with knowledge of God or of immortality, for instance, such knowledge must, on Kant's view of metaphysics, be *a priori*. It must be independent of experience, in the sense that it does not logically depend on purely empirical judgments. But does speculative metaphysics provide us with such knowledge? Is it even capable in principle of doing so?

3. We must now try to make these problems more precise. And to do so we must refer to Kant's distinction between different types of judgment.

In the first place we must distinguish between analytic and synthetic judgments. Analytic judgments are those in which the predicate is contained, at least implicitly, in the concept of the subject. They are said to be 'explicative judgments' (*Erläuterungsurteile*)¹ because the predicate does not add to the concept of the subject anything which is not already contained in it, explicitly or implicitly. And their truth depends on the law of contradiction. We cannot deny the proposition without involving ourselves in logical contradiction. Kant cites as an example 'all bodies are extended'. For the idea of extension is contained in the idea of body. Synthetic judgments, however, affirm or deny of a subject a predicate which is not contained in the concept of the subject. They are called, therefore, 'ampliative' or 'augmentative judgments' (*Erweiterungsurteile*),² because they add something to the concept of the subject. According to Kant, 'all bodies are heavy' is an example of a synthetic judgment; for the idea of weight or heaviness is not contained in the concept of body as such.

We must now make a further distinction within the general class of synthetic judgments. In all synthetic judgments, as we have seen, something is added to the concept of the subject. A connection is affirmed (to restrict our attention to the affirmative judgment) between predicate and subject, but the predicate cannot be got out of the subject, so to speak, by mere analysis.

B, 11; A, 7.

¹ *Ibid.*

Now, this connection may be purely factual and contingent; it is then given only in and through experience. And when this is the case, the judgment is synthetic *a posteriori*. Take the proposition, 'All members of tribe X are short', and let us suppose that this is a true proposition. It is synthetic: for we cannot elicit the idea of shortness by mere analysis from the concept of membership of tribe X.¹ But the connection between shortness and membership of the tribe is given only in and through experience; and the judgment is simply the result of a series of observations. Its universality is not strict but assumed and comparative. Even if there does not happen to be at the moment any member of the tribe who is not short, there may be one or more tall members in the future. We cannot know *a priori* that all members are short: it is simply a matter of contingent fact.

But, according to Kant, there is another class of synthetic propositions, in which the connection between predicate and subject, though not knowable by mere analysis of the concept of the subject, is none the less necessary and strictly universal. These are called synthetic *a priori* propositions. Kant gives us an example. 'Everything which happens has its cause.'² The proposition is synthetic because the predicate, having a cause, is not contained in the concept of what happens, that is, of an event. It is an ampliative, not an explicative judgment. But it is at the same time *a priori*. For it is characterized by necessity and strict universality, the marks of *a priori* judgments. The proposition, 'everything which happens has its cause', does not mean that, so far as our experience goes, all events have had causes and that it is reasonable to expect, until experience shows otherwise, that future events also will have causes. It means that every event, without any possible exception, will have a cause. The proposition is, of course, dependent on experience in one sense, namely that it is by experience that we become acquainted with things happening, with events. But the connection between predicate and subject is given *a priori*. It is not a mere generalization from experience, reached by induction; nor does it stand in need of experiential confirmation. We know *a priori* or in advance that every event must have a cause; and the observation of such a connection in

¹ The judgment could, of course, be turned into an analytic judgment by so defining membership of the tribe that it includes the idea of shortness. But then we should be moving in the realm of verbal definitions and their implications; we should not be dealing with empirical reality, with the tribe as it actually exists.

² B, 13; A, 9.

the case of events falling within the field of an experience adds nothing to the certainty of the judgment.

It would be out of place, I think, to interrupt the course of Kant's problematic by discussing the highly controversial question of synthetic *a priori* propositions. But for the benefit of any reader who may not already be well aware of the fact, it is only fitting to note that the existence of synthetic *a priori* propositions is widely challenged by modern logicians, especially, of course, by empiricists and positivists. Their approach to the matter is rather different from that of Kant, but I do not wish to dwell upon this theme. The main point is that while the general distinction between analytic and synthetic propositions causes no difficulty, many philosophers refuse to admit that there are any synthetic propositions which are *a priori*. If a proposition is necessary, it is analytic. If a proposition is not analytic, it is synthetic *a posteriori*, to use Kant's language. In other words, the empiricist contention is that if a proposition does more than analyse the meanings of terms or illustrate the meanings of symbols, if, that is to say, it gives us information about non-linguistic reality, the connection between predicate and subject is not, and cannot be, necessary. In fine, all synthetic propositions are, in Kant's terminology, *a posteriori*. A proposition whose truth rests simply on the principle of contradiction is, as Kant said, analytic. A proposition whose truth does not rest on the principle of contradiction cannot be necessarily true. There is no room for a third class of propositions besides analytic propositions on the one hand and empirical propositions (corresponding to Kant's synthetic *a posteriori* judgments) on the other.

Kant, however, was convinced that there are synthetic *a priori* propositions; that is, propositions which are not merely 'explicative' but which extend our knowledge of reality and which are at the same time *a priori* (that is, necessary and strictly universal). The general problem, therefore, how is *a priori* cognition possible, can be expressed thus. How are synthetic *a priori* propositions possible? How is it that we can know anything at all about reality *a priori*? But this general question can be split up into several more particular questions by considering where synthetic *a priori* propositions are to be found.

They are to be found, in the first place, in mathematics. 'First of all it must be noted that mathematical propositions proper are always judgments *a priori* and not empirical, because they include

the concept of necessity, which cannot be derived from experience.¹ The proposition $7 + 5 = 12$ is not an empirical generalization admitting of possible exceptions. It is a necessary proposition. At the same time, however, this proposition, according to Kant, is not analytic in the sense described above: it is synthetic. The concept of twelve is not obtained, and cannot be obtained, by mere analysis of the idea of the union between seven and five. For this idea does not of itself imply the concept of twelve as the particular number resulting from the union. We cannot arrive at the notion of 12 except with the aid of intuition. 'The arithmetical proposition is therefore always synthetic.'² That is to say, it is synthetic *a priori*; for, as we have seen, it is a necessary proposition and so cannot be synthetic *a posteriori*.

Similarly, the propositions of pure geometry are also synthetic *a priori* propositions. For instance, 'that a straight line between two points is the shortest, is a synthetic proposition. For my concept of *straight* contains no notion of quantity, but only of quality. The concept of the *shortest* is thus wholly an addition, and it cannot be derived by any analysis from the concept of a straight line. Intuition must therefore lend its aid here, by means of which alone is this synthesis possible.'³ But besides being synthetic the proposition is necessary, and so *a priori*. It is not an empirical generalization.

Geometers, Kant remarks, can make use of some analytical propositions; but he insists that all the propositions of pure mathematics proper are synthetic *a priori* propositions. Pure mathematics is not for him, as it was for Leibniz, a simply analytic science, depending on the principle of contradiction: it is constructional in character. Something more will be said in the next chapter about Kant's conception of mathematics, when we treat of his theory of space and time. Meanwhile it is sufficient to note the question which arises from his doctrine that mathematical propositions are synthetic *a priori* propositions; namely how is pure mathematical science possible? We certainly do know mathematical truths *a priori*. But how is it possible to do so?

In the second place, synthetic *a priori* propositions are also found in physics. Take, for instance, the proposition, 'in all changes of the corporeal (material) world the quantity of matter remains unchanged'. This proposition, according to Kant, is necessary and therefore *a priori*. But it is also synthetic. For in the

¹ B, 14.² B, 16.³ *Ibid.*

concept of matter we do not think its permanence, but merely its presence in space, which it fills. Physics in general, of course, does not consist simply of synthetic *a priori* propositions. But 'natural science (physics) contains within itself synthetic *a priori* judgments as principles'.¹ And if we call the complex of these principles pure natural science or pure physics, the question arises, 'How is pure natural science or physics possible?' We possess *a priori* knowledge in this sphere. But how is it possible for us to possess it?

Kant believed that there are also synthetic *a priori* propositions in morals. But this subject can be left to the chapter on his ethical theory, as we are treating here of the problems raised and discussed in the *Critique of Pure Reason*. We come, therefore, to the subject of metaphysics. And if we consider metaphysics, we find that it does not aim simply at analysing concepts. It contains, indeed, analytic propositions; but they are not, properly speaking, metaphysical propositions. Metaphysics aims at extending our knowledge of reality. Its propositions must, therefore, be synthetic. At the same time, if it is not (and it is not) an empirical science, its propositions must be *a priori*. It follows, therefore, that if metaphysics is possible, it must consist of synthetic *a priori* propositions. 'And so metaphysics, according to its aim at least, consists simply of synthetic *a priori* propositions.'² As an example Kant cites the proposition, 'the world must have a first beginning'.³

But, as we have seen, the claim of metaphysics to be a science is in doubt. The question, therefore, is not so much *how* metaphysics as a science is possible as *whether* it is possible. At this point, however, we must refer to a distinction which we have already made, the distinction between metaphysics as a natural disposition and metaphysics as a science. As Kant believes that the human reason is naturally impelled to raise problems which cannot be answered empirically, he can quite properly ask how metaphysics, considered as a natural disposition, is possible. But inasmuch as he doubts whether the claim of metaphysics to constitute a science, capable of answering its own problems, is justified, the question here is really whether metaphysics considered as a science is possible.

We are faced, therefore, with four questions. First, how is pure mathematical science possible? Secondly, how is pure natural science or pure physics possible? Thirdly, how is metaphysics,

¹ B, 17.

² B, 18.

³ *Ibid.*

considered as a natural disposition, possible? Fourthly, is metaphysics, considered as a science, possible? Kant treats of these questions in the *Critique of Pure Reason*.

4. If we consider the general question, how is *a priori* knowledge possible or how are synthetic *a priori* judgments possible, and if at the same time we bear in mind Kant's agreement with Hume concerning the impossibility of deriving necessity and strict universality from empirical data, we can see how difficult it would be for him to maintain that knowledge consists simply in the conformity of the mind to its objects. The reason for this is obvious. If, to know objects, the mind must conform itself to them, and if at the same time it cannot find in these objects, considered as empirically given, necessary connections, it becomes impossible to explain how we can make necessary and strictly universal judgments which are as a matter of fact verified and which, as we know in advance or *a priori*, must always be verified. It is not merely that we find, for instance, that experienced events have causes: we also know in advance that every event must have a cause. But if we reduce experience to the merely given, we cannot discover there a necessary causal relation. It is thus impossible to explain our knowledge that every event must have a cause on the hypothesis that knowledge consists simply in the mind's conforming itself to objects.

Kant therefore suggested another hypothesis. 'Hitherto it has been assumed that all our knowledge must conform to objects. But all attempts to ascertain anything about them *a priori* by concepts, and thus to extend our knowledge, came to nothing on this assumption. Let us try, then, whether we may not make better progress in the tasks of metaphysics if we assume that objects must conform to our knowledge. This at all events accords better with the possibility which we are seeking, namely of a knowledge of objects *a priori*, which would determine something about them before they are given to us.'¹

This hypothesis, Kant observes, is analogous to that proposed by Copernicus. The latter saw that though the sun appears to move across the earth from east to west, we cannot justifiably conclude from this that the earth is fixed and that the sun moves round a fixed earth, for the very good reason that the observed movement of the sun would be precisely the same (that is to say, the phenomena would be precisely what they are) if it were the earth which

¹ B, xvi.

was moving round the sun, and the human observer with it. The immediate phenomena would be the same on either hypothesis. The question is whether there are not astronomical phenomena which can only be explained on the heliocentric hypothesis, or which at any rate are explained better and more economically on the heliocentric than on the geocentric hypothesis. And subsequent astronomical investigation showed that this is indeed the case. In an analogous manner, Kant suggests, empirical reality would remain what it is even on the hypothesis that for objects to be known (that is, for them to *be* objects, if we mean by 'object' an object of knowledge) they must conform to the mind rather than the other way about. And if *a priori* knowledge can be explained on the new but not on the old hypothesis, this is obviously an argument in favour of the former.

Kant's 'Copernican revolution' does not imply the view that reality can be reduced to the human mind and its ideas. He is not suggesting that the human mind creates things, as far as their existence is concerned, by thinking them. What he is suggesting is that we cannot know things, that they cannot be objects of knowledge for us, except in so far as they are subjected to certain *a priori* conditions of knowledge on the part of the subject. If we assume that the human mind is purely passive in knowledge, we cannot explain the *a priori* knowledge which we undoubtedly possess. Let us assume, therefore, that the mind is active. This activity does not mean creation of beings out of nothing. It means rather that the mind imposes, as it were, on the ultimate material of experience its own forms of cognition, determined by the structure of human sensibility and understanding, and that things cannot be known except through the medium of these forms. But if we speak of the mind imposing its own cognitive forms on the raw material, so to speak, of knowledge, this must not be taken to mean that the human subject does this deliberately, consciously and of set purpose. The object as given to conscious experience, the object *about* which we think (a tree, for instance), is already subjected to those cognitive forms which the human subject imposes by a natural necessity, because it is what it is; that is, because of its natural structure as a knowing subject. The cognitive forms thus determine the possibility of objects, if 'object' is taken to refer to object of knowledge precisely as such. If the word were taken to refer to things in themselves, that is, to things as they exist apart from any relation to the knowing

subject, we could not, of course, say that they are determined by the human mind.

Perhaps the matter can be made a little clearer by reverting to the admittedly crude illustration of a man with red-tinted spectacles. On the one hand it is obvious that the man who sees the world as red because he is wearing red-tinted spectacles does not create the things which he sees in the sense in which God is Creator. Unless there existed things which affected him, that is, which stimulated his power of vision, he would not see anything at all. On the other hand nothing could be seen by him, that is, nothing could be for him an object of vision unless it were seen as red. At the same time, to make the analogy at all applicable, we must add the following important point. A man who puts on red-tinted spectacles does so deliberately: it is by his own choice that he sees things as red. We have to imagine, therefore, a man who is born with his power of vision so constituted that he sees all things as red. The world presented to him in experience is then a red world. This is really the point of departure for his reflection. Two hypotheses are then possible. It may be that everything is red. Or it may be that things have different colours,¹ but that they appear as red because of some subjective factor (as is, indeed, the case in the analogy). Spontaneously, the man would naturally embrace the first hypothesis. But it may be that in the course of time he finds a difficulty in explaining certain facts on this hypothesis. Thus he may be led to envisage and consider the alternative hypothesis. And if he finds that certain facts can be explained on this second hypothesis which cannot be explained on the hypothesis that all things are really red, he will embrace the second. He will never, indeed, be able to see the 'real' colours of things: appearances will be the same for him after his change of hypothesis as before, just as the apparent movement of the sun is precisely the same for the man who accepts the heliocentric hypothesis as it is for the man who accepts the geocentric hypothesis. But he will know why things appear as they do. The man who accepts the heliocentric hypothesis will know that the apparent movement of the sun round the earth is due to the earth's movement and to his own with it. The man who sees all things as red will have reason to suppose that this appearance of things is due to a condition in himself. Analogously, the man who accepts

¹ For purposes of this analogy I must be allowed to use ordinary everyday language. It is obviously an analogy or illustration, not a considered statement about the ontological status of colours.

Kant's 'Copernican revolution' will have reason to believe, let it be assumed, that certain ways in which things appear to him (as spatially co-ordinated, for instance, and as connected with one another by necessary causal relations) are due to subjective *a priori* conditions of knowledge in himself. He will not, indeed, be able to know things apart from their subjection to these *a priori* conditions or forms; but he will know why the empirical world is what it is for his consciousness.

We have already noted Kant's reference in his foreword to the *Prolegomena* to Hume's influence on his thought. In the preface to the second edition of the *Critique of Pure Reason* he draws attention to the influence of mathematics and physics in suggesting to him the idea of his 'Copernican revolution'. In mathematics a revolution must have occurred at a very early stage. Whoever the Greek may have been who first demonstrated the properties of the isosceles triangle, a new light must have flashed upon his mind. For he saw that it was not sufficient to contemplate either the visible diagram of the triangle or the idea of it in his mind. He had to demonstrate the properties of the triangle by a process of active construction. And, in general, mathematics became a science only when it became constructional in accordance with *a priori* concepts. As for physics, the revolution in this sphere came at a much later date. With the experiments of Galileo, Torricelli and others a new light broke upon physicists. They understood at last that though the scientist must, indeed, approach Nature to learn from her, he must not do so simply in the spirit of a pupil. Rather must he approach Nature as a judge, compelling her to answer the questions which he proposes, as a judge insists on witnesses answering the questions proposed to them according to a plan. He must come to Nature with principles in one hand and experiment in the other and make her answer questions proposed according to his design or purpose. He must not allow himself simply to follow her about like a child in leading-strings. It was only when physicists saw that Nature must be made to conform, as it were, to their preconceived designs¹ that real progress in the science became possible. And these revolutions in mathematics and physics suggest that we may possibly get along better in metaphysics if we assume that objects must conform to

¹ Obviously, Kant does not envisage the physicist as simply reading preconceived theories into Nature. He is thinking of the process of hypothesis, deduction and controlled experiment, in which the physicist is clearly no mere passive recipient of impressions from Nature.

the mind rather than the other way round. As Hume showed, *a priori* cognition cannot be explained on the second supposition. Let us see, therefore, if it can be explained on the first.

How can the 'Copernican revolution' help to explain *a priori* cognition? An example may help to give a preliminary idea. We know that every event must have a cause. But, as Hume showed, no amount of observation of particular events will serve to produce this knowledge. From this Hume concluded that we cannot be said to *know* that every event has a cause. All we can do is to try to find a psychological explanation of our belief or persuasion.¹ For Kant, however, we certainly do know that every event must have a cause. And this is an instance of *a priori* cognition. On what condition is it possible? It is possible only on condition that objects, to be objects (that is, to be known), must be subjected to the *a priori* concepts or categories of the human understanding, of which causality is one. For in this case nothing will ever enter the field of our experience except as exemplifying the causal relation, just as, to revert to our former illustration, nothing can ever enter the field of vision of the man whose power of vision is so constituted that he sees all things as red, except as red. If objects of experience are of necessity partially determined or constituted as such by the imposition of mental categories, and if causality is one of these, we can know in advance or *a priori* that nothing will ever happen, within the whole field of human experience, without a cause. And by extending this idea beyond the single example of causality we can explain the possibility of the whole range of *a priori* cognition.

Now, I have spoken of Kant's 'hypothesis'. And as regards its initial conception it was, of course, an hypothesis. 'Let us see whether we can get on better by assuming that . . .' represents the sort of way in which Kant introduces his idea. But he notes that, though the idea was suggested by the revolution in natural philosophy or physics, we cannot, in the critical philosophy, experiment with objects in a manner analogous to that in which the physicist can make experiments. We are concerned with the relation between objects and consciousness in general, and we cannot remove objects out of their relation to the knowing subject in order to see whether this does or does not make a difference to them. Such a procedure is impossible in principle. At the same

¹ In the Foreword to the *Prolegomena* Kant rightly notes that Hume never questioned the fact that the concept of cause is indispensable for life.

time, however, if on the new hypothesis we can explain what cannot be explained in any other way, and if at the same time we succeed in demonstrating the laws which lie *a priori* at the basis of Nature (considered as the sum of possible objects of experience), we shall have succeeded in proving the validity of the point of view which was at first assumed as an hypothesis.

5. Now, 'there are two sources of human knowledge, which perhaps spring from a common but to us unknown root, namely sensibility and understanding. Through the former objects are *given* to us; through the latter they are *thought*.'¹ Kant here distinguishes between sense or sensibility (*Sinnlichkeit*) and understanding (*Verstand*), telling us that objects are *given* through sense and *thought* through the understanding. But this statement, if taken alone and without reference to the context, might easily give rise to a misconception of his meaning, and a few words of comment are necessary.

We have seen that Kant does not agree with the empiricists that all human knowledge is derived from experience. For there is *a priori* knowledge, which cannot be explained on purely empiricist principles. At the same time he agrees with the empiricists on this point, that objects are given to us in sense-experience. But the word 'given' can be misleading. To put the matter rather crudely, thought can get to work on objects only when they are given to sense; but it does not follow that what is 'given' is not already a synthesis of matter and form, the form being imposed by human sensibility. And it was Kant's conviction that the given is in fact such a synthesis. The word 'given' must therefore be taken as meaning given to consciousness, without the implication that the senses apprehend things-in-themselves, things as they exist independently of the synthesizing activity of the human subject. Sense-experience itself involves such an activity, namely synthesis in the *a priori* sense intuitions of space and time. Things-in-themselves are never given to us as objects: that which the understanding finds before it, so to speak, as the given is already a synthesis of form and matter. The understanding then further synthesizes the data of sense intuition under its own pure (non-empirical) concepts or categories.

Sensibility and understanding, therefore, co-operate in constituting experience and in determining objects as objects, though their contributions are distinguishable. Now, this means that the

¹ B, 29; A, 19.

function of the pure concepts or categories of the understanding (*Verstand*) is to synthesize the data of sense intuition. They are therefore inapplicable to realities which are not, and cannot be, given in sense-experience. And it follows that no metaphysics which consists in using the pure concepts or categories of the understanding (such as the concepts of cause and substance) to transcend experience, as Kant puts it, and to describe supersensible reality can legitimately claim to be a science. Indeed, one of the philosopher's tasks is to expose the hollowness of any such claim.

The function of the pure concepts or categories of the understanding is thus to synthesize the manifold of sense: their use lies in their application to the data of sense intuition. But there are also certain ideas which, while not being mere abstractions from experience, are at the same time not applicable to the data of sense intuition. They transcend experience in the sense that no objects are given, or can be given, within experience which correspond to them. Such, for instance, are the ideas of the soul as a spiritual principle and of God. How are such ideas produced? The human mind has a natural tendency to seek unconditioned principles of unity. Thus it seeks the unconditioned¹ principle of unity of all categorical thinking in the idea of the soul as a thinking subject or ego. And it seeks the unconditioned principles of unity of all objects of experience in the idea of God, the supremely perfect Being.

These 'transcendental Ideas', as Kant calls them, are ascribed by him to the reason (*Vernunft*). We must note, therefore, that Kant uses this word with varying degrees of strictness. When he calls the first *Critique* the *Critique of Pure Reason* (*Kritik der reinen Vernunft*), the word 'reason', as covering the general contents of the work, includes sensibility, understanding and reason in the narrower sense. In this narrower sense reason (*Vernunft*) is distinguished from understanding (*Verstand*), and still more from sensibility (*Sinnlichkeit*). It refers to the human intellect as seeking to unify a manifold referring it to an unconditioned principle, such as God.

Now, this natural tendency of the reason, considered in itself, is in no way belittled by Kant. On the contrary, he considers that the transcendental Ideas exercise an important regulative

¹ 'Unconditioned' as transcending the subjective conditions of sensibility and understanding.

function. For example, the Idea of the world as a totality, the total system of causally related phenomena, constantly spurs us on to develop ever wider scientific explanatory hypotheses, ever wider conceptual syntheses of phenomena. It serves, in other words, as a kind of ideal goal, the notion of which stimulates the mind to renewed effort.

The question arises, however, whether these Ideas possess more than a regulative function. Can they be the source of a theoretical knowledge of corresponding realities? It is Kant's conviction that they cannot. In his view any attempt to use these Ideas as the basis for metaphysics as a science is foredoomed to failure. If we do so, we shall find ourselves involved in logical fallacies and antinomies. Given our possession of these Ideas, it is easy to understand the temptation to use them in a 'transcendent' manner; that is, to extend our theoretical knowledge beyond the field of experience. But it is a temptation to be resisted.

Bearing in mind the considerations outlined in this section, we can easily understand the general structure of the *Critique of Pure Reason*. The work is divided into two broad divisions, the first of which is entitled *Transcendental Doctrine of Elements* (*Transzendente Elementarlehre*). This deals, as the word 'transcendental'¹ indicates, with the *a priori* elements (forms or conditions) of knowledge. It is subdivided into two main parts, *The Transcendental Aesthetic* (*Die transzendente Aesthetik*) and *The Transcendental Logic* (*Die transzendente Logik*). In the first of these Kant deals with the *a priori* forms of sensibility and shows how the synthetic *a priori* propositions of mathematics are possible. The *Transcendental Logic* is subdivided into *The Transcendental Analytic* (*Die transzendente Analytik*) and *The Transcendental Dialectic* (*Die transzendente Dialektik*). In the *Analytic* Kant treats of the pure concepts or categories of the understanding and shows how the synthetic *a priori* propositions of natural science are possible. In the *Dialectic* he considers two main themes, first the natural disposition to metaphysics, and secondly the question whether metaphysics (that is, speculative metaphysics of the traditional type) can be a science. As has already been remarked, he affirms the value of metaphysics considered as a natural disposition but denies its claim to constitute a true science which give us theoretical knowledge of purely intelligible reality.

¹ 'I call all knowledge *transcendental* which is occupied not so much with objects as with our mode of cognition of objects, so far as this is possible *a priori*' (B, 25; A, 11-12).

The second of the two broad divisions of the *Critique of Pure Reason* is entitled *Transcendental Doctrine of Method* (*Transzendente Methodenlehre*). In the place of speculative or 'transcendent' metaphysics, claiming to be a science of realities which transcend experience, Kant envisages a 'transcendental' metaphysics, which would comprise the complete system of *a priori* cognition, including the metaphysical foundations of natural science. He does not profess to provide this transcendental system of *a priori* cognition in the *Critique of Pure Reason*. If we regard the complete system of *a priori* cognition as an edifice, we can say that the *Transcendental Doctrine of Elements*, the first broad division of the *Critique*, examines the materials and their functions, while the *Transcendental Doctrine of Method* considers the plan of the edifice and is 'the determination of the formal conditions for a complete system of pure Reason'.¹ Kant can say, therefore, that the *Critique of Pure Reason* sketches the plan of the edifice architectonically, and that it is 'the complete idea of transcendental philosophy, but not this science itself'.² Strictly speaking, the *Critique of Pure Reason* is only a propaedeutic to the system of transcendental philosophy or metaphysics. But if we use the latter term in a wider sense, we can, of course, say that the contents of the *Critique*, the doctrine of elements and the doctrine of method, constitute the first part of transcendental philosophy or metaphysics.

6. In the last chapter mention was made of the fact that in *Dreams of a Ghost-seer* Kant declared that metaphysics is the science of the boundaries or limits of human reason. In the *Critique of Pure Reason* he endeavours to fulfil this programme. But reason must be understood to mean the theoretical or speculative reason; better, reason in its theoretical function. We cannot have theoretical knowledge of realities which are not given in sense-experience or which are incapable of being so given. There is, of course, reason's critical reflection on itself; but the result of such reflection is primarily to reveal the conditions of scientific knowledge, the conditions of the possibility of objects. It does not open to us a world of supersensible reality as an object of theoretical knowledge.

At the same time this delimitation of the boundaries of theoretical or scientific knowledge does not show that God, for example, is unthinkable or that the term is meaningless. What it does is to put freedom, immortality and God beyond the range of

¹ B, 735-6.

² B, 28; A, 13.

either proof or disproof. The criticism of metaphysics, therefore, which is to be found in the *Transcendental Dialectic* opens the way for practical or moral faith, resting on the moral consciousness. Thus Kant can say¹ that he has to do away with knowledge to make room for faith, and that his destructive criticism of metaphysics' claim to be a science strikes a blow at the root of materialism, fatalism and atheism. For the truths that there is a spiritual soul, that man is free and that God exists no longer rest on fallacious arguments which afford a ground for those who deny these truths; they are moved to the sphere of the practical or moral reason and become objects of faith rather than of knowledge (this term being taken in a sense analogous to that in which it is used with reference to mathematics and natural science).

It is a great mistake to look on this theory as a mere sop to the orthodox and devout or as a mere act of prudence on Kant's part. For it is part of his solution to the great problem of reconciling the world of science on the one hand with, on the other, the world of the moral and religious consciousness. Science (that is, classical physics) involves a conception of causal laws which do not admit of freedom. And man, considered as a member of the cosmic system studied by the scientist, is no exception. But scientific knowledge has its limits, and its limits are determined by the *a priori* forms of human sensibility and understanding. There is thus no valid reason whatsoever for saying that the limits of our scientific or theoretical knowledge are identical with the limits of reality. And the moral consciousness, when its practical implications are developed, takes us beyond the sensible sphere. As a phenomenal being, man must be considered as subject to causal laws and as determined; but the moral consciousness, itself a reality, involves the idea of freedom. Though, therefore, we cannot demonstrate scientifically that man is free, belief in freedom is demanded by the moral consciousness.

This point of view is certainly beset with difficulties. Not only do we have the division between sensible, phenomenal reality and noumenal, purely intelligible reality, but we are also faced in particular with the difficult conception of man as phenomenally determined but noumenally free, as determined and free at the same time, though under different aspects. But it would be out of place to discuss the difficulties here. My point in mentioning Kant's point of view was twofold. First, I wished to draw attention once

¹ B, xxx.

again to the general problem of the reconciliation of the world of Newtonian physics with the world of reality and religion. For if we bear this general problem in mind, we are less likely to lose sight of the wood for the trees. Secondly, I wished to indicate that the *Critique of Pure Reason* does not stand by itself in lonely isolation from Kant's other writings but that it forms a part of a total philosophy which is gradually revealed in successive works. True, the first *Critique* has its own problems, and to this extent it stands by itself. But, quite apart from the fact that inquiry into *a priori* cognition has yet to be pursued in the field of the practical reason, the conclusions of the first *Critique* form only a part of the solution to a general problem which underlies all Kant's thinking. And it is important to understand this fact from the start.