Contents of *A History of Western Philosophy*

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Immanuel Kant (1724-1804) was born in Königsberg in East Prussia (now incorporated in the Soviet Union) and lived all his life in that provincial city. His parents were lower middle class, industrious, and deeply religious. They were Pietists, members of one of the numerous sects on the Protestant left that held that the Reformation had bogged down in its own form of dogmatism. They believed that true religion was a matter of the inner life and emphasized simplicity and obedience to the moral law. Kant came to dislike the evangelical side of Pietism; he had as little use for "enthusiasm" (hymn-singing and other manifestations of "fervor") as Hume or Gibbon. But in contrast to Hume, whose religious background was not dissimilar, Kant remained all his life a deeply religious man.

Little need be said about the details of Kant's life, as one writer has remarked, it was like the most regular of regular verbs. Kant was educated at the University of Königsberg, where he studied classics and theology, and subsequently physics and philosophy. He had, of course, to earn his own living, and his first job was that of a tutor in a private family. Kant did not like the relationship that this entailed, and by 1755 he was back at the university, where he remained the rest of his active life. His lectures were very popular (it is worth emphasizing this in view of the difficulty of his published works), and without ever leaving Königsberg he became in time the best-known professor in Germany. Distinction brought comfort and security, and though he was full of those little eccentricities that students expect to find in their teachers, he was an excellent conversationalist and a charming host. Kant's principal work, the Critique of Pure Reason (1781), is concerned primarily with epistemology and metaphysics, but Kant also wrote on anthropology, esthetics, ethics, and law; early in his career he did original work in astronomy and physics.

The following examination of Kant's philosophy is divided into two main parts: (1) a discussion of his attempt to show how, despite Hume's attack on "necessary connection," real knowledge of matters of fact is possible and (2) an account of the values that he believed lay outside this field of scientific, matter-of-fact knowledge. Kant's version of the nature and limits of scientific knowledge is the concern of the present chapter, which discusses, first, the nature of the problem Kant believed he had inherited from Hume and his general solution to this problem, and, second, Kant's attempted validation of knowledge in mathematics and physics and his criticism of alleged metaphysical knowledge. The next chapter considers Kant's theory of value: first, his ethical theory, including his conception of duty and his solution to the problem of freedom, and, second, his conception of religion.

Kant's Hypothesis

In order to comprehend what Kant sought to do in his Critique of Pure Reason, it is necessary to understand that by the middle of the eighteenth century philosophy had got itself into a most embarrassing situation. Descartes' aim had been to put the new physics on a firm philosophical foundation. This meant providing a field in which physical inquiry could be carried on undisturbed by theological scruples and at the same time excluding mechanism from the realm of values (as Hobbes had failed to do). Descartes believed he had accomplished this by dividing reality into two metaphysically distinct substances, matter and mind. But subsequent attempts to straighten out these apparently reasonable assumptions had resulted in the most paradoxical solutions, solutions that, though different in many respects, were alike in unintentionally demolishing the intellectual basis for physical theory.

The Continental Rationalists pressed Descartes' rationalistic bias to its logical
conclusion. They aimed at certainty, because they held that mathematical knowledge is certain, they regarded mathematics as the ideal of all knowledge. They quite failed to see that, as Hume pointed out, the indubitable knowledge so obtained consisted merely of implicatory relations holding among propositions. To obtain a knowledge of matters of fact they needed perception, but they had written off perception as mere confused thinking, that is, as no more than degenerate conception. Hence their theories remained only speculation, incapable of being verified or refuted.

Locke and his followers pursued an exactly opposite course, but they ended up with an equally frustrating conclusion. They were less concerned with certainty than with the actual world—the shoes, ships, and sealing wax of experience. They recognized, of course, that we have access to the actual world in sense perception, but they held that what we perceive are ideas caused in us by things outside us. Unfortunately, as Hume pointed out, if we start from the assumption that what people are aware of are their own mental states, this is precisely where we remain: We do not know an external world; we know only our own ideas. Thus, in a curious way, by following very different paths both the rationalists and the empiricists reached the same sceptical dead end: The former were confined to tracing out implicatory relations among ideas; the latter, to recording relations of coexistence and succession among ideas.

Meanwhile, the working scientists, unperturbed by philosophical doubts about the nature of their subject, had been making advance after advance, and the Hobbesian vision of a world that was thoroughly mechanistic seemed about to be fulfilled in detail. Hence Hobbes's challenge to the traditional religious and teleological view of the cosmos was more formidable than ever. It had begun to occur to scientists that they might get on very nicely without the hypothesis of a God; as regards morality, it seemed clear that in a completely deterministic universe obligation could be only a vain and chimerical delusion. It was therefore no longer necessary to protect the infant science of physics from the theologians. Indeed, the shoe was now on the other foot. It looked as if traditional values were becoming subjective illusions in a world of neutral fact.

KANT'S VIEW OF SCIENTIFIC METHOD

It was obvious to Kant, then, that the Cartesian compromise had failed. But exactly where had it gone wrong? It was clear, Kant thought, that Descartes had misunderstood the nature of scientific method, which involves both an empirical factor and a rational factor. Descartes' followers had alternatively emphasized each of these factors, with the disastrous results we have seen. None of his followers understood how the two factors combine in cognition; none succeeded in giving an intelligible account of knowledge. Accordingly, Kant undertook to make a much more rigorous and sophisticated analysis of the nature of scientific method than had yet been undertaken.

He began by emphasizing the striking contrast between natural science before and after Galileo. It seemed to him that everyone agreed that, since Galileo's time, physics had been on "the secure path of a science." This did not mean that every proposition in physics was infallibly certain; it meant that when physicists made conflicting assertions about nature they were able to agree on "a common plan of procedure" for settling their dispute. Formerly, natural science had deserved the appellation "science" only by courtesy; it had been a "merely random groping."

What had brought about this revolutionary change? Kant thought that the essence of scientific method could be grasped by concentrating attention on those novel features, introduced by Galileo and the other early seventeenth-century physicists, that had made physics for the first time an "objective science."

Natural science . . . enter[ed] upon the highway of science . . . only about a century and a half [ago, when] Bacon, by his ingenious proposals, partly initiated this discovery, partly inspired fresh vigour in those who were already on the way to it. In this case also the discovery can be explained as being the sudden outcome of an intellectual revolution.

When Galileo caused balls, the weights of which he had himself previously determined, to roll down an inclined plane, when Torricelli made the air carry a weight which he had calculated beforehand to be equal to that of a definite volume of water; or in more recent times, when Stahl changed metal into lime, and lime back into metal, by withdrawing something and then restoring it, a light broke upon all students of nature. They learned that reason has insight only into that which it produces after a plan of its own, and that it must not allow itself to be kept, as it were, in nature's leading-strings, but must itself show the way with principles of judgment based upon fixed laws, constraining nature to give answer to questions of reason's own determining. Accidental observations, made in obedience to no previously thought-out plan, can never be made to yield a necessary law, which alone reason is concerned to discover. Reason, holding in one hand its principles, according to which alone concordant appearances can be admitted as equivalent to laws, and in the other hand the experiment which it has devised in conformity with these principles, must approach nature in order to be taught by it. It must not, however, do so in the character of a pupil who listens to everything that the teacher chooses to say, but of an appointed judge who compels the witnesses to answer questions which he has himself formulated. Even physics, therefore, owes the beneficent revolution in its point of view entirely to the happy thought, that while reason must seek in nature, not fictitiously ascribe to it, whatever as not being knowable through reason's own resources has to be learnt, if learnt at all, only from nature, it must adopt as its guide, in so seeking, that which it has itself put into nature. It is thus that the study of nature has entered on the secure path of a science, after having for so many centuries been nothing but a process of merely random groping.

The examples of mathematics and natural science, which by a single and sudden revolution have become what they now are, seem to me sufficiently
remarkable to suggest our considering what may have been the essential features in the changed point of view by which they have so greatly benefited. ... Hitherto it has been assumed that all our knowledge must conform to objects. But all attempts to extend our knowledge of objects by establishing something in regard to them a priori, by means of concepts, have, on this assumption, ended in failure. We must therefore make trial whether we may not have more success in the tasks of metaphysics, if we suppose that objects must conform to our knowledge. This would agree better with what is desired, namely, that it should be possible to have knowledge of objects a priori, determining something in regard to them prior to their being given. We should then be proceeding precisely on the lines of Copernicus' primary hypothesis. Failing of satisfactory progress in explaining the movements of the heavenly bodies on the supposition that they all revolved round the spectator, he tried whether he might not have better success if he made the spectator to revolve and the stars to remain at rest. A similar experiment can be tried in metaphysics, as regards the intuition of objects. If intuition must conform to the constitution of the objects, I do not see how we could know anything of the latter a priori, but if the object (as object of the senses) must conform to the constitution of our faculty of intuition, I have no difficulty in conceiving such a possibility. Since I cannot rest in these intuitions if they are to be become known, but must relate them as representations to something as their object, and determine this latter through them, either I must assume that the concepts, by means of which I obtain this determination, conform to the object, or else I assume that the objects, or what is the same thing, the experience in which alone, as given objects, they can be known, conform to the concepts. In the former case, I am again in the same perplexity as to how I can know anything a priori in regard to the objects. In the latter case the outlook is more hopeful. For experience is itself a species of knowledge which involves understanding; and understanding has rules which I must presuppose as being in me prior to objects being given to me, and therefore as being a priori. They find expression in a priori concepts to which all objects of experience necessarily conform, and with which they must agree. As regards objects which are thought solely through reason, and indeed as necessary, but which can never—at least not in the manner in which reason thinks them—be given in experience, the attempts at thinking them (for they must admit of being thought) will furnish an excellent test of what we are adopting as our new method of thought, namely, that we can know a priori of things only what we ourselves put into them. 

There are two main points in this passage. First, Kant notes that if (as everyone up to then had held) the test of truth is agreement of the mind with an external object, only particular truths can be known. We can watch a particular body and see that it gravitates; we can watch another and see that it gravitates, and so on. But we can never know that all bodies gravitate, because we can never observe all bodies to see whether or not they gravitate. Consequently, agreement of the mind with its objects cannot be the test of truth, at least as far as universal propositions are concerned. Why not, Kant asks, do what a scientist does when

one of his hypotheses breaks down? Why not try another hypothesis? This is just what Copernicus did. After men had tried for centuries to work out a satisfactory astronomical theory on the hypothesis that the earth is the center of the planetary system, it occurred to Copernicus to try something else—to put the sun at the center of the system. This hypothesis was successful. And just as only prejudice had so long prevented men from trying the heliocentric hypothesis, so only prejudice had prevented men from trying a new epistemological hypothesis. It may seem "inevitable" that truth consists in the mind's agreement with its objects, but this "inevitability" is only the result of our having got used to thinking in these terms. The actual procedure of the scientist shows how inadequate the old conventional view really is.

This brings us to Kant's second point, which concerns the crucial role that experiment plays in science. To make an experiment is to ask a question; unless we ask questions of nature we do not get answers. If a Gallup pollster silently hands blank pieces of paper to the housewives whose doorbells he rings, he will never find out their preferences in breakfast foods. Similarly, if Galileo had simply waited for bodies to fall in order to report their velocities, we would all still be in ignorance of this matter. In Kant's view, this consideration completely alters the conventional notion of the mind's relation to its objects. It means that the mind is not passive but active, and that Locke's metaphor of the blank tablet is profoundly mischievous.

In other words, examination of the nature of scientific knowledge shows that in scientific thinking truth does not consist merely in the agreement of the mind with an already existing state of affairs, for if this were all there were to it, the mind would never come to know any scientific truth at all. This led Kant to frame a new epistemological hypothesis that would conform with the way the mind actually proceeds when it thinks scientifically.

As will be seen, Kant's new hypothesis was a reversal of the old, rejected hypothesis (corresponding to the Copernican shift from a geocentric to a heliocentric system). It was originally assumed that the mind must agree with its objects; however, this assumption proved not only hopelessly inadequate to account for universal truths but a caricature of the nature of scientific thought. Thus Kant adopted the hypothesis that the mind's objects must agree with the mind. Let us see if this fared better.

**DISTINCTION BETWEEN FORM AND CONTENT**

Kant's hypothesis will seem absurd if we fail to distinguish between the form of a judgment and its content. Kant did not mean to suggest that in judgments like "Some roses are red" or "There is a centaur in my office," the objects judged about have to agree with the mind. For, obviously, the truth (or falsity) of such

1 Kant did not altogether reject a correspondence theory of truth. Rather, he held that it is inadequate as a complete account. See pp. 40–43.
judgments depends on the agreement (or disagreement) of the judgment with an external state of affairs. If there is a centaur in my office, the judgment is true; if there is not, it is false. And the way to find out is to go to the office and look.

But all the judgments we make fall into certain classes, depending on their form. For instance, they assert either that something has such-and-such a property ("This rose is red"), or that something is the cause of something else, or that something has such-and-such a degree of some quality, and so on. There is a kind of putting together that consists in attribution; there is another kind of putting together that consists in causation; and so on.

KNOWLEDGE A COOPERATIVE AFFAIR

Kant's hypothesis did not concern particular judgments (for example, "This rose is red"); rather, it concerned the various types of putting together (for example, attribution). According to his hypothesis, knowledge is a cooperative affair in which both mind and object make a contribution, and mind contributes the relations while objects contribute the relata. But mind does not, according to this hypothesis, contribute the particular relations of sense experience—not "on the table," "on the sofa," "on the desk." What it contributes is the spatial relationship common to all these situations, the relationship designated by the term "on"—the relationship of "superposition," if we want another term to describe it. Or take the judgment "This rose is red." What we are judging about here is, of course, something we see—a rose that is red. But an immense quantity of sense data of all kinds—visual, tactile, and olfactory experiences—is constantly streaming in upon us. Nonetheless, we are able to sort out from these data the experience of a rose that is red because, according to this hypothesis, attribution (the relation designated by the term "is") is one of the ways in which the mind organizes and structures the welter of experiences that it encounters.

To put this differently, attribution is one of the types of questions that the mind asks nature and in terms of which, accordingly, nature answers. Thus, all the particular questions (or experiments) that scientists ask take one or the other of certain basic forms. "Who killed President Kennedy?" the Warren Commission asked. This is a particular question, but it has a causation form. Now, if all the questions asked of nature were to have one or the other of certain basic forms, obviously all the answers given by nature would have these same forms, and there would then be some knowledge about nature that is independent of all particular experiences. Or, again, suppose the new hypothesis to be correct and that we know the types of judgment, that is, the basic ways in which the mind relates (or organizes) its experiences. We would then have absolutely certain knowledge, not about this particular experience ("This rose is red"), but about the form of all experience (ordered under the form "is"). In other words, it would not be necessary that the particular rose be red; Hume was correct about this—the rose might be white or yellow. But it would be necessary, if Kant's hypothesis is correct, that experience be organized into things-having-properties, for this way of perceiving things proves to be one of the universal forms of human experience. Hence, despite Hume's attack, there does exist a "necessary connection" among matters of fact—not a necessary connection between this particular fact A and that particular fact B, but a necessary connection, or structure, that organizes experience into an "A-is-B" type.

An example may help. Consider the process by which crude oil is refined into various petroleum products—kerosene, gasoline of various octane numbers, and so on. The refining process corresponds, in this analogy, to the standard form of judgment in terms of which, according to Kant's hypothesis, experience is organized. If we know that such-and-such steps have been built into the refining process, we can with confidence that gasoline of such-and-such an octane number will issue from the refinery. The "necessary connection" is not found in the crude oil; it is supplied by the refining process.

Similarly, suppose we have a machine for sorting oranges that consists of an inclined plane with holes of various sizes. Oranges rolling down the surface of the plane fall through the holes into boxes underneath. If one of the holes is, say, two and one-half inches in diameter, we can say that no orange in the box under this hole has a diameter greater than two and one-half inches; and the same applies to the other holes. Although there are many things about the oranges that we could not tell without examining them (for example, whether some are rotten or whether some are green), we can know that the oranges in a particular box cannot be larger than such-and-such a size. Here again we have discovered a necessary connection, namely, that between being in a particular box and having a maximum diameter of so many inches. We know this connection prior to measuring any of the oranges, because we know the nature of the sorting principle being employed.

THE GENERAL PROBLEM OF PURE REASON

So far in this chapter Kant's hypothesis has been formulated in laymen's terms. Before we can proceed to Kant's attempt to prove his hypothesis, the argument must be reformulated in the highly technical language he himself used. In Kant's terminology the question is, "How are synthetic a priori judgments possible?" This, according to Kant, is "the general problem of pure reason." We must first understand how this question is related to the distinction, formulated by Kant in his study of the nature of scientific method, between the content of an experience and certain standard forms, or ways, of organizing that experience.

2 It must be borne in mind that this is only a mechanical metaphor. In Kant's view, the mind is not static like the machine, which "orders" oranges. The mind is active. In fact, in Kant's view, it is a thing at all; it is the ordering process itself. The example is intended to show only that if we know the nature of an ordering principle we can know a priori the characteristics of order imparted by it to the things it orders.
A judgment, according to Kant, is a movement of thought in which two items are brought together and combined. We judge whenever we say, “This house is large,” “That dog is a Sealyham,” or “The interior angles of a triangle equal two right angles.” The mind brings the items together in judgment because it detects a connection between them. It is this connection that is the warrant, or basis, for the judgment. Now, the most obvious kind of evidence on which we base our judgments is experience: It is sense experience, for instance, that warrants our judging that a particular house is large. Such a judgment Kant called empirical, or “a posteriori.” In contrast, there is a kind of judgment that is “independent of all experience.” For instance, we do not have to measure the angles of a particular triangle to know that its interior angles equal two right angles; we know this as a result of a geometric proof—it follows from Euclid’s definition of the nature of a triangle that the interior angles of any triangle equal two right angles. This kind of judgment Kant called pure, or “a priori.” There are two characteristics of a priori judgments that enable us to distinguish them with certainty from a posteriori judgments.

Experience teaches us that a thing is so and so, but not that it cannot be otherwise. First, then, if we have a proposition which in being thought is thought as necessary, it is an a priori judgment. . . . Secondly, . . . if, then, a judgment is thought . . . in such manner that no exception is allowed as possible, it is not derived from experience, but is valid absolutely a priori. . . . Necessity and strict universality are thus sure criteria of a priori knowledge, and are inseparable from each other.

In addition to distinguishing between a posteriori and a priori judgments, Kant distinguished between analytical and synthetical judgments. In an analytical judgment the predicate is covertly contained in the subject and may be obtained by analysis of it. “Roses are flowers” is an example: That roses are flowers is a part of the definition of roses. In a synthetical judgment the predicate is not contained in its subject. “Some roses are red” is an example: Red is not a part of the definition of rose.

We thus have two pairs of judgments, a priori—a posteriori and analytical—synthetical. These pairs yield four logically possible classes of judgments, as follows:

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<th>a posteriori</th>
<th>a priori</th>
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<tr>
<td>analytical</td>
<td>1 analytical a posteriori</td>
<td>2 analytical a priori</td>
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<tr>
<td>synthetical</td>
<td>3 synthetical a posteriori</td>
<td>4 synthetical a priori</td>
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But the class in the upper left quadrant (class 1) is obviously empty: There can be no analytical a posteriori judgments, since all analytical judgments are universal and necessary. Thus there are three classes of judgment to examine, and the question is, “What kind of evidence warrants each of these classes?” There is no problem about class 2. All judgments of this class are warranted by the law of contradiction. Since being a flower is a part of the definition of rose, we would contradict ourselves if we asserted that a rose is not a flower. The knowledge yielded by this type of judgment, it will be seen, is just what Hobbes called knowledge of the agreement and disagreement of names. Similarly, there is no problem about class 3. The warrant for synthetical a posteriori judgments is experience. The judgment “This rose is red” is warranted by the visual experience (under suitable light conditions) of the rose’s redness.

But what about class 4? What warrant can there be for synthetical a priori judgments? The “principle,” as Kant called it, of this type of judgment cannot be the law of contradiction, for judgments in this quadrant are synthetical—that is, their predicates are not contained covertly in their subjects. Nor can the principle be experience, for “experience teaches us only that a thing is so and so,” and judgments in this quadrant, being a priori, assert a universal and necessary connection. Is there any third type of principle, other than experience or the law of contradiction, that might serve as a warrant for synthetical a priori judgments? Hume thought not. He pointed out, first, that there is never any logical impossibility in denying an assertion of a matter of fact (we do not contradict ourselves if we judge, “This rose is not red,” whereas we contradict ourselves if we judge, “This rose is not a flower”) and, second, that it is impossible to “collect” from any series of particulars, however numerous, universality and necessity. Accordingly, Hume’s position, expressed in Kantian language, is this: All judgments are either synthetical a posteriori (judgments about what Hume called matters of fact) or analytical (judgments about what he called relations of ideas). This was the basis for Hume’s scepticism regarding causality and inductive inference. He believed he had shown that there was no evidence—and could be no evidence—that because a had been associated with b in the past, it would continue to be associated with b in the future.

Kant, of course, wanted to show that there are judgments of the synthetical a priori type—judgments that are both “instructive,” like synthetical a posteriori, matter-of-fact judgments, and universal and necessary, like analytical judgments. But, once again, what possible warrant can there be for such judgments? We are left therefore with the following situation regarding the principles of various classes of judgment:

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<th>a posteriori</th>
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<tr>
<td>analytical</td>
<td>1 null</td>
<td>2 warranted by law of contradiction</td>
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<tr>
<td>synthetical</td>
<td>3 warranted by experience</td>
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3 Kant’s system of classification does not take account of some judgments—for instance, contradictions. “Squares are round” is not analytical, according to Kant’s definition, and it is certainly not synthetical.
The fourth quadrant, then, poses "the general problem of pure reason"—that is, "How are synthetical a priori judgments possible?" We shall not progress very far toward an answer until we narrow the question down. Kant pointed out that, rightly or wrongly, philosophers have believed judgments of the kind he called synthetical a priori to occur in three areas, namely, mathematics, natural science, and metaphysics. The general question "How are synthetical a priori judgments possible?" thus divides into three subquestions: (1) "How are synthetical a priori judgments possible in mathematics?" (2) "How are synthetical a priori judgments possible in natural science?" and (3) "Are synthetical a priori judgments possible in metaphysics?" Note the change in phrasing in the third question.

Kant agreed with Hume that synthetical a priori judgments are not possible in metaphysics, although he believed that our disposition to ask and to try to answer metaphysical questions points to the fact that reason has a "regulative" use. More will be said about this later in the chapter.

Kant agreed with Hume that mathematical judgments are universal and necessary, but he maintained that they are synthetic rather than analytical.4 He also agreed with Hume that most judgments in natural science are a posteriori. But—and this is the crucial point, of course—he denied that all are a posteriori. Thus the proposition "Friction causes heat" is a posteriori because it is a generalization of experience. But the proposition "Every event has a cause" is a priori. In Kant's view, the fact that this and certain other basic propositions in physics are a priori means that inductive inference is validated. Hence the empirical proposition "Friction causes heat" is highly probable, not a wild shot in the dark, as Hume's view implied.

Kant's point can be illustrated by the game of guessing what card a dealer is going to turn up next. If, after an ordinary deck of fifty-two cards has been shuffled, we are invited to bet that the first card turned up will be the ace of spades, we would want odds of 52 to 1. Of course, after the first card has been drawn and removed from the deck, the odds would decrease. But suppose that, after each drawing, the card is reinserted in the deck and the deck is reshuffled. Then the odds would remain 52 to 1. Further, if the deck is increased in size, the odds would grow greater. And if it contained an infinite number of cards, we would refuse to bet, for the odds would be infinitely against us. There is no evidence, according to Hume, that the human situation is not like this: Every drawing of a card (every event that takes place) is an isolated occurrence, and we can make no inference from what has happened to what may happen.

But what if the dealer tells us (we shall have to assume that he can be trusted) that he has arranged the cards in a definite order? Then, suppose that the following sequence occurs: ace of spades, ace of hearts, ace of diamonds, ace of clubs, king of spades, king of hearts, king of diamonds, king of clubs, queen of spades, . . . . Most of us would probably bet that the next card will be the queen of hearts. If it is, we would probably take lower odds (that is, feel more confident) that the next card will be the queen of diamonds and the next the queen of clubs. In a word, on the assumption that there is an order, we begin to form hypotheses about what that order is (for example, that the dealer has arranged the cards in their order of value in bridge). Of course, any hypothesis we frame may be falsified—the next card after the queen of clubs may be the deuce of spades, for the order may be "three times round from the top of the deck, then three times round from the bottom of the deck." Hence, though we can never be certain of what the order is, our hypothesis can become increasingly probable, and after a sufficient number of correct predictions we may regard the hypothesis as "certain for all practical purposes." But all this depends, it will be seen, on the deck being well ordered; if it is not, all probabilities at once reduce to zero.

In this example, of course, we must rely without evidence on the honesty of the dealer. According to Kant's hypothesis, our confidence in the orderliness of the physical world rests on firmer grounds. It is derived from the fact that we know that every event necessarily has a cause. We can never be sure, with respect to any particular event a, that its cause is b. But because we know that there is some event that is the cause of a, we can become increasingly confident it is b.

All this holds only if the proposition that every event has a cause is, as Kant claimed, necessarily true. And that it is true is precisely what Hume denied. The concept "cause," Hume pointed out, cannot be derived analytically from the concept "event." Since it cannot be so derived, we cannot say that every event necessarily has a cause. Hence inductive inference is not validated. Does Kant's reply to Hume merely reaffirm what Hume denied? If so, it is surely a poor answer.

Those who criticize Kant on this score, however, miss his main point. It seemed to him that there is a prima facie case in favor of synthetical a priori judgments in mathematics and natural science. The only reason, he thought, for questioning them would be the suspicion aroused by Hume's attack. The situation must have seemed to Kant to be rather like that expressed in the legal maxim "A man is innocent until proved guilty." Suppose that circumstantial evidence suggests that a highly respectable citizen has committed a particularly revolting murder. If the evidence against him is shown to be misleading and incompetent, his reputation should be rehabilitated.

This is precisely the position Kant took with regard to synthetical a priori judgments in mathematics and natural science, and this is why he framed his question as he did. He did not ask whether such judgments are possible; he asked how they are possible. It did not seem to him that he was assuming the point at issue between himself and Hume, for he thought that Hume was disturbed by his own conclusion and would be delighted to be proved wrong. Although a man might be able to rest in "mitigated" scepticism, no man would choose

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4 Though Hume wavered about the status of geometry, when he held that it is synthetical, he said that it is not a priori; when he allowed that it is a priori, he insisted that it is analytical.
to adopt this position. Hence, Kant thought, it was necessary only to show that Hume's suspicion of these judgments was based upon a mistake, namely, the mistaken belief that the only possible basis for making a connection in a synthetical judgment is experience. To "rehabilitate the reputation" of such a judgment, one had only to find the real connection that is operative.

At this point it will be helpful to translate back from the technical language Kant actually used into the form-and-content language that has been derived from Kant's analysis of scientific method. Kant's hypothesis, as formulated earlier, was that certain standard forms are contributed by the mind, in terms of which the content of experience is organized. These standard forms "sort" the content of experience into standard patterns. Though the materials that are thus organized into patterns are not necessary, the patterns themselves are necessary, for without them the variable contents would be only a chaotic jumble, not the well-ordered content we actually experience. Accordingly, if there are any standard forms, there is a kind of knowledge that is synthetical (because the predicate of the judgment is not contained in the subject) and that is also a priori (because it is contributed to experience by the mind and is therefore universal and necessary for all experience). Thus Kant's hypothesis can be rephrased to mean that there are, after all, judgments in the fourth quadrant, and that these judgments are warranted neither by experience nor by the law of contradiction but by an organizing principle of the mind.

If this hypothesis can be proved, the "problem of pure reason" is solved, and a correct combination of the empirical and rational elements in knowledge will have been found. If the hypothesis is correct, then "all our knowledge begins with experience," as Locke and the other empiricists had insisted. But it does not necessarily follow, as they supposed, "that it all arises out of experience." Indeed, if the hypothesis is correct, all knowledge, not just scientific knowledge, contains elements that are not drawn from experience but supplied by the mind itself. Such elements would be a priori in the sense required.

But though all our knowledge begins with experience, it does not follow that it all arises out of experience. For it may well be that even our empirical knowledge is made up of what we receive through impressions and of what our own faculty of knowledge (sensible impressions serving merely as the occasion) supplies from itself. If our faculty of knowledge makes any such addition, it may be that we are not in a position to distinguish it from the raw material, until with long practice of attention we have become skilled in separating it.

This, then, is a question which at least calls for closer examination, and does not allow of any offhand answer: whether there is any knowledge that is thus independent of experience and even of all impressions of the senses. Such knowledge is entitled a priori, and distinguished from the empirical, which has its sources a posteriori, that is, in experience. So far, Kant has not proved that there is any necessary synthetical a priori knowledge. His position, in terms of the sorting-machine analogy, is as follows:

We could make a priori judgments about the size of oranges in boxes beneath the machine, providing we knew the dimensions of the holes in the machine's surface. Similarly, assuming that all the objects of knowledge were connected by certain basic types of putting together, we could know a priori several relational characteristics of all objects, providing we were able to discover what these basic types of putting together were. But that this is so remains to be proved.

Let us return to the three central questions that Kant hoped to answer: "How are synthetical a priori judgments possible in mathematics?" "How are they possible in physics?" and "Are they possible in metaphysics?" It will be seen that Kant proposed to answer the first two questions by showing that there are certain basic types of putting together that operate in these fields. As regards the third question, in Kant's view, the answers to the questions about mathematics and physics dispose of the possibility of there being knowledge of metaphysical objects.

The A Priori in Mathematics

Kant dealt with his first question—"How are synthetical a priori judgments possible in mathematics?"—in a section of the *Critique* called the "Transcendental Aesthetic." He called it "aesthetic" because he believed the basis for this kind of knowledge to be immediate, nondiscursive, and sensuous; he called it "transcendental" because he believed that such knowledge is not in experience but a necessary condition for experience. His first step was to try to show that mathematical knowledge is synthetical.

All mathematical judgments, without exception, are synthetic. This fact, though incontestably certain and in its consequences very important, has hitherto escaped the notice of those who are engaged in the analysis of human reason...

We might, indeed, at first suppose that the proposition \( 7 + 5 = 12 \) is a merely analytic proposition, and follows by the principle of contradiction from the concept of a sum of 7 and 5. But if we look more closely we find that the concept of the sum of 7 and 5 contains nothing save the union of the two numbers into one, and in this no thought is being taken as to what that single number may or may not be (which corresponds to one of them, our five fingers).

5 [By "intuition" Kant meant "immediate and sensuous," as opposed to "discursive and reasoned."]

This was the point of his calling the whole section the "Transcendental Aesthetic"—Author.]
for instance, ... adding to the concept of 7, unit by unit, the five given in intuition. For starting with the number 7, and for the concept of 3 calling in the aid of the fingers of my hand as intuition, I now add one by one to the number 7 the units which I previously took together to form the number 5, and with the aid of that figure [the hand] see the number 12 come into being. That 5 should be added to 7, I have indeed already thought in the concept of a sum = 7 + 5, but not that this sum is equivalent to the number 12. Arithmetical propositions are therefore always synthetic. This is still more evident if we take larger numbers. For it is then obvious that, however we might turn and twist our concepts, we could never, by the mere analysis of them, and without the aid of intuition, discover what [the number is that] is the sum.

Just as little is any fundamental proposition of pure geometry analytic. That the straight line between two points is the shortest, is a synthetic proposition. For my concept of straight contains nothing of quantity, but only of quality. The concept of the shortest is wholly an addition, and cannot be derived, through any process of analysis, from the concept of the straight line. Intuition, therefore, must here be called in; only by its aid is the synthesis possible. 4

Those who agree with Hobbes that mathematical judgments are analytical will, of course, think that the “Transcendental Aesthetic” is a waste of time, for there is no problem, as Kant himself pointed out, about the necessity of analytical judgments. But for those who share Kant’s view that mathematical judgments are conceptual, there is indeed a puzzle about how such judgments can be a priori. Hence the hypothesis put forward in the “Transcendental Aesthetic” is worth considering.

BASIS OF MATHEMATICAL CERTAINTY

Let us therefore proceed to the second stage in Kant’s argument: Assuming that mathematics is synthetical, how can it be a priori? What, for example, is the basis of certainty in geometry, the science of the properties of space? We must first ask what space is. According to the Newtonian view, space is an absolute reality, independent of ourselves, a big box in which events occur. According to the Leibnizian view, space is not real (the monads are nonspatial) but relational, a structure produced by sense and imagination. Neither of these views, however, wholly satisfied Kant. For one thing, he was much impressed by the curious kind of spatial relationship obtaining between, for instance, right- and left-handed gloves. If space were merely relational, as Leibniz claimed, it would be possible to superimpose one glove on the other, for all the relationships between parts (for example, between thumb and forefinger in each glove) are identical. The gloves ought to be spatially identical, like two vases made from the same mold. The fact that they are not shows there is more to space than the relation of parts.

On the other hand, if space were Newtonian, how could we ever have the a priori knowledge of it claimed in geometry? We could know that in the part of space under inspection here and now triangles have interior angles equal to 180°, but how could we know that this is true, as geometry claims, in all space everywhere? It is the old problem, obviously, of the impossibility of explaining a priori knowledge on the usual assumption that the mind’s objects are independent reals and that truth consists in bringing the mind into agreement with them.

Furthermore, Kant noted that although we grasp the difference between right-handed and left-handed gloves as soon as we see them, we are unable to give this difference a rational, discursive formulation. This suggested to Kant that the mind’s apprehension of space is sensuous (“aesthetic”) rather than intellectual.

Drawing all these considerations together Kant came to the conclusion that space is simply a mode of the mind’s apprehension of its world. It is, in fact, one of the ways of putting together whose existence he had already hypothecated to account for our knowledge of objects. It is not a putting together in judgment, for (as we have seen) our experience of space is sensuous, not intellectual. But, like the types of putting together that occur in judgment, it is a way of relating and organizing experiences. And because it is contributed by the mind, we can be a priori certain that all the mind’s objects have spatial characteristics. That is, the mind organizes its experiences spatially, just as, in the sorting-machine analogy, the machine sorts oranges out into different boxes.

Space is not an empirical concept which has been derived from outer experiences. For in order that certain sensations be referred to something outside me (that is, to something in another region of space from that in which I find myself), and similarly in order that I may be able to represent them as outside and alongside one another, and accordingly not only different but as in different places, the representation of space must be presupposed. The representation of space cannot, therefore, be empirically obtained from the relations of outer appearance. On the contrary, this outer experience is itself possible at all only through that representation.

Space is a necessary a priori representation, which underlies all outer intuitions. We can never represent to ourselves the absence of space, though we can quite well think it as empty of objects. It must therefore be regarded as the condition of the possibility of appearances, and not as a determination dependent upon them. . . .

Space is not a discursive or, as we say, general concept of relations of things in general, but a pure intuition. For, in the first place, we can represent to ourselves only one space; and if we speak of diverse spaces, we mean thereby only parts of one and the same unique space. Secondly, these parts cannot precede the one all-embracing space, as being, as it were, constituents out of which it can be composed; on the contrary, they can be thought only as in it. Space is essentially one: the manifold in it, and therefore the general
concept of spaces, depends solely on [the introduction of] limitations. Hence it follows that an a priori, and not an empirical, intuition underlies all concepts of space.

This argument is directed chiefly against the empiricists, who held space to be an empirical concept derived from the perception of things as “outer” (as the concept “red” is derived from the perception of red objects). Kant’s point here is that since the experience of “outer” already implies space, space cannot be derived from it. We can think of space without objects in it, but we cannot think of objects that are not in space. Hence our experience of space is prior to, and a condition of, our experience of objects. Kant assumed that, if objects are a condition of our experience of space, space must be a condition of our experience of objects.

Next, Kant undertook to show that the a priori character of space (which he believed himself to have established) validates the claim of geometry to be an a priori and synthetical science. Geometry is the science of space. According to Kant, space is not an independently existing entity but a way in which the human mind organizes its experience. Hence, what the geometrical investigator investigates is not the properties of outer objects but the modes of our faculty of intuition (outer perception). Hence, again, any properties found to characterize a particular region of space (for example, that the space here and now is such that triangles formed in it have interior angles equal to 180°) will characterize space everywhere, for the geometric properties in question are a projection of the human mind. Since they are among the basic ways in which the mind organizes the objects of its experience, all objects that the mind experiences will have these properties.

Geometry is a science which determines the properties of space synthetically, and yet a priori. What, then, must be our representation of space, in order that such knowledge of it may be possible? It must in its origin be intuition; for from a mere concept no propositions can be obtained which go beyond the concept—as happens in geometry. Further, this intuition must be a priori, that is, it must be found in us prior to any perception of an object, and must therefore be pure, not empirical, intuition. For geometrical propositions are one and all apodieetic, that is, are bound up with the consciousness of their necessity; for instance, that space has only three dimensions. Such propositions cannot be empirical or, in other words, judgments of experience, nor can they be derived from any such judgments.

How, then, can there exist in the mind an outer intuition which precedes the objects themselves, and in which the concept of these objects can be determined a priori? Manifestly, not otherwise than in so far as the intuition has its seat in the subject only, as the formal character of the subject, in virtue of which, in being affected by objects, it obtains immediate representation, that is, intuition, of them; and only in so far, therefore, as it is merely the form of outer sense in general.

Our explanation is thus the only explanation that makes intelligible the possibility of geometry, as a body of a priori synthetic knowledge;
space, of extended things, etc. ... This predicate can be ascribed to things only in so far as they appear to us, that is, only to objects of sensibility. The constant form of this receptivity, which we term sensibility, is a necessary condition of all the relations in which objects can be intuited as outside us; and if we abstract from these objects, it is a pure intuition, and bears the name of space. Since we cannot treat the special conditions of sensibility as conditions of the possibility of things, but only of their appearances, we can indeed say that space comprehends all things that appear to us as external, but not all things in themselves, by whatever subject they are intuited. ... For we cannot judge in regard to the intuitions of other thinking beings, whether they are bound by the same conditions as those which limit our intuition and which for us are universally valid. ... Our exposition therefore establishes the reality, that is, the objective validity, of space in respect of whatever can be presented to us outwardly as object, but also at the same time the ideality of space in respect of things when they are considered in themselves through reason, that is, without regard to the constitution of our sensibility.

The "Transcendental Aesthetic" also contains an exposition of time, which can be treated more briefly because it is largely parallel to the exposition of space. According to Kant, time, like space, is a "pure form of intuition," that is, a mode of ordering (or of putting together) that is immediate and sensuous, not a matter of judgment. Just as our minds order our experiences spatially, as being above or below, to the right or left, of other experiences, so they order these experiences temporally, as being before, after, or simultaneous with other experiences. There is, of course, a felt difference, immediately recognizable and unmistakable, between time and space—between, for instance, before and after on the one hand and above and below on the other. And this felt difference is perceived by us as the difference between what is inner and what is outer. Whatever we experience as spatial, we hold to be a datum of "outer sense." This is true of the materials of the five senses, all of which have this character of externality. Regarded, however, as states of oneself, these same materials are experienced as having a temporal order, that is, as coming before, after, or simultaneous with other experiences we have. Hence, in contrast to space, "time is nothing but the form of inner sense, that is, of our awareness of ourselves and of our own inner state."

So far in his account of the a priori properties of experience, Kant has not reached anything like the level of ordinary human experience, which consists in a knowledge of objects, that is, of complex and relatively enduring structures. So far, that is, Kant has dealt merely with the spatiotemporal ordering of contents, for example, with experiences of colored patches succeeding one another. Kant's point is that to have even this very elementary kind of experience there must be certain synthetical ordering activities of the mind. Obviously, to have an experience of objects, still more complex types of putting together must occur. This brings us to the natural sciences, which, unlike mathematics, are concerned with the cognition of physical objects.

**The A Priori in Physics**

Kant's second question—"How are synthetical a priori judgments possible in physics?"—is discussed in a section of the *Critique* called the "Transcendental Logic." Kant called it "logic" because he was concerned with the kinds of putting together that occur in judgment (in contrast to the immediate, sensuous putting together discussed in the "Aesthetic"); he called it "transcendental" because, once again, he was concerned not with the content of experience but with the conditions that make an experience of objects possible. As we have seen, Kant did not maintain that all judgments in the natural sciences are synthetical a priori (as he held all mathematical judgments to be). But he did think that certain judgments must be synthetical a priori in order to provide an underpinning for the inductive procedures of the sciences.

Furthermore, Kant hoped to do more than merely show that there are some a priori elements in our experience of objects. In the "Aesthetic" he was not content merely to establish spatiality; he wanted to establish a particular kind of spatiality (namely, Euclidean spatiality). That is, he wanted to do more than reply to Hume in a general way, by showing how an objective world can exist and inductive inference can be possible. He wanted to show, specifically, that the concept employed in Newtonian physics (the particular kind of order it presupposes) are a priori.

It is necessary, therefore, to distinguish two questions: (1) Can a case be made for the existence of some ordering elements contributed by the mind? (2) Can it be shown that these elements are those presupposed in Newtonian physics? The first question is relatively simple, and the answer seems to be in the affirmative. The second question is much more difficult, and it involved Kant in many complications.

**The Two Elements in Judgment**

Let us remind ourselves of what was said earlier about judgment. To think is to judge; knowledge is the end product of judging, and judging is a kind of putting together. According to Kant, two different components are always involved in judging: a direct, sensuous component and a conceptual, structural component. The difference between these components is like the difference between "guidebook" knowledge of a city and direct experience of it. A man could sit at home with his Baedeker, memorizing a map of Rome and learning the names of various buildings and their dimensions. As a result, he might be able to tell us quite a bit about the dome of St. Peter's. But if he has never seen the basilica, if he has never looked at a dome, his knowledge is, in Kant's terminology, "empty."

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6. The "Transcendental Logic" is in turn divided into two parts: the "Transcendental Analytic" and the "Transcendental Dialectic." The "Analytic" is concerned with what may be called the proper use of logic: the "Dialectic," with its improper use. Here we are concerned with the "Analytic"; for the "Dialectic," see pp. 51-55.

7. See pp. 24-25.
Kant: Theory of Knowledge

He has acquired a number of concepts ("dome," "lantern," "pendentive," "barrel vault"), but they lack the concrete filling of perception and feeling. At the other extreme is the tourist who rushes through Europe so fast that, though he has "seen" St. Peter's (in the sense of having looked in that direction as his bus sped by), his knowledge of it is, again in Kant's terms, "blind." He lacks the historical and architectural knowledge that would structure, organize, and focus the sensory experience. Kant's first point then—and surely it is a good one—is that all effective knowledge must contain two elements: an experiential element (a concrete filling of sense data, perceptions, and feelings) and a structural or relational element (a conceptual ordering of the percepts and feelings). This double requirement is what Kant meant to insist on when he said that "thoughts without content are empty, intuitions without concepts are blind. It is just as necessary to make our concepts sensible, that is, to add the object to them in intuition, as to make our intuitions intelligible, that is, to bring them under concepts." Even the most rudimentary kind of judgment, a judgment of identification (for example, "That was a clock striking three") is a case in point. Only when an experience (a noise) is "brought under" a concept ("clock striking") can it be identified, or known for what it is.

This is an extremely important distinction, and Kant was the first philosopher to formulate it unambiguously. Most rationalists, from Plato down to Descartes and his successors, had taken it for granted that cognitive processes form a continuum; they regarded perception as "confused thought"—that is, as the same sort of activity as reasoning, differing only in degree of adequacy. Although the empiricists, of course, had not maintained that perception is confused, neither had they drawn the Kantian distinction between percepts and concepts, for they had tended to treat concepts as fictions, or even (as with the extreme nominalists) as merely words. Hence they too failed to emphasize that there are two indispensable elements in human knowledge. Here, then, is another reason why Kant's theories can be regarded as a watershed in the history of philosophy. On the whole, most nineteenth- and twentieth-century philosophers have accepted Kant's distinction between percepts and concepts, with the limitations that this entails regarding direct, immediate knowledge of the self and its world. Those philosophers who did not nevertheless had to deal with the distinction Kant had drawn; philosophy could not return to its pre-Kantian course.

A PRIORI CONCEPTS

To return to the argument of the "Transcendental Logic": Obviously, most concepts, like the concept "clock striking," are what Kant called empirical. They are derived from experience. That their derivation requires complicated acts of thought is beside the point here. The question for Kant was whether there are any pure a priori concepts, that is, forms of thought (of judging) that correspond to space and time as pervasive forms of sensing.

The "clue" to the discovery of these pure a priori concepts lies in recognizing that all judgments whatsoever fall into one or the other of several types (categorical, hypothetical, affirmative, negative, and so forth). According to Kant, we could not make a judgment of any of these types unless we understood the "relationship" being asserted. By "relationship" Kant meant, not the particular relationship in a particular judgment ("All crows are black"), but the generic relationship ("All — are —"). To grasp the particular connection between "crow" and "black," sense experience is required, for the concept "crow" is an empirical concept like the concept "clock striking." But before any particular empirical judgment of this type can be made, it is necessary to understand the generic relationship "All — are —." Hence the concept "All — are —" is a pure a priori concept, antecedent to all experience and a condition of there being any specific judgments of this type and therefore any knowledge of this kind.

Kant believed that Aristotelian logic furnished a complete and exhaustive table of all possible types of judgment. Hence from this list he drew up a corresponding list of pure a priori concepts. Kant classified the various possible types of judgment as follows:

<table>
<thead>
<tr>
<th>I. QUANTITY OF JUDGMENTS</th>
<th>II. QUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal</td>
<td>Affirmative</td>
</tr>
<tr>
<td>Particular</td>
<td>Negative</td>
</tr>
<tr>
<td>Singular</td>
<td>Infinite</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III. RELATION</th>
<th>IV. MODALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Categorical</td>
<td>Possibility</td>
</tr>
<tr>
<td>Hypothetical</td>
<td>Necessity</td>
</tr>
<tr>
<td>Disjunctive</td>
<td>Impossibility</td>
</tr>
</tbody>
</table>

Since, in Kant's view, each form of judgment is an a priori concept (or "category") by means of which the mind orders its various particular judgings, there is a table of categories that corresponds exactly with the table of types of judgment:

<table>
<thead>
<tr>
<th>I. OF QUANTITY</th>
<th>II. OF QUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unity</td>
<td>Reality</td>
</tr>
<tr>
<td>Plurality</td>
<td>Negation</td>
</tr>
<tr>
<td>Totality</td>
<td>Limitation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III. OF RELATION</th>
<th>IV. OF MODALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Of Inference and Subsistence (causal and effect)</td>
<td>Possibility—Impossibility</td>
</tr>
<tr>
<td>Of Causality and Dependence (cause and effect)</td>
<td>Necessity—Contingency</td>
</tr>
<tr>
<td>Of Community (reciprocity between agent and patient)</td>
<td></td>
</tr>
</tbody>
</table>
It is important to see that, once Kant had discovered the all-important connection between the types of judgment and the a priori concepts (or forms of synthesis), the actual list of a priori concepts followed automatically, being guaranteed by the authority of Aristotle's logic.

The same function which gives unity to the various representations in a judgment also gives unity to the mere synthesis of various representations in an intuition; and this unity, in its most general expression, we entitle the pure concept of the understanding. The same understanding, through the same operations by which in concepts, by means of analytical unity, it produced the logical form of a judgment, also introduces a transcendental content into its representations, by means of the synthetic unity of the manifold in intuition in general. On this account we are entitled to call these representations pure concepts of the understanding, and to regard them as applying a priori to objects—a conclusion which general logic is not in a position to establish.

In this manner there arise precisely the same number of pure concepts of the understanding which apply a priori to objects of intuition in general, as ... there have been found to be logical functions in all possible judgments. For these functions specify the understanding completely, and yield an exhaustive inventory of its powers. These concepts we shall, with Aristotle, call categories.

THE METAPHYSICAL DEDUCTION

This is what Kant called the "metaphysical deduction" of the categories. In it he purported to show that every judgment the mind makes ("Roses are red," "Crows are black," "Friction causes heat") presupposes one or the other of twelve different synthetical operations ("puttings together"), or categories. It is important to understand that a category is not a fixed pigeonhole into which experience is dumped. One of the unfortunately misleading aspects of the sorting-machine analogy is that it suggests this sort of static conception—as, for that matter, does Kant's own term, "category." On the contrary, the categories are transcendental concepts, or rules, that underlie and make possible those actual, empirical synthoses that occur every time we judge. In calling them "transcendental," Kant merely meant they are not empirically observable "puttings together," as are the judgments "Roses are red" and "That was a clock striking three." We can be sure that they occur because, if they did not, the actual judgments we make could not occur.

THE TRANSCENDENTAL DEDUCTION

From the metaphysical deduction, Kant went on to what he called the "transcendental deduction" of the categories. So far he had merely shown that pure a priori concepts, or categories, underlie all our acts of judging. The function of the transcendental deduction was to show that these same categories make possible the kind of world we live in, namely, a world in which self knows objects. In other words, to talk about "acts of judging" is to deal in abstractions. It is a self that judges, and what it judges about are objects. The transcendental deduction is thus an extension of the metaphysical deduction.

The main points of the argument of the transcendental deduction are as follows: (1) All experience, whatever else it involves, is of the succession of a variety of contents. (2) To be experienced at all, these successive data have to be combined, or held together in unity for a consciousness. (3) Unity of experience therefore implies unity of self. (4) This unity of self is as much an object of experience as anything else is. (5) It follows that experience of both the self and its objects rests on prior acts of synthesis, which, because they are the conditions of any experience at all, are not themselves experienced. (6) These prior synthoses are made possible by the categories.

Kant's argument may perhaps be made clearer by reference to Locke's rather facile remark that the mind somehow "collects" certain of its ideas. Among these, according to Locke, are some of our most important ideas, for example, the ideas of substance and causality. In a sense, Kant's transcendental deduction was an attempt to define Locke's "somehow" with precision. Kant saw, as Locke did not, that the concept "collection" undermines the empirical criterion of meaning. Unlike, for example, the idea "red," substance and cause do not have their sources in experience. On the contrary, they make possible the very experience that would explain them.

THE CONDITIONS THAT MAKE EXPERIENCE POSSIBLE

Human experience is an experience of objects, or, as they may be called, unified representations. Human experience, that is, does not consist merely in a subjective flow of sense data in a mind that claims all these data as its own. With such a flow, "objects" are to be contrasted: Objects occupy, or have, an objective order different from their place in one's individual mental life. But what is implied by the existence of such "objects of representation"?

We have stated above that appearances are themselves nothing but sensible representations, which, as such and in themselves, must not be taken as objects capable of existing outside our power of representation. What, then, is to be understood when we speak of an object corresponding to, and consequently also distinct from, our knowledge? It is easily seen that this object must be thought only as something in general = x, since outside our knowledge we have nothing which we could set over against this knowledge as corresponding to it.

Now we find that our thought of the relation of all knowledge to its object carries with it an element of necessity; the object is viewed as that which prevents our modes of knowledge from being haphazard or arbitrary, and which determines them a priori in some definite fashion. For in so far as they
are to relate to an object, they must necessarily agree with one another, that is, must possess that unity which constitutes the concept of an object. But it is clear that, since we have to deal only with the manifold of our representations, and since that $x$ (the object) which corresponds to them is nothing to us—being, as it is, something that has to be distinct from all our representations—the unity which the object makes necessary can be nothing else than the formal unity of consciousness in the synthesis of the manifold of representations. It is only when we have thus produced synthetic unity in the manifold of intuition that we are in a position to say that we know the object. But this unity is impossible if the intuition cannot be generated in accordance with a rule by means of such a function of synthesis as makes the reproduction of the manifold a priori necessary, and renders possible a concept in which it is united.

All knowledge demands a concept, though that concept may, indeed, be quite imperfect or obscure. But a concept is always, as regards its form, something universal which serves as a rule. The concept of body, for instance, as the unity of the manifold which is thought through it, serves as a rule in our knowledge of outer appearances. But it can be a rule for intuitions only in so far as it represents in any given appearances the necessary reproduction of their manifold, and thereby the synthetic unity in our consciousness of them. The concept of body, in the perception of something outside us, necessitates the representation of extension, and therewith representations of impenetrability, shape, etc.

All necessity, without exception, is grounded in a transcendental condition. There must, therefore, be a transcendental ground of the unity of consciousness in the synthesis of the manifold of all our intuitions, and consequently also of the concepts of objects in general, and so of all objects of experience, a ground without which it would be impossible to think any object for our intuitions; for this object is no more than that something, the concept of which expresses such a necessity of synthesis.

In Kant's view, self and object are not independent entities but reciprocal elements in experience. If we start from object, we are led to self; if we begin with self, we are led to object. The experience of either one involves the experience of the other, and the experience of both depends on the prior occurrence of certain syntactical acts. Kant called these acts "transcendental" because, though never themselves experienced, they have to be presupposed to account for the existence of those empirical unities that are experienced, namely, "self" and "object." They have to be presupposed, that is, to account for the existence of experience as we know it. These syntactical acts depend on, and conform to, the categories.

There can be in us no modes of knowledge, no connection or unity of one mode of knowledge with another, without that unity of consciousness which precedes all data of intuitions, and by relation to which representation of objects is alone possible. This pure original unchangeable consciousness I shall name transcendental apperception.
A DISCUSSION OF KANT'S VIEW OF EXPERIENCE

This passage is undeniably difficult, partly because, like a juggler who has to keep a number of balls in the air at once, Kant found that the various concepts he was discussing—experience, self, and object—all involved one another and hence could not be discussed separately. But part of the difficulty also stems from the fact that—even after three hundred years—we are still so accustomed to thinking about the world in Cartesian and Lockian terms that it is hard for us to adjust to Kant's radically different way of looking at things.

Let us therefore examine a simple experience in terms of a traditional and then a Kantian type of analysis. Suppose that I hear a clock striking three. According to the traditional analysis, my experience is as follows: (1) The clock is an object out there, independent of me. That is, even if there were no "me" over here, the clock would still exist and still strike, unaffected in any way by my nonexistence. (2) I am over here, another independent object. If the clock did not exist I would still be myself, unaffected by its nonexistence—except, of course, that I would not now hear it strike. (3) But the clock does exist; it does strike. I hear it and then judge, "That is a clock striking three." This is the Cartesian and Lockian way of looking at things.

In contrast, Kant makes no metaphysical assumptions about independently existing minds and objects. Instead, he starts from the experience itself and asks, "What conditions make this experience possible?" In terms of the example, what must be the case for me to be able to have the particular experience of a clock striking three? In the first place, I must already have learned, at mother's knee or in school, that clocks strike and that one can tell time in this way. If I were a Zulu or a Bantu and told time by the sun, I might have had no prior acquaintance with clocks. In this event, when the clock strikes three I would not have the experience of hearing the clock strike three. Doubtless, I would hear noises, but I would not be able to judge, "That is a clock striking three." Accordingly, the first condition of my being able to have the experience that I do have is possession of a number of empirical concepts, that is, concepts learned in experience. Though nobody, presumably, would deny that I possess such concepts, the traditional analysis does not bring this out, since it does not focus on the conditions that make experience possible.

According to Kant, of course, a priori concepts as well as empirical concepts are necessary conditions for experience. Furthermore, when these a priori concepts are taken into account, a wholly different notion of the self and its objects emerges. The next stage in Kant's analysis was designed to bring out these points. According to this analysis, when I judge, "That is a clock striking three," I am assigning an objective order to the successive strikes and am attributing them to a clock as their cause. That is, though the strikes have an order and a date in my own experience (having occurred later and earlier than other experiences of mine), they also have a public order and a public date, which I attribute to them. This, indeed, is the way I distinguish them from a dream that I might have about a clock striking. "Dreamed" strikes have an order and a date in my experience, but in recognizing them as having been dreamed I do not assign them an objective order as well.

Hence it is fair to call these three strikes an object whose cause is the clock. Of course, they are only a very simple object, consisting of three auditory sense data. Nonetheless, they are an object—for an object is precisely some set of sense experiences to which a public order and a public date are assigned. Accordingly, Kant's question can be rephrased as follows: "What is necessary for there to be an experience of an object?" In the case of the object "three strikes of a clock," what is necessary in addition to such empirical concepts as "clock" and "strike"?

It is important to see, first, that even the simplest of simple experiences contains diversity. Yet to be an experience, this diversity must be collected, or put together into unity. According to Kant's thesis, this putting together involves the categories—that is, nothing less than the categories are necessary to make even the experience of three strikes possible.

So much for "object"; what of "self"? Like its objects, the self is a collection—but it is a collection of desires, memories, expectations, feelings, and attitudes rather than of sense data. Moreover, though the self is a collection, it is not merely a collection. For if the self unifies the various data (in this case, the strikes) by collecting them into an object (the experience of a clock striking three), what unifies the self into the object (collection) that the self is admitted to be? The self cannot be a mere collection, for a mere collection cannot collect itself.9 In a word, what is true of the experience of objects is equally true of the experience of self: The experience of even the simplest of simple objects (three strikes) is possible only because of the synthseses that bind the experienced diversity into unity. But the self, too, is an object. Hence the synthses in question underlie the self just as much as they underlie its objects.

Here, then, is a plurality of noises experienced as "three strikes of a clock." According to Kant's analysis, this experience can occur only under the following conditions. To begin with, I must apprehend all three experiences as being similar.10 This does not mean that I must identify the noises explicitly as strikes. I may do this, of course; but it is not necessary that I do so in order to experience the strikes as three. It means simply that I must discriminate these noises from other, dissimilar noises. For instance, suppose a car happened to honk its horn between the first and second strikes; I do not count the horn noise as and thus get four. Furthermore, when I get to the second strike, it is necessary, in Kant's terminology, to "reproduce" the first strike.11 By "reproduce" Kant did not mean consciously recall: he meant merely carry over. That is, I must carry the first strike forward after it is over and combine it with the second. Since the first

9 This point was put with devastating force by F. H. Bradley: "Mr. Bain collects that the mind is a collection. Has he ever thought who collects Mr. Bain?"—Ethical Studies (Oxford, 1927), p. 39, n. 1.
10 Kant called this the "synthesis of apprehension in imagination."
11 This is the "synthesis of reproduction in imagination."
strike is over and done, it is fair to say that in carrying it over to the second
I “reproduce” it. If I could not do this, I would begin over again and never
get beyond “one, . . . one, . . . one, . . .” Then, having collected this plurality
or “manifold,” as Kant called it, into a unity, I must attribute it to the clock
as its cause.12 Otherwise I might be able to count three strikes, but I would not
experience, as I do, three strikes of a clock. That is, it is not enough that I merely
collect the plurality of noises under the empirical concept “strike.” I must order
them in accordance with an a priori rule—in this case, a rule that assigns the
strikes specific locations in objective time. I must assign the strikes that I hear
to a later time than the time that I assign to what is going on in the clock (clapper
tapping bell), and this time must be objectively later, not merely later in my
personal life. Finally, for the three strikes to be unified into one experience
of three strikes of a clock, there must be a self that endures at least as long as the
three strikes last. If I died and were reborn a different person between the first
and second strikes, I would say “one,” not “two,” when the second strike oc­
curred.

In insisting on the existence of a self that unifies experience, Kant did not
mean that we are conscious of the puttings together involved in experiencing
an object. It is not that I have to be self-conscious and say, “Now I am hearing
the first strike of a clock; now I am hearing the second strike, and I am the
same I that heard the first strike”; and so forth. Even if I were self-conscious
about my experience, this would be simply another and more complicated
experience the existence of which depended on prior, nonexperienced mental
operations. These “puttings together” (or “transcendental syntheses,” as Kant
called them) are, in fact, even more obviously the conditions of such an involved,
self-conscious experience than they are the conditions of the simple awareness
of “three strikes.”

As has been said, the three strikes of a clock are an object—doubtless a very
rudimentary object as compared with a desk, St. Peter’s in Rome, or Mount
Everest, but still an object. What are put together in this instance are three
identical, or nearly identical, noises. In the case of a desk, a much larger manifold
of visual and tactile materials is involved; in the case of Mount Everest, a still
vaster assemblage. But the principle is everywhere the same. They are all
objects-for-a-self. They all involve a temporal succession of data, recognized,
remembered, held together in a unifying experience, and assigned an objective
order and date. Furthermore, my experience, taken in its entirety, is a whole
in which the striking clock, the desk, St. Peter’s, and Mount Everest all have
temporal and spatial loci within a unified, one-dimensional time and a unified,
three-dimensional space. That is, my experience, as a whole, is one object in
the sense that it is a unified structure, or order, of sensory content. My experience
is, in fact, a cosmos.

So far we have been considering the knowledge situation from the object

12 This is the “synthesis of recognition in concepts.”

side (the strikes); the situation is the same when looked at from the point of
view of the self. If the three strikes are, as has been said, an object, they are
equally states of a self. And if the object is a synthesis of data of outer sense,
the self is a synthesis of data of inner sense.13 When we look for a self we never
find more than various synthesized experiences. The self and its objects are not
two distinct substances confronting each other in mutual independence; they are
simply two aspects of a complex situation. Looked at from one point of view,
experience is a self that knows a world of objects; looked at from the opposite
point of view, it is a world of objects known by a self. There is just as much
self as there is object and just as much object as there is self. Self and object
are correlative concepts.

Instead of hypostatizing self and its objects as independent entities, Kant held
that self and objects are both ordered elements in our experience. Experience,
to be experience, must be ordered, this was Kant’s point. This order presupposes
the existence of certain synthesizing activities that are not themselves experi­
exenced. Without them, the order that is found in experience, and that is an
empirical fact, would not be possible. This empirical self can become as much
an object of experience as can a desk or Mount Everest. But the self as object
is not the underlying synthetical activities. It as much presupposes those condi­
tions as do the desk and the mountain; it is as much made possible by them
as are the desk and the mountain. Experience is an ordered manifold, and “self”
and “objects” are names for elements in this manifold. The key to the nature
of knowledge, then, is order (or rule, or law); this is what makes experience—
including the self and its objects—possible. Without order, there is no experience
and hence no self and no objects.

DEDICATION OF THE CATEGORIES

So far, Kant has shown (providing his argument is correct) that an order of
some sort has to be presupposed as the condition of any experience, however
rudimentary. Kant next undertook to show that the world as we actually experi­
ence it—a world of relatively stable objects—reflects precisely those patterns that
he called categories and that he had derived from Aristotle’s twelve types of
judgment. To follow Kant through the detailed deduction of all twelve categories
(the “Analytic of Principles”) would require much more space than can be
afforded here. Let us therefore examine his procedure by considering his account
of the two most important categories, substance and causality.

Kant began his deduction of these two categories with some general remarks
applicable to both:

Experience is an empirical knowledge, that is, a knowledge which deter­
mines an object through perceptions. It is a synthesis of perceptions, not

13 Here we are considering what Kant called the empirical self. There is also, according to Kant,
a transcendental self (“the transcendental unity of apperception”), which underlies and makes
possible both the empirical self and the objects it experiences.
contained in perception but itself containing in one consciousness the synthetic unity of the manifold of perceptions. This synthetic unity constitutes the essential in any knowledge of objects of the senses, that is, in experience as distinguished from mere intuition of sensation of the senses. In experience, however, perceptions come together only in accidental order, so that no necessity determining their connection is or can be revealed in the perceptions themselves. For apprehension is only a placing together of the manifold of empirical intuition; and we can find in it no representation of any necessity which determines the appearances thus combined to have connected existence in space and time. But since experience is a knowledge of objects through perceptions, the relation [involved] in the existence of the manifold has to be represented in experience, not as it comes to be constructed in time but as it exists objectively in time. Since time, however, cannot itself be perceived, the determination of the existence of objects in time can take place only through their relation in time in general, and therefore only through concepts that connect them a priori. Since these always carry necessity with them, it follows that experience is only possible through a representation of necessary connection of perceptions.

The three modes of time are duration, succession, and coexistence. There will, therefore, be three rules of all relations of appearances in time, and these rules will be prior to all experience, and indeed make it possible. By means of these rules the existence of every appearance can be determined in respect of the unity of all time.

This argument starts, once again, from two basic distinctions. First, everyone constantly distinguishes between what is subjective (for example, dreamed strikes of a clock) and what is objective (actual strikes of a clock). Of course, I may on occasion be doubtful (Is that a dagger that I see before me? Am I awake or dreaming?). On occasion I may be mistaken. But everyone makes this fundamental distinction. Furthermore, it is not a distinction between what is inside experience and what is outside experience; it is a distinction within experience. Both the dreamed strikes and the actual strikes are segments of the flow of my experience; the mark of objectivity is the regularity and order of those segments to which I assign the status of objects.

Second, we all distinguish, within waking experience, between the order in which we happen to experience things and the order that those things have. For instance, we distinguish between the order in which we learn something and the order of the things we have learned: Many children study American history before they study ancient history; as a result, they hear about George Washington before they hear about Julius Caesar. But they do not, on this account, think that Washington lived before Caesar. Rather, they assign each to a single, public, temporal order that is independent of the subjective order in which they experienced it. Again, people may on occasion make mistakes, but the fact that mistakes are made itself validates the distinction in principle. And this distinction too is a fundamental one: Human experience would not be human experience without the notion of an order that is indifferent to the order of actual experience.

It follows that whatever is necessary for us to be able to make these distinctions must be the case, even though it may never be possible to verify this "whatever is necessary" directly in experience. To put this differently, the empirical criterion of meaning does not apply to itself. Hume had argued that we should accept nothing that cannot be verified [that is, encountered] in experience. Kant’s reply to this, in effect, was that we nonetheless may—indeed must—accept whatever is necessary for us to have experience, even though that itself is never experienced.

THE CATEGORIES OF SUBSTANCE AND CAUSALITY

According to Hume (and Kant), we never experience substances and we never experience necessary connections; we experience only succession. How then do we get the “idea” of stable, enduring entities, objects related causally to other objects? Having looked in vain for objects, Hume concluded that we “feign” them. Kant concluded that they must be attributed to a priori concepts, namely, to relational structures, or patterns—not innate ideas such as Descartes thought God had implanted in us—in terms of which our minds organize our experiences. Specifically, what we bring to experience are the notions of permanence and regular sequence. These are the categories of substance and causality. As for substance,

... our apprehension of the manifold of appearance is always successive, and is therefore always changing. Through it alone we can never determine whether this manifold, as object of experience, is coexistent or successive. For such determination we require an underlying ground which exists at all times, that is, something abiding and permanent, of which all change and coexistence are only so many ways (modes of time) in which the permanent exists. And simultaneity and succession being the only relations in time, it follows that only in the permanent are relations of time possible. In other words, the permanent is the substratum of the empirical representation of time itself; in it alone is any determination of time possible. ... If we ascribe succession to time itself, we must think yet another time, in which the sequence would be possible. Only through the permanent does existence in different parts of the time-series acquire a magnitude which can be entitled duration. For in bare succession existence is always vanishing and recommencing, and never has the least magnitude. Without the permanent there is therefore no time-relation. Now time cannot be perceived in itself; the permanent in the appearances is therefore the substratum of all determination of time, and, as likewise follows, is also the condition of the possibility of all synthetic unity of perceptions, that is, of experience. All existence and all change in time have thus to be viewed as simply a mode of the existence.

[14 Coexistence is the product of the third category of relation, or “Reciprocity” (see the table of categories, p. 35). It is necessary to pass over detailed discussion of the operation of this category—author.]
of that which remains and persists. In all appearances the permanent is the object itself, that is, substance as phenomenon; everything, on the other hand, which changes or can change belongs only to the way in which substance or substances exist, and therefore to their determinations.

Permanence is thus a necessary condition under which alone appearances are determinable as things or objects in a possible experience.

Thus Kant replaced the metaphysical relation of “inherence,” which the rationalists venerated and the empiricists ridiculed, with an empirical and temporal relation—endurance through time. A substance is not a mysterious substratum that somehow owns, or has, various attributes. A substance is a complex pattern of sensory materials that are experienced as permanent. And, of course, it is the pattern that is permanent, not the individual materials—these are constantly changing. In addition, since substance is one of the ways in which our minds organize our experiences, it follows that there are no transcendental, supersensible substances. The only substances are those stable, relatively permanent complexes that we encounter in experience. Finally, what is necessary is not that a particular empirical thing be a substance; what is necessary is simply that our minds order experience substantively. To ascertain which particular segments, or aspects, of experience are substances and which are not is a purely empirical inquiry. And there is nothing final or definitive about the results of this inquiry. All particular judgments are provisional, and future investigation may well upset present indications about the specific nature of the relatively permanent parts of experience. All we can be sure of is that, however we judge a particular matter in detail, we shall continue to organize our experience substantively.

This conception of substance is a good example of Kantian compromise. Kant was at one with the empiricists in denying any purely rational concept; he agreed with them that “substance-attribute” must be an observable relation. On the other hand, he held Hume to be mistaken in denying that the concept of substance has any objective validity at all. Substance-attribute is an empirically observable relation precisely because it is the product of a necessary function performed by the human mind in its task of regulating and ordering the world. Like the rationalists, Kant maintained that the necessity attributed to substance is real (not illusory, as the empiricists claimed). But, like the empiricists, he held that it is a mode of human experience (not an obscure force residing in allegedly independent substances-in-themselves, as the rationalists claimed).

Kant’s treatment of the problem of causality parallels his treatment of the problem of substance. In his view, not only do we attribute permanence to objects; we also attribute causality to them. That is, we believe objects to be related to one another systematically according to a rule of succession. There is a rule that relates sensory materials to one another so that they are experienced as a complex of sensory materials enduring together through time to form one object. In addition, there is a rule that relates each of these complexes to another complex so that the former is experienced as following the latter in a regular way—that is, one is experienced as the “effect” of the other.

The apprehension of the manifold of appearance is always successive. The representation of the parts follow upon one another. Whether they also follow one another in the object is a point which calls for further reflection. . . . For instance, the apprehension of the manifold of the appearance of a house which stands before me is successive. The question then arises, whether the manifold of the house is also in itself successive. This, however, is what no one will grant . . . . That which lies in the successive apprehension is here viewed as representation, while the appearance which is given to me, notwithstanding that it is nothing but the sum of these representations, is viewed as their object . . . . The object is that in the appearance which contains the condition of this necessary rule of apprehension.

Let us now proceed to our problem. . . . I also note, in an appearance which contains a happening (the preceding state of the perception we may entitle A, and the succeeding B) B can be apprehended only as following upon A; the perception A cannot follow upon B but only precede it. For instance, I see a ship move down stream. My perception of its lower position follows upon the perception of its position higher up in the stream, and it is impossible that in the apprehension of this appearance the ship should first be perceived lower down in the stream and afterwards higher up. The order in which the perceptions succeed one another in apprehension is in this instance determined, and to this order apprehension is bound down. In the previous example of a house my perceptions could begin with the apprehension of the roof and end with the basement, or could begin from below and end above, and I could similarly apprehend the manifold of the empirical intuition either from right to left or from left to right. In the series of these perceptions there was thus no determinate order specifying at what point I must begin in order to connect the manifold empirically. But in the perception of an event there is always a rule that makes the order in which the perceptions (in the apprehension of this appearance) follow upon one another a necessary order.

In this case, therefore, we must derive the subjective succession of apprehension from the objective succession of appearances. Otherwise the order of apprehension is entirely undetermined, and does not distinguish one appearance from another. . . . The objective succession will therefore consist in that order of the manifold of appearance according to which, in conformity with a rule, the apprehension of that which happens follows upon the apprehension of that which precedes. Thus only can I be justified in asserting, not merely of my apprehension, but of appearance itself, that a succession is to be met with in it. This is only another way of saying that I cannot arrange the apprehension otherwise than in this very succession . . . .

Let us suppose that there is nothing antecedent to an event, upon which it must follow according to rule. All succession of perception would then
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The empiricists' position and the rationalists' position. He agreed with the empiricists that there is no mysterious transfer of force, no exercise of power, manifold of sense, even though they can never be directly experienced as distinct elements in the seen the fact that when we experience an object, our representation succeeds in relation to something that precedes, does not justify me in assuming any succession in the object.

Kant's contention, in a word, is that if there were not (1) enduring complexes and (2) succession of these complexes according to a rule, we would not experience objects. But we do experience objects. Therefore there must be such rules, even though they can never be directly experienced as distinct elements in the manifold of sense.

Here, as with the concept of substance, Kant proposed a compromise between the empiricists' position and the rationalists' position. He agreed with the empiricists that there is no mysterious transfer of force, no exercise of power, in the causal relation. He agreed with them also that all particular causal judgments are based on observation of actual sequences and are provisional in character. But, according to Kant, although the empiricists were correct in maintaining that there is no necessary connection between particular matters of fact, they were mistaken in concluding that the principle of causality is false. To Kant, this was just the reverse of the mistake made by the rationalists, who concluded that because the principle of causality is necessarily true, the connections between particular events are necessary. According to Kant, the principle of causality is necessarily true, but the source of its necessity (as with substance) is in the structure of our minds.

THE PHENOMENAL OBJECT

We have now reached a point of major dispute in Kantian exegesis. What did Kant mean, in the transcendental deduction, by describing the object of representation as "something in general = x"? There is general agreement about what Kant did not mean. He meant neither the metaphysical substratum of the Scholastics and the rationalists nor the mere livelly-expectation-based-on-association of the empiricists. This is clear from his repeated criticisms of both positions. There is also general agreement that the x in the equation involves succession according to a rule. What distinguishes an object (or "thing") from a "mere blind play of representations, even less than a dream," is, as we have seen, the fact that when we experience an object, our representations succeed one another according to a rule, not according to a private fantasy in our own mind.

The parting of the ways in Kantian interpretation comes with the question, "What exactly are the elements, thus ordered, that succeed one another according to a rule?" The simplest interpretation is that by "representations" Kant meant the raw data of sense experience. According to this view, the desk you and I talk of seeing is not a public object "out there" in a public space. There are, in fact, two desks, or as many desks as there are viewers, for each viewer's sense data are his private subjective experiences. What is objective and public is simply the common order in which the various private sense data occur.

There seems to be no doubt that a great deal of the time Kant did think in terms of this relatively subjectivist point of view. There is also no doubt that he wanted to insist on more objectivity than this view permits. Kant was not particularly concerned by the fact that, according to the subjectivist view, an object is not at all what you and I uncritically suppose it to be. But he was concerned by the fact that, according to the subjectivist view, the object is not what Newtonian science supposes it to be—namely, objectively existing matter in motion.

As has been said, Kant wanted to show not merely that there is some order, or pattern, in experience (succession according to a rule) but that the rules according to which experience is ordered are those presupposed by Newtonian physics. Thus it is not surprising to find that the subjectivist view did not really satisfy him. In fact, he presents in the deduction, along with this view and by no means clearly distinguished from it, a much more complicated view in which the x involves not merely sense-data-according-to-a-rule but what Kant called a "phenomenal object." Because phenomenal objects (Newtonian matter in motion) are spatially and temporally organized, they are, like the sense data, modes of appearance. But they are also supposed, by both common sense and natural science, to be the causes of the ordered sense data (which constitute the whole of appearance, according to the subjectivist view). The difficulty with this view is not merely that the phenomenal object complicates the picture and occupies an anomalous place between things-in-themselves and representations. The fundamental difficulty is that, according to Kantian principles, the phenomenal object itself must be a synthesis of representations. But if it is, it cannot be the cause of the representations in question. This would amount to supposing it to be the product of that of which it is the cause.

SUMMARY

This discussion of the categories has brought us to a conclusion that parallels the conclusion drawn earlier about Kant's view of Euclidean geometry. As we

16 See p. 37.

17 See pp. 31-32.

18 This difficulty has been put very effectively by T. D. Weldon in Kant's Critique of Pure Reason (Oxford, 1947), p. 25. According to the view in question, "it would appear that there must be perception to give material for synthesis before there can be perception caused by synthesized objects. In other words, something must happen before it happens, which is certainly rather peculiar."
The concepts of substance, causality, and the rest are meaningless except as synthetical relationships within the spatiotemporal manifold. The very arguments that validate these concepts for experience limit them to experience. The result of their misapplication beyond experience is "transcendental illusion."

It follows that the answer to Kant's third main question—"Are synthetical a priori judgments possible in metaphysics?"—is negative. This general conclusion is obvious once the nature of the deduction has been grasped. But because metaphysical thinking had such a grip on men's minds in his day, Kant devoted many pages to an exhaustive demonstration of the principal fallacies of rationalistic metaphysics.

**Critique of Rationalistic Metaphysics**

Kant proposed to show that in each of the three main areas of rationalistic speculation—self, being-in-general, and God—the rationalists were involved in an illegitimate attempt to apply the categories to things-in-themselves.

**THE SELF**

As regards the self, the subject of study in rationalistic psychology,

... since the proposition "I think" (taken problematically) contains the form of each and every judgment of understanding and accompanies all categories as their vehicle, it is evident that the inferences from it admit only of a transcendental employment of the understanding... We therefore propose to follow it, with a critical eye, through all the predicaments of pure psychology... .

1) In all judgments I am the determining subject of that relation which constitutes the judgment. That the "I," the "I" that thinks, can be regarded always as subject, and as something which does not belong to thought as a mere predicate, must be granted. It is an apodeictic and indeed identical proposition; but it does not mean that the I, as object, am for myself a self-substance or being or substance...

2) That the "I" of apperception, and therefore the "I" in every act of thought, is one, and cannot be resolved into a plurality of subjects, and consequently signifies a logically simple subject, is something already contained in the very concept of thought... But this does not mean that the thinking "I" is a simple substance...

The analysis, then, of the consciousness of myself in thought in general, yields nothing whatsoever towards the knowledge of myself as object. The logical exposition of thought in general has been mistaken for a metaphysical determination of the object...

The whole procedure of rational psychology is determined by a paralogism, which is exhibited in the following syllogism.