

An Introduction to the Epistemology of  
Immanuel Kant  
With Special Consideration of  
Transcendental Aesthetic

A Thesis

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## Preface

I undertook this paper with the hope of working on the problem of existence. It soon became evident that I needed first to work out on the problem of epistemology. This was manifestly too broad for me to make any headway in a frontal attack. Therefore, I resorted to the more modest and promising aim of working in the Critique of Pure Reason of Immanuel Kant.

The Critique was still too much to handle adequately in a brief paper, with or without my simple undergraduate background. Therefore, I finally limited myself to working with Kant's general epistemology and especially with the problem of space and time. This latter is a grand problem in itself, but as presented in the Critique it is more nearly manageable than anything else which I considered.

Yet, when I was through, I had come back to the problem of existence, and I had a few clues as to directions for further progress.

In this paper I have tried primarily to introduce original insights into the questions which Kant aimed to solve. I have tried to raise questions more than to answer them, because in my present intellectual position it would be foolish to pretend for a moment that I have answers.

There has been much good work done on Kant, but I

have tried to do what other writers have not done, that is, I have tried to criticize Kant from the point of view of a young man of the twentieth century, a young man who has trouble taking anything for granted and who furthermore has a great suspicion of the meaningfulness of "logical necessity".

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All the quotations from The Critique of Pure Reason were taken from the Norman Kemp Smith translation. I have followed his pagination using A for First Edition pages and B for Second Edition pages.



An Introduction to  
Kant's Critique of Pure Reason

I. The Problem

In the Critique of Pure Reason Immanuel Kant attempts to resolve the problem of how it is possible for men to make synthetic a priori judgments. This was a problem which had been developing in his thinking for many years. His encounter with Hume's attack on the principle of causality, however, brought his thinking face to face with a threat to all knowledge, a threat which he was compelled to challenge. Kant was the first to realize fully the implications of Hume's analysis: he came to the conclusion that, if the Humian analysis of causality were correct, a similar analysis would eliminate all certainty in mathematics and in all science. All empirical knowledge would be reduced to a skeptical morass from which there was no escape. Kant set for himself the task of saving man's knowledge from this fate.

Human knowledge may be divided into two basic types: a posteriori and a priori. Hume had acknowledged the limited validity of a posteriori knowledge which is that knowledge derived from experience. Such a posteriori knowledge had one crucial weakness: it was always contingent and uncertain. Kant agreed with him on this point. "The fundamental presupposition upon which Kant's

argument rests--a presupposition never itself investigated but always assumed--is that universality and necessity cannot be reached by any process that is empirical in character."<sup>1.</sup>

Kant was firmly convinced that man does have a priori knowledge of a synthetic nature in mathematics and physics. He believed that, if Hume had realized the implications of the application of his analysis of causality to the fundamental principles of science and philosophy, i.e., they would lose their universality and necessity, he would have immediately realized that he had to go further on in order to find the truth of the matter. Kant's earliest position was that the existence of a priori mathematics and physics proved their possibility and that they were of undoubted validity. He must, however, go far beyond this to establish a solution to his problem. In the Critique as his argument develops he does not assume their validity as a premise, but through the use of the transcendental method he tries to prove their validity and to establish the limits of their validity. By a process of analysis of the conditions of the possibility of experience (a process known as the transcendental method) he works toward a solution. In the transcendental method Kant assumes, as basic psychological fact, that we have perceptions of individual

1. Norman Kemp Smith, A Commentary to Kant's 'Critique of Pure Reason', London: MacMillan & Co., 1930, p. xxxiii.

objects, and the question arises as to how this experience is possible.

The Critique is the result of Kant's effort to determine what are the principles of a priori knowledge of a synthetic nature on which all such knowledge is ultimately grounded.

## II. Definitions

Since Kant was the first major German philosopher to write in his native German language, he had the privilege of establishing many definitions as he wanted. As some of his definitions are peculiarly Kantian it is necessary in the beginning to set forth just what he meant by his more important terms.

A priori is a term used to denote that element in knowledge which is completely independent of all experience. A priori knowledge, then, is that knowledge which is had independently of all experience. It is opposed to a posteriori knowledge which is had only through experience and which is completely contingent on experience. A priori judgments or propositions are those which make assertions on the basis of a priori knowledge. A priori judgments are not, however, necessarily pure, for they may contain some empirical element. For instance, they may involve empirical concepts between which a relation is asserted with necessity. Only judgments based on a priori knowledge can be made with necessity. The

judgment that "A caused B" involves reference to two empirical concepts, events A and B, and the synthetic assertion of a relation between them which, according to Kant, can be known a priori only. A priori knowledge is independent of experience and it is purely formal. A priori judgments are always judgments of relations between objects. Judgments to the effect that a particular object exists or has certain sensuous characteristics can never be made on an a priori basis.

"The a priori, then, is merely relational, without inherent content; it is synthetic, and therefore incapable of independent or metaphysical proof; it is relative to an experience which is only capable of yielding appearances." 2.

Without sense experience of objects or inner experience of the activities of the self a priori knowledge has no objects and is not truly knowledge. Without objects a priori forms are empty.

There are two criteria by which a priori knowledge can always be distinguished from a posteriori. All a priori knowledge and judgments have the characteristics of necessity and universality, and only a priori knowledge has these characteristics.

"First, then, if we have a proposition which in being thought is thought as necessary, it is an a priori judgment...If, then, a judgment is thought with strict universality, that is, in such manner that no exception is allowed as possible, it is not derived from experience, but is valid absolutely a priori." 3.

2. Ibid., p. xxxvi.

3. B 3-4.

Either of these characteristics is, by itself, a sufficient test of the a priori nature of a judgment since no empirical judgment could have either. This follows from the fact that any empirical judgment is contingent on past experience and hence cannot give logical necessity or empirical universality which would be unverifiable. Though either universality or necessity separately may be more easily established for a particular judgment, it will still be true that both are characteristics of the judgment.

A priori then denotes the formal element in experience and in knowledge of the world of possible experience had independently of all experience.

A further analysis of knowledge indicates that there are two kinds of judgments which can be made: analytic and synthetic. All judgments fall into one or the other of these two categories. The first of the two, the analytic, adds nothing to man's knowledge but clarifies what is already present in it. These judgments perform an explicative function in human experience. Analytic judgments take such forms as "All automobiles have motors." The predicate here adds nothing to our knowledge of the subject "automobiles" since the "having of motors" is already thought as a necessary part of the concept of "automobiles". The having of motors may be thought of as a part of the concept of "automobiles" in an unclear manner, but since the predicate

is a necessary part of the definition of the subject, it cannot be said that the assertion adds anything to our knowledge of automobiles. All analytic judgments are made a priori. It would be absurd and even impossible to make an a posteriori analytic judgment: for, if the predicate is not thought as an attribute of the subject, the assertion is synthetic, and if the predicate is thought as an attribute of the subject, it can only be so known analytically since concepts can never be known a posteriori. There is no problem in understanding how one can make analytic judgments since they are merely the dissection of concepts present in the mind.

On the other hand Kant calls synthetic judgments ampliative, because they actually add to our knowledge. A synthetic judgment is one in which the predicate adds to the concept of the subject something not already contained in the concept of the subject. Any judgment in which an analysis of the subject can reveal the predicate is analytic, but in a synthetic judgment no amount or kind of analysis of the concept of the subject could ever extract the predicate. All a posteriori judgments are synthetic. The statement, "This house is brown", is an a posteriori synthetic judgment. No analysis of the concept "house" can ever reveal the color of this house. It is understandable how one can make a posteriori judgments, for one is simply asserting a connection

found in experience. But how can one assert a priori, that is, with necessity and universality, a synthetic judgment and know that it will be valid? If one assumes that man does have valid a priori synthetic, this is indeed a problem which demands solution.

"Upon such synthetic, that is, ampliative principles, all our a priori speculative knowledge must ultimately rest; analytic judgments are very important, and indeed necessary, but only for obtaining that clearness in the concepts which is requisite for such a sure and wide synthesis as will lead to a genuinely new addition to all previous knowledge." 4.

Experience is a crucial term for the Critique since Kant uses experience as the starting point of his analysis of human knowledge. Experience might initially be called the stuff of empirical knowledge, that is, experience is the way we know the world. Experience, then, will be the logical beginning for all knowledge. Kant defines experience in several places with minor variations. The following definition gives his most general view in the perspective of his theory of knowledge:

"Experience is an empirical knowledge, that is, a knowledge which determines an object through perceptions. It is a synthesis of perceptions, not contained in perception but itself containing in one consciousness the synthetic unity of the manifold of perceptions." 5.

Experience, and this is the essential point of the definition for Kant, involves a unity of knowledge, is in fact itself a unity and as such has an order among its

4. A 9-10: B 13-14.

5. A 177: B 218.

parts. Experience then is something more than mere sensation, which is clearly by itself unordered and without any form.

Knowledge is the last term which needs to be defined at this point. Despite the importance of this term for his theory Kant only defines it in two places in the entire Critique. Knowledge is "an objective perception" in "either intuition or concept. The former relates immediately to the object and is single, the latter refers to it mediately by means of a feature which several things may have in common."<sup>6</sup> The implication of this definition which is of special importance for his epistemology is that there can be no knowledge without objects or at least possible objects of perception. As Kant succinctly expresses this in the Critique, "Thoughts without content are empty, intuitions without concepts are blind."<sup>7</sup>

### III. The Copernican Revolution and the Transcendental Method .

Kant's presupposition that certainty can never come from empirical processes coupled with his belief that man does have a priori synthetic knowledge led him to a startling conclusion. If we do have synthetic a priori knowledge of the world of experience and can predict

6. A 320: B 377.

7. A 51: B 75.



the order of events, perhaps the condition of the possibility of the knowledge is the fact that the objects conform themselves in experience to the a priori forms. Might it be that objects are made to conform to the a priori forms, that is, the synthetic relations, rather than the a priori knowledge of the relations conforming to conditions of things in themselves? This is Kant's Copernican Revolution, and whether his analogy is in any sense appropriate or not is irrelevant. It is a significant revolution in the development of human thought.

"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." 8.

Starting from this contention, Kant sets out on an investigation which leads him to the conclusion that the external world which we know can exist as it does only if our minds are constituted and function in certain ways which determine the constitution of the external world.

The Copernican Revolution leads naturally to his transcendental method of proof.

"'Transcendental' is primarily employed by Kant as a name for a certain kind of knowledge. Transcendental knowledge is knowledge not of objects, but of the nature and conditions of our a priori cognition of them." 9.

8. B xvi.

9. N.Kemp Smith, op.cit., p.74.

With this method Kant must establish that the world of experience could not exist without the presence in our minds of a priori synthetic principles which determine it and through which we can have a priori synthetic knowledge of the constitution of that world. This is "proof by reference to the possibility of experience."<sup>10.</sup> The result of such proof will be to establish logically both that we do have a priori synthetic knowledge and that it is valid in experience.

"This new transcendental method is proof by reference to the possibility of experience. Experience is given as psychological fact. The conditions which can alone account for it as psychological fact, also suffice to prove its objective validity; but at the same time they limit that validity to the phenomenal realm." 10.

Thus, the procedure which Kant follows in the Critique is a thorough analysis of experience to determine whether it has any universal and necessary characteristics and what might be the source of such characteristics. In the course of the analysis Kant determines that space, time, and the relations specified by the categories of the understanding are universally necessary to explain the unity and the fact of experience.

#### IV. Phenomena and Noumena

An overall view of the Kantian world is useful in any attempt to understand the role of its specific elements. Kant divides reality into two parts which are

10. Ibid., p.45.

variously called reality and appearance, the thing in itself and representation, noumenon and phenomenon. Due to his imprecision in the use of his terms Kant is often speaking of reality when he means appearance or phenomenon, but the importance of the distinction is nonetheless real for his epistemology. Phenomena qua phenomena exist only for minds. They are products of the mind created in accordance with its basic constitution. They have no existence independent of the knowing mind, but phenomena point beyond themselves to an unknown and unknowable reality or noumenal realm of objects which through their relation to the noumenal self evoke the phenomenal representation. Despite their pointing beyond the phenomena they give no knowledge of the noumena other than that they exist. Kant in the Critique is not clear even in his assertion of the existence of the noumena which he refers to with terms such as "problematic". This has led some critics, especially those with an idealistic bent, to the conclusion that he postulated the noumena merely as a way of limiting the phenomenal world and that he did not mean in any way to concede their existence independent of minds. However, in the light of the total cast of his phenomenalism which he made every effort to keep from becoming an idealism, this seems an unwarranted conclusion. Furthermore, in the Prolegomena there is one clear statement of his position with regard to the

existence of the noumena.

"Consequently I grant by all means that there are bodies without us, that is, things which, though quite unknown to us as to what they are in themselves, we yet know by the representation which their influence on our sensibility procures us, and which we call bodies, a term signifying merely the appearance of the thing which is unknown to us, but not therefore less actual." 11.

Unless one is willing to hold that Kant reduced experience to a state of perpetual hallucination and to disregard the implications of such words as representation (of what?), the conclusion is unavoidable that Kant did believe that there were independently existing real objects which are not directly known by the mind. The objects would be the subject of a transcendent metaphysic if it were possible.

#### V. The Epistemology

A brief statement of the Kantian epistemology will make this conclusion clearer. It will also be well to keep Kant's own summary statement in mind.

"Thus all human knowledge begins with intuitions, proceeds from thence to concepts, and ends with ideas. Although in respect of all three elements it possesses a priori sources of knowledge, which on first consideration seem to scorn the limits of all experience, a thoroughgoing critique convinces us that reason, in its speculative employment, can never with these elements transcend the field of possible experience, and that the proper vocation of this supreme faculty of knowledge is to use all methods, and the principles of these methods, solely for the purpose of penetrating to the innermost secrets of nature, in accordance with every possible principle of unity..." 12.

11. Paul Carus, ed., Kant's Prolegomena, Chicago: Open Court, 1933, p. 43.

12. A 702: B 730.

When two or more noumena, the self and some other noumenon or noumenal objects, come into a certain unspecified and unspecifiable relationship, certain sensations are evoked through intuition and simultaneously ordered by the activity of the productive imagination, which is an unconscious mechanism, into perceptions of individual objects. These perceptions are known as representations or phenomena. They appear under and are ordered only within the appropriate forms of the sensibility, the forms of which are time and space. There are no representations which do not appear under the forms of the sensibility. Through the application of the categories the understanding then orders the phenomena with relation to one another in other than spatial and temporal terms. By this procedure the representations are transformed from mere individual objects to parts of a phenomenal world, the world of nature. To this point the activities of the mind have been constitutive; they have actually determined the formal relations and the secondary qualities (if I may be allowed that term) of the objects of experience. The final function of the mind is a regulative one carried out by what Kant refers to as the Pure Reason. The Pure Reason attempts to order the concepts of the mind with reference to certain ideas or principles. These ideas point beyond the world of experience, however, for the ultimate ground of their unity, and hence the unity

they seek is unattainable in human knowledge. Hence, the phenomenal world has only a certain high degree of unity but not absolute rational unity.

In short, the phenomenal world is a pure product of the constitution of the mind acting in response to the stimulus provided by the relation between the noumenal self and noumenal objects. With the realization that experience is the product of the mind we must give up the notion that we can gain from experience any knowledge of the world of things in themselves. We have absolutely no grounds for expecting any correspondence between our representations and the things in themselves. We can only know in the way in which we can know, and that way precludes our ever having knowledge of things in themselves. But the constitution of our minds, due to its constitutive role in experience, also guarantees the actuality of a priori knowledge of the phenomenal world.

A Commentary on  
Transcendental Aesthetic

I. General Introduction

"The capacity (receptivity) for receiving representations through the mode in which we are affected by objects, is entitled sensibility. Objects are given to us by means of sensibility, and it alone yields us intuitions; they are thought through the understanding, and from the understanding arise concepts. But all thought must, directly or indirectly, by way of certain characters, relate ultimately to intuitions, and therefore, with us, to sensibility, because in no other way can an object be given to us." 1.

When a noumenal object is in proper relation to the noumenal self, a manifold of sensation arises through the sensibility within the forms of the sensibility. The sensations as such have no order; they are ~~are~~ pure sense responses. However, simultaneously with their birth they are formed and ordered under the forms of the sensibility and by the activity of the productive imagination operating unconsciously. The result of this activity is the formation of a representation.

If one takes away from this representation by a process of analysis the elements of sensation and the concepts added to the manifold by the understanding, he finds a very specific residuum. He finds that figure and extension are the universal characteristics of all objects thought as external to the knower. These must arise from a priori conditions in the mind. "These

1. A 19: B 33.

belong to pure intuition, which, even without any actual object of the senses or of sensation, exists in the mind a priori as a mere form of sensibility."<sup>2</sup> Further examination reveals that there is one other characteristic of all objects, whether the self as object or objects perceived as external to the self: all objects are known under the form of time.

Figure and extension are limitations of space. Only objects known as objects independent of the knower are thought as in space, and all objects known as independent are thought as in space. Space is the form of outer sense, that part of sensibility which deals exclusively with objects perceived as existing independent of the knower. Ultimately all appearances are known under the form of time, the form of inner sense. These are pure forms of sensible intuition and are the ground of certain a priori principles of knowledge. Without these forms experience itself would not be possible. Since they are requisite for experience and are pure forms, they play a constitutive role in experience. Since they are a priori, they can be known a priori with apodeictic certainty and serve as a basis for synthetic a priori judgment.

The first result of the application of the transcendental method is the establishment of the forms of the sensibility as a source of a priori knowledge.

2. A 21: B 35.



Kant maintains that they are the ground of the possibility of pure mathematics and geometry.

But what are space and time? Kant suggests three alternative positions that might be held on this question. They might be considered real things in themselves, independent existents. They might be considered real characteristics of things in themselves independent of their being intuited. They might finally be merely the forms of our intuition under which all objects must be intuited but which give no knowledge of the relations or forms of things in themselves. Kant's answer is the latter statement. His procedure in establishing this contention is a metaphysical and transcendental exposition of the two concepts.

"By exposition (expositio) I mean the clear, though not necessarily exhaustive, representation of that which belongs to a concept; the exposition is metaphysical when it contains that which exhibits the concept as given a priori." 3.

"I understand by a transcendental exposition the explanation of a concept, as a principle from which the possibility of other a priori synthetic knowledge can be understood." 4.

From his expositions of the concepts of space and time Kant then proceeds to draw several important conclusions.

## II. The Expositions of Space

In order to refer sensations to something outside

3. A 23: B 38.

4. A 25: B 41.

the mind of the knower space must be logically presupposed. In order further to order the objects to which the sensations are referred in relation to one another space must be presupposed. Since space is the presupposition of the reference of the sensations to objects, space itself cannot be an empirical concept. N. Kemp Smith states this argument as follows:

"As sensations are non-spatial and differ only qualitatively, the representation of space must have been added to them. And not being supplied by the given sensations, it must, as the only alternative, have been contributed by the mind. The representation of space, so far from being derived from external experience, is what first renders it possible. As a subjective form that lies ready in the mind, it precedes experience and co-operates in generating it." 5.

This same general argument can be applied to the concept of time.

We can think of empty space, but we cannot represent the absence of space. It is, then, the condition of all outer appearances. Thus it must be an a priori representation and is not dependent upon appearances. "It is an a priori representation which necessarily underlies outer appearances." 6.

The concept of space has certain peculiarities which differentiate it from general or discursive concepts. There is only one space. We cannot represent several separate spaces as independent of one another, but we do represent different spaces as parts or limitations within space, the whole space. But these

5. N.Kemp Smith, op.cit.,p.101.

6. A 24: B 39.

different spaces are not thought of as parts of a whole which is made up of the parts. Rather space is thought as necessarily preceding as a whole the parts which are within it. Our empirical intuitions are of parts of space, and we cannot have an empirical intuition of the one space. Space must, therefore, be a pure intuition, an a priori intuition. Furthermore, that space is one can be known from the fact that intuition gives only perceptions and perceptions are always of single objects. Space then is necessarily one and an a priori intuition.

A concept is commonly thought of as subsuming a number of representations under it, frequently an infinite number. But concepts are not thought as containing an infinite number of representations within themselves. Space, however, is represented as infinite and as containing an infinite number of representations within it. All the infinite number of parts of space exist within it. "Consequently, the original representation of space is an a priori intuition, not a concept."<sup>7.</sup>

In the transcendental exposition of space Kant makes explicit his assumption that apodeictic certainty cannot be drawn from empirical concepts or data. Still he does not attempt to justify this presupposition, although it is the crux of his argument at this point.

7. A 25: B 40.

He argues that geometry is a science which produces synthetic a priori judgments. Since mere concepts cannot give rise to synthetic judgments (they produce only analytic judgments) and empirical data gives only contingent judgment, the concept of space must come from an a priori intuition in order to account for the apodeictic certainty of all geometrical propositions. But none of this is possible unless "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..."<sup>8.</sup> Thus Kant contends that his explanation alone makes reasonable the possibility of geometry as a body of synthetic a priori truths about the world of experience.

### III. Conclusions from the Expositions of Space

Kant draws two conclusions from his expositions of space. First, "Space does not represent any property of things in themselves, nor does it represent them in their relation to one another."<sup>9.</sup> This follows because no determination of things in themselves can be intuited a priori. From this it then follows that space is the form of outer sense and nothing more. It is the subjective condition of our sensibility. Since the

8. B 41.

9. A 26: B 42.

condition of receptivity must precede the reception of data, the form must be a priori and a pure intuition. Because it is a priori, it can give rise to synthetic principles governing the phenomena which occur under it, principles which determine a priori the relations between the phenomena.

"It is, therefore, solely from the human standpoint that we can speak of space, of extended things, etc. If we depart from the subjective condition under which alone we can have outer intuition, namely, liability to be affected by objects, the representation of space stands for nothing whatsoever." 10.

Because space is the form of our peculiar sensibility, we must accept the fact that there may be other beings which intuit appearances under other forms and that space is merely a form of our sensibility rather than a characteristic of things in themselves. Propositions about objects in space, however, are valid so long as it is kept in mind that they are true only about appearances constituted by the form of our sensibility and that they are meaningless if applied to transcendent objects.

This argument is summed up in Kant's use of the terms empirical reality and transcendental ideality. Space is empirically real; it is an objective part of the phenomenal world and as such is the ground of a priori synthetic principles describing and constituting it.

10. A 26: B 42-43.

Space is objective because it is a characteristic, the form, of all objects of outer sense. On the other hand, it is transcendently ideal. With reference to things in themselves it is nothing but an idea in a mind; "it is nothing at all, immediately we withdraw the above condition, namely, its limitation to possible experience, and so look upon it as something that underlies things in themselves."<sup>11.</sup>

#### IV. The Expositions of Time

The judgment of coexistence or succession is dependent on the presupposition of time. Since time must be presupposed in order to assign these relations to empirical objects, it cannot be derived from them. Time cannot be an empirical concept.

Time, like space, can be represented to us through intuition as empty of objects, but we cannot represent the absence of all time. All appearances occur in time. Time, therefore, is the subjective condition of all appearances whatsoever. As the subjective condition of all appearances it must be a priori.

Because of the a priori character of time it serves as the ground of apodeictic principles of the relation of events in time. This follows again from Kant's empirical contingency presupposition. The constitutive

11. A 28: B 44.

role of time enables us to know about events rather than through them.

All times are parts of the same time. Any representation "which can be given only through a single object is intuition."<sup>12.</sup> The successiveness of events is furthermore based on a synthetic judgment which cannot be derived from a mere concept. It is, says Kant, "immediately contained in the intuition and representation of time."<sup>13.</sup> This leads to the conclusion that time is not a general concept but an intuition, a pure intuition.

Time, as space, is infinite. Each time is part of the single time and exists in it. Kant argues that, since time is the whole containing its parts which alone can be known through empirical intuition, time must be represented through pure intuition. Only the parts of time can be represented by concepts; the one time which contains all times can only be represented through immediate pure intuition.

In the transcendental exposition Kant argues on the basis of the experience of alteration. Alteration is unintelligible except in time, but time must be presupposed in order to make alteration intelligible, rather than known through alteration. Except in successive times it is incomprehensible how there can be

12. A 31: B 47.

13. A 32: B 47.

an object which both is and is not of a certain character; in successive instants an object can change in character so that it is first of one and then of the other character. Time then is the ground of the possibility of the laws of motion and alteration. In order to be the condition of that possibility it must be an a priori intuition.

#### V. Conclusions from the Expositions of Time

From these expositions Kant concludes that time does not exist of itself nor is it a relation of things in themselves. His argument against its being a thing in itself is one sentence: "Were it self-subsistent, it would be something which would be actual and yet not an actual object."<sup>14.</sup> If it were a condition of things in themselves, it could not be known a priori but only a posteriori and would not have the universality and necessity which it has as the a priori subjective condition of our sensibility.

In his next two conclusions Kant involves himself in a contradiction. He says that time "cannot be a determination of outer appearances; it has to do neither with shape nor position, but with the relation of representation in our inner state."<sup>15.</sup> Yet, one of the determinations of outer objects is duration which is meaningful

14. A 32-33: B 49.

15. A 33: B 49.



only in time; outer appearances are spatial and temporal. Contradicting his previous statement, he says, "Time is the formal a priori condition of all appearances whatsoever."<sup>16.</sup> The former contention is inconsistent with the logic of his argument to this point and is poorly supported. He says that the lack of shape in inner intuition leads us to use such examples as a line to represent time. We do use such representations, but what does this have to do with whether time is the form of outer sense appearances? Nothing. Objects experienced as external are four dimensional: they have the three spatial dimensions and the temporal dimension of duration. We must hold that his real conclusion is the latter one. His argument for this latter conclusion is that all representations exist in our minds and hence under the form of inner sense, which is time.

"Just as I can say a priori that all outer appearances are in space, I can also say, from the principle of inner sense, that all appearances whatsoever, that is, all objects of the senses, are in time, and necessarily stand in time-relations." 17.

Time must be the a priori form of all appearances both of inner and of outer sense.

Time, then, is the form of our inner sensibility and, if this peculiar type of sensibility is abstracted from our experience, time has no validity for objects as things in themselves. Kant states this as follows: "It has objective validity only in respect of appear-

16. A 34: B 50.  
17. A 34: B 51.

ances, these being things which we take as objects of  
our senses."<sup>18.</sup> The italics are Kant's, but we must  
assume that he actually meant to say "as objects of  
our sensibility", for otherwise he is omitting the self  
as object which occurs only under the form of inner  
sense. This leads him to assert that time is purely  
a condition of our subjective sensibility and cannot  
be held to be a condition of things in themselves. But  
because time is the condition of all appearances, it is  
objective with reference to them.

Kant sums up in the same terms he used with space.  
Time is empirically real, objectively valid for all  
appearances qua appearances. It is the universal and  
necessary condition of all appearances. But it is only  
the subjective condition of our sensibility. By no  
reach of the imagination can we assert that time gives  
us any knowledge of things in themselves. Time is  
transcendentally ideal.

"What we mean by this phrase is that if we ab-  
stract from the subjective conditions of sensi-  
ble intuition, time is nothing, and cannot be as-  
cribed to the objects in themselves (apart from  
their relation to our intuition) in the way  
either of subsistence or of inherence." 19.

Kant feels that the forms of space and time are at  
this point securely established as pure intuitions on  
the basis of which we can arrive at apodeictic princi-  
ples for experience. Similarly he has closed the door

18. A 34: B 51.  
19. A 36: B 52.

on any attempt to use space and time to describe the noumena. Space and time are meaningless when used to understand that reality which is beyond all possible experience. Edward Caird sums up Kant's conclusion as well as any of the critics.

"Hence we cannot say that all things are in time or in space, but we can say that all phenomena, i.e., all things as they present themselves in perception to us, are in time and all external phenomena are also in space. This is expressed more formally by saying that time and space are empirically real and transcendentally ideal; i.e., real in so far as they are the forms under which objects are presented to us in sense, real from the point of view of the ordinary consciousness or of experience, but ideal when we look at them from the point of view of that distinction between things in themselves and things for us, which a critical view of the faculty of knowledge forces us to make." 20.

#### VI. Kant's Elucidation

In the Elucidation Kant makes three points.

- a. Time is real as the form of inner intuition.
- b. Time and space are sources of a priori knowledge.
- c. Time and space are the only forms of the sensibility.

These are the three key points which he must make in Transcendental Aesthetic.

The question to be raised, as was noted earlier, is what kind of reality time has and, similarly, what kind of reality space has. Kant argues primarily on the reality of time, because he had been most severely

20. Edward Caird, The Critical Philosophy of Immanuel Kant, Glasgow: Maclehose & Sons, 1909, p.277.

criticized for his doctrine of time. Kant is sure that he has made it clear that time cannot be regarded as a real part of the noumenal world. Time has a subjective level of reality which makes it objective in Kantian terms.

"Certainly time is something real, namely, the real form of inner intuition. It has therefore subjective reality in respect of inner experience; that, i. e., I really have the representation of time and of my determinations in it. Time is therefore to be regarded as real, not indeed as object but as the mode of representation of myself as object." 21.

Again it must be stated that time is also the mode of representation of all objects of outer experience as well. Time is really part of all of one's experience. But one's experience is always phenomenal and only phenomenal. Man knows things only in his mind and the representations in his mind are phenomena, not things in themselves. "Thus empirical reality has to be allowed to time, as the condition of all our experiences; on our theory, it is only its absolute reality that has to be denied." 22.

The argument brought against this position is that change in ourselves is undeniably real. Change only occurs, or is comprehensible, in time. Therefore, time must be real in the same way as the changing self in order for the change itself to be real. This, however, is a false dichotomy between objects of outer sense and

21. A 37: B 53-54.

22. A 37: B 54.

objects of inner sense. They are both known in the same way, that is, as appearances. Hence, the argument for the absolute reality of time is no more valid than the argument for the absolute reality of space which Kant feels has been thoroughly trounced both by the idealists and by his arguments. Both outer objects and inner objects, that is, the activities of the self, are known only as representations. The self is known no more immediately than are the objects of outer sense.

"...in neither case can their reality as representations be questioned, and in both cases they belong only to appearance, which always has two sides, the one by which the object is viewed in and by itself (without regard to the mode of intuiting it--its nature therefore remaining always problematic), the other by which the form of the intuition of this object is taken into account." 23.

So long as one is dealing with appearances, he must take into account the fact that he is dealing with objects as constituted by the forms of the sensibility of the knowing mind which is not a passive receptor but a formulator and organizer of all the responses which noumenal relationships give rise to in it.

As a priori forms space and time are sources of a priori knowledge. Since all appearances must appear under the forms of space and time, their forms can be known a priori. Kant maintains that pure mathematics is an example of knowledge based on these forms. This knowledge is knowledge of representations only, for

they alone are known through these forms, the forms of our peculiar kind of sensibility. Thus the function of the sensibility marks off the boundary of the validity of the forms: they have no validity, no meaning, no descriptive value beyond the realm of possible representations. "This ideality of space and time leaves, however, the certainty of empirical knowledge unaffected, for we are equally sure of it, whether these forms necessarily inhere in things in themselves or only in our intuition of them."<sup>24.</sup> Because they are limited to this reality in the way that they are and because they are universally valid in it, they are a well-spring of a priori synthetic judgments.

Kant contends that there cannot be any other than these two forms of sensibility. His only reason for this contention is that other possibilities all require something empirical as a presupposition while experience itself presupposes space and time. This argument is very weak. He might more safely have said, and it would have been sufficient for his purposes, that these are the only two forms which sensibility does have which are revealed through the transcendental method.

#### VII. Kant's General Observations on the Transcendental Aesthetic

The world we know then is nothing but appearance. These appearances arise in us through the sensibility

24. A 39: B 56.

or our ability to be affected by noumena. Intuition presents us with appearances or representations which reveal absolutely nothing about the nature of the noumena. We intuit things only in the ways that we can, that is, under the forms of space and time, and these forms are peculiar to our own kind of sensibility. We do not intuit things as they are, but only as we are able to intuit them being constituted as we are. If we were removed or the peculiar sensibility we have were altered, space and time would be nothing; the appearances themselves would not exist as they do. All experience is conditioned by our sensibility. It is our sensibility alone which we can know. The matter of sensibility, which is sensation, can only be known a posteriori, but the forms, space and time, can be known a priori. Through careful analysis we may come to know the sensibility very thoroughly, but no degree of analysis of the sensibility and its product, the representations, could ever give us any knowledge of things in themselves.

As is implicit in his whole development Kant wants to establish the Transcendental Aesthetic with absolute certainty. He tries to make its validity perfectly clear by an example. The crucial role in the example is played by his empirical contingency presupposition--there can be no certainty of knowledge drawn from empirical data. For his example he also assumes the apodeictic certainty



of geometry and pure mathematics as synthetic knowledge of the objects of experience to which they are conventionally applied.

If one assumes that space and time are real conditions of things in themselves, he asks, what problems arise? How can we have the apodeictic certainty of geometry about objects in space? Kant argues that geometrical propositions are synthetic and apodeictic, but where do they come from with such certainty? Geometrical propositions must come from either intuitions or concepts which may be either pure or empirical, a priori or a posteriori. Empirical concepts derived a posteriori surely cannot serve as a basis for synthetic apodeictic judgments because of the empirical contingency assumption. Concepts, even a priori ones, are subject only to analysis and hence cannot give rise to synthetic judgment. Therefore, the only source for such knowledge is pure intuition. How is this possible? By giving oneself an object in pure intuition. Represent a pure a priori object in intuition, and on this one can found synthetic a priori judgments with apodeictic certainty. How could one say more than this? How could one say that things in themselves are the same as the subjective conditions under which one knows or represents them?

"It is, therefore, not merely possible or probable, but indubitably certain, that space and time, as the necessary conditions of all outer and inner experience, are merely subjective conditions of all our intuition, and that in relation to these



conditions all objects are therefore mere appearances, and not given us as things in themselves which exist in this manner." 25.

To say one knows an object is certainly to say more than that one knows its relations to other things. Yet, an examination of our knowledge of objects as representations reveals that we never know anything more than relations, relations between objects in the forms of space and time. In intuition we have only relations between objects.

It had been objected after the first edition of the Critique that Kant had degraded appearances to the level of mere illusion. This was, of course, far from his intent. His aim was to distinguish between things in themselves and things as they are presented to us as representations. This distinction must be made simply because we are active in the creation of the representations; we are not mere passive receptors of images nor reflectors of them. But the fact that we are active in the creation of the representations does not mean that they are thereby illusory. Only the attempt to regard these appearances as things in themselves leads to the creation of an illusion. The attempt to regard them as things in themselves reduces to an absurdity, says Kant, because we have to regard space and time as properties of things as phenomena, but only as properties of phenomena. To regard space and time, which are

infinite and necessary without being anything inhering in substances or having substance, as properties of things in themselves is to become involved in absurdity. Surely to hold this position would be to reduce appearance to illusion.

Kant's final argument is that we do not commonly maintain that God is in space and time. Yet, if space and time are the universal characteristics of things in themselves, we must do so. The only alternative is to view them as subjective forms of intuition which are objective and valid only for representations. By so doing we shall avoid all the absurdities which the effort to regard space and time as things in themselves or the conditions of things in themselves produces.

General Remarks and Criticism  
of the Critique

I. A Fundamental Criticism

In plain terms the most fundamental criticism of Kant's Transcendental Aesthetic which is relevant to the entire Critique is that Kant goes far beyond what his own reasoning enables him to assert. In fact, he goes against his conclusions in making any assertions at all about the noumena. One of the main points of the Critique is that nothing can be known of the noumena, but he apparently feels quite secure in making numerous pronouncements about what the noumena cannot be or what their characteristics cannot be. Either the noumena are beyond all comment and are closed to all fruitful investigation so that nothing whatsoever can be said of them, or they are in some way knowable and can be investigated to some degree.

In each case when Kant wants to assert something about the noumena, he does so on the ground that what he is saying is logically necessary and therefore, presumably, must be the case. He is overlooking the fact that human reason, the fountainhead of logic, is as much a form of the way we know as space or time could ever be conceived to be, more so in fact because we can never intuit logic, never experience it in relation to the objects of outer sense, and therefore can never

possibly have anything but a priori knowledge of it. Probably the greatest mystery in epistemology is how logic can work in categorizing experience meaningfully so that we can manipulate it. Hence, to attempt to describe or manipulate concepts of the noumena on the basis of logical forms is as invalid as to attribute to them the characteristics of color or temperature, if we accept the Kantian analysis.

The realization that the mind is not a mirror must be carried over in its implications to the laws of logic. Logical necessity is ultimately meaningless, that is, it is as transcendently ideal as are the forms of the sensibility according to Kant.

This has many important implications, not the least of which is that Kant's assertion that sensation implies the existence of something to stimulate it is empty. Ultimately, following Kant's argument one is reduced to complete silence on the subject of the noumena. We can know neither what they are nor what they are not nor even whether they are.

Hence, Kant has no grounds for saying that the forms of sensibility cannot correspond to characteristics of things in themselves. His arguments are in each case drawn from analogy with phenomena and hence are, by his own argument, invalid. Against those who would hold, for instance, that space and time are subsistent realities he says:

"they have to admit two eternal and infinite self-subsistent non-entities (space and time), which are there (yet without there being anything real) only in order to contain in themselves all that is real." 1.

This argument involves a concept of the substance of the real or the real as substance which is meaningful only when speaking of a Kantian phenomenal world, if at all. So long as one does not know the substance of the ultimately real, the noumena, it is impossible to assert meaningfully that time and space are not characteristics of the noumena.

## II. Conclusions Unacceptable to Kant

Among the other implications of such a position is that Kant can no longer refer to noumena as objects, for he has no reason for believing that they are separate objects rather than one reality without any limitation which manifests itself through the phenomena. Further, there can be no grounds for the assertion that there are noumena. The postulation of them as logically necessary to explain representations is metaphysically worthless. Hence, the distinction between the object as representation and the thing in itself becomes invalid and useless, because however logically necessary it may be it is metaphysically meaningless. If one holds with Kant that empirical data can give no knowledge of the things in themselves and that only a priori knowledge

1. A 39: B 56.

can have any certainty, then he is absolutely bound forever to deal only with phenomena and to refer to these as reality. It becomes futile to act as if the real were anything other than that with which you deal in experience. Certainly, even Kant would not have wanted to follow these conclusions. Yet, I think that he would have had to if he had been pushed. What is the alternative course?

### III. Transcendental Aesthetic as an Antinomy

In his entire discussion of space and time it seems that Kant is close to, if not actually involved in, an antinomy of Pure Reason. The antinomy is stated in the "First Conflict of the Transcendental Ideas" as follows:

Thesis

The world has a beginning in time, and is also limited as regards space.

Antithesis

The world has no beginning, and no limits in space; it is infinite as regards both time and space." 2.

As Kant points out, both sides have logically sound positions, and either could win in a given argument dialectically. His conclusions in the antinomies is that we must recognize that we have no answer and that these positions are merely to serve as guides in our search for order in experience.

"If in employing the principles of understanding we do not merely apply our reason to objects of experience, but venture to extend these principles beyond the limits of experience, there arise pseudo-rational doctrines which can neither hope

for confirmation in experience nor fear refutation by it." 3.

Since the concepts of space and time are the nucleus of one of the antinomies of Pure Reason, we certainly cannot argue that they are grounds for any apodeictic principles of knowledge.

#### IV. The Representation of Space and Time

Does it really make sense to assert that we intuit space as a whole? No, the concept of space as one is just that and no more, a concept of a single thing. How can one intelligibly say that we can represent an infinite entity? Because of the simple fact that we can never see more than one side of an object at one moment, even as phenomena, we cannot say that we are given individual objects as wholes in perception. The attribution of individuality to an object is a result of both conceptual and perceptual activity. Likewise, we do not represent all of space at once, but by logical inference and extension of our empirical experience we conceive it as a whole embracing all separate spaces. To speak of representing space as a whole through pure intuition is a mistaken way of seeing the situation. We do not cognize the whole of space or of time in any way; the wholeness is an idea in our mind and nothing more.

Kant's arguments on the infinitude of space and

3. A 421: B 448-449.

time are basically specious; they are very much like some of Zeno's paradoxes in terms of their lack of profundity. The far more penetrating analyses of modern scientists have found this problem to be one of the deepest mysteries of the world both from the empirical and from the speculative points of view. His argument is to be further discounted, because it is simply meaningless to speak of representing an infinite object. We can conceive of one, but we cannot represent it to ourselves in any meaningful sense. Furthermore, as noted, the infinity of space and time is one of those ideas of the mind which involve one in endless antinomies.

#### V. Logical Priority

Kant argues that space cannot be an empirical concept nor can time, because they are logically presupposed before we can refer things to positions outside us or in a time sequence. It may well be that logically the concept of space must be prior to the reference of things to positions in space. But to what does this lead?

"For what is meant by priority in a purely logical sense? Merely that the concept (or judgments) said to be logically prior to another requires to be made explicit before and in order that the concept to which it is prior may be perfectly clear and distinct (or that the judgment may be arrived at by a perfectly cogent process of inference)." 4.

4. Henry Sidgwick, Lectures on the Philosophy of Kant, London: MacMillan & Co., 1905, p.41.



In what way can it be claimed that logical priority proves substantial priority or chronological priority or that it proves that the logically prior quality cannot be a characteristic of the thing in itself? Kant does not answer the question in any satisfactory fashion."

#### VI. Space and Time as Universals in Experience

In his effort to establish space (and time) as a "necessary a priori representation" Kant presents the following argument:

"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." 5.

A similar argument might be presented to reach nearly an opposite conclusion somewhat as follows: We can never represent to ourselves the absence of all objects, though we can very well conceive both all objects and space as not existing. The representation of objects must therefore be regarded as the condition of the appearance of space since space is never represented except as that in which objects exist even in pure intuition. Thus, the fact that space and time are universal concomitants of the appearance of objects is of no particular significance, because the appearance of the objects

is the universal concomitant of the representation of space and time.

VII. Distinguishing between Inner and Outer Sense

"Necessity and universality are thus sure criteria of a priori knowledge, and are inseparable from one another." <sup>6.</sup> If we accept this, we shall have to say that space is not an a priori form, for it is not universal in its constitutive role as is time. Space is the form of some only of our experience, and it is only in having the experiences, that is, empirically, that we can determine that it is one of those which occur under the form of space. Therefore, space must be an empirical concept which is known only in and through experience, or else there must be some principle, never mentioned by Kant, by which we attribute certain sensations to objects external to us. But if there is some principle on the basis of which we can differentiate between experiences in which the activity of the self is the source and those in which external objects are the source, Kant never gives it in any conclusive manner. The only apparent basis on which we decide is that of direct experience of some objects as external and separate from ourselves in their representation. Space is as empirical as are objects.

6. B 4.

### VIII. Thoughts on the Status of Time

There is, however, some question as to the universality of time in experience also. In both high level mystical experiences (if it is proper to speak of levels of mystical experience) and in the simple experiences of ordinary men, especially aesthetic experiences, there is reported an absence of any sense of time. The experience does not occur under the form of time. This would incline one to question whether time can be called a universal form of human experience. In retrospect, the experience is shown to have occurred in time, to have endured through a period of time not set by the mind of the person having the experience. The time which passed despite its absence in the representations of the experient, it seems, must have had some kind of existence independent of the representations. The experience occurred in time but not under the form of time, and hence it cannot be maintained that the sensibility of the person contributed the form of time to the experience. The experience occurred in a time independent of the person. Apparently, unless we are to discount the testimony of many persons, we must concede that there are experiences which do not occur under the form of time, experiences in which time does not play a constitutive role.

But there is an even more universal form of experience which seems to indicate that time is independent of the mind of the individual. Probably everyone has

had the experience of timelessness while sleeping. There is in the memory a remembrance of having been awake, then a blank (perhaps the memory of some dreams), then an awareness of being awake and a belief that one has been asleep. Commonly we assert that it is the same person who went to sleep who woke up, but on what grounds do we make this assertion? The continuity of private time in the mind of the sleeper is broken. His mind did not contribute the form of time to his experience of sleeping. Yet, there is an apparent lapse of time as attested by other persons around him and by the changes in his physical environment such as clocks, the position of the sun and the moon, etc. The person then attributes a time lapse to the period for which his memory is blank and which he calls a period of sleep. But he attributes a very specific amount of time to this period. How can he do this? How does one attribute an empirical measurement to a form which he has, according to Kant, contributed to the experience himself? Why should he concede the possibility that the amount of time, if it is determined solely by his private and subjective sensibility, might be wrong? If time is the form of inner sense, how can there be phenomenal determinations of it such as clock time undoubtedly is?

The effort to regard time as merely the form of inner sense, a pure constitutive element in experience

contributed by the mind of the experient, leads to so many problems, which are unanswerable in terms of the Kantian position, that it must be regarded as basically a failure. If we are to begin our analysis with experience, we must accept the experience of discontinuity of time and even of experience and the merely inferred continuity of the experiential world. Neither space nor time are universal conditions of human experience. To assert that they are is to ignore the testimony of many of the most highly regarded and careful observers and reasoners who have ever lived and to ignore the logic of the experienced world itself. Therefore, neither time nor space is a ground for a priori synthetic principles with apodeictic certainty if one accepts Kant's presuppositions of empirical contingency.

#### IX. Thoughts on the Formation of Phenomena

Kant's contention that there are noumenal objects existing independently of our perception can lead to further conflicts with much of his epistemology. Once the existence of noumena is conceded there may well be some way of knowing about them. This possibility opens up if we hold that the phenomena arise only in response to some relation between noumena and the noumenal self.

If one assumes that space and time are a priori forms of intuition which can give rise to a priori knowledge of the form and order of the representations,

it follows that they must be regular or consistent in the form which they give to phenomena if we are to be able to account significantly for the fact that the same form is given to many individual but similar groups of sense data. If we give to a particular manifold of sensation the same spatial form which we gave to several other manifolds of sensation on other occasions, there is indeed a further question. Is the organization of sensation into a perception of an object an arbitrary act or is it in some way particularized by its relation to a particular noumenon?

If the form of the phenomena is arbitrary, we face a serious difficulty in explaining how we manipulate the phenomena, that is, unless we concede that the phenomena are pure products of mental activity both in their form and in their actions. But if we concede this, we have no grounds for believing that there are noumena, and the world has been reduced to the subjective creation of individual minds. If we follow this line of thought, we must conclude in solipsism. In other words, if the mind is orderly but arbitrary in the form which it gives the manifold of sensation (as Kant assumes), we cannot account for public experience without the further assumption of a pre-established harmony in the minds of all individuals, an assumption which would be the only way to avoid solipsism.

If the form is particularized as a result of the

relation with the noumenon, then we cannot say that the phenomenal world is purely a product of the constitutive activity of the human mind. It is a product of the relations between noumena and the noumenal self. It is, in fact, in some way revelatory of the noumena.

If our manipulation of phenomenal objects is not purely a product of the activity of our minds, it must be a product of our minds acting in response to relations in the noumenal world. If the noumenal relations were unchanging, there could be no change in the phenomenal world. There is change in the phenomenal world. Hence, there must be change in the relations in the noumenal world. These changes are in some way reflected in the changes in the phenomenal world. This is intelligible if we recognize that the responsive activity of the mind is systematic.<sup>7</sup> For if the activity is systematic and also contributes to the creation of the phenomena, we can say that there will be a systematic distortion of the relations in the noumenal world as presented in the phenomenal world. Since the distortion will be systematic, it is revelatory of an analogous order in the noumenal world.

7. I am indebted to Dorothy Emmet in her book The Nature of Metaphysical Thinking, London: MacMillan & Co., 1957, for this emphasis on the responsive character of human experience and the systematic character of the distortion introduced into the representations by man's perceptual processes. However, I believe that my argument from these points develops along significantly different lines from those Emmet follows.



If then we follow Kant in his assumption that there are noumena, in order to explain experience we must take into account the role which noumena play in the formation of the phenomena. Since they do play a role and the role of the mind is a systematic constitutive activity, we can know something of the order of the noumena by analogy with the order of the phenomena. Kant did not specifically reject this sort of interpretation, but he did not develop it either. Apparently he did not think that this position could have any significance in the formation of a metaphysic.

"Now a thing in itself cannot be known through mere relations; and we may therefore conclude that since outer sense gives us nothing but mere relations, this sense can contain in its representation only the relation of an object to the subject, and not the inner properties of the object in itself." 8.

If one holds to a view of metaphysics which requires that a metaphysic deal with the substance of ultimate reality, this position can have no significance for metaphysics. Yet, there is the possibility that the ultimate nature of reality is process, that the ultimate fact or reality is change, and that substance is merely a false and misleading concept with no metaphysical significance. In that case a metaphysic would deal solely with the relations within reality. There is no reason for being tied to the notion that a metaphysic must deal with the nature of ultimate reality as substance. The



basic fact of experience is change and not permanence, and this may be revelatory of the basic nature of reality as process. This approach to metaphysics places a heavy burden on our ability to conceive of reality, but it is mainly a burden because it requires a change in the way we think and not because it is inconceivable.

#### X. On Synthetic Knowledge

If, then, the phenomena are revelatory in some way of the relations between noumena and the noumenal self, there is open a new course for explaining the possibility of synthetic knowledge with the universality and necessity characteristic, according to Kant, of a priori knowledge. This would be a posteriori knowledge in terms of its origin, but we do not have to accept Kant's presupposition that there can be no certainty from empirical data. If the phenomena give clues to the relations of the noumena and the noumena are part of an ordered realm, we should be able to determine some facts about that world which will enable us to make universal and necessary propositions about experience. We can have universally valid synthetic knowledge not because our minds determine the order of phenomena, but because the order of the phenomena corresponds indirectly but systematically to the order of the noumena which have been systematically distorted in the act of perception.

If reality is not a disordered realm, it is not, as Kant assumed, impossible to derive certainty from a posteriori knowledge, for it is possible that in observation someone will comprehend the order of the noumena which he can then systematize abstractly in such manner that he can predict phenomenal order. By transforming an inductively derived system into an abstract model and developing a deductive system from it one can arrive at logical necessity. Logical necessity comes, not from the origin of the system and concepts, but from the form in which they are presented and rationally manipulated. In fact, Euclidian geometry, which Kant cited as an example of a group of synthetic a priori truths, we can see how this sort of transformation takes place.

Geometry began as an empirical science in Egypt, and then under the Greeks it became an abstract science. As an abstract science based on definitions, axioms, and postulates it gained logical certainty but no other kind. The proof of this came only in the nineteenth century when it was discovered that other geometries could be developed, and in the twentieth century the limited usefulness of Euclidian geometry was proven when other geometries were necessary to describe phenomenal occurrences. This means that systems which have logical certainty, systems which meet Kant's standard of apodeictic truth can be endlessly built, but they

will not necessarily constitute part of human knowledge except in so far as they are regarded as objects in themselves. Synthetic a priori judgments can be made because, beginning with a few acute observations of the order of phenomenal objects, an abstract system can be built deductively which may describe phenomenal experience if the conditions of the definitions are met. The condition~~x~~, which makes it possible for these a priori judgments to be knowledge, is not the fact of the a priori character of the forms of the intuition, but the original order of the noumena which is systematically distorted by the perceptient system, part of which is the sensibility as we have it. Kant's Copernican Revolution is not successful.

### Concluding Thoughts

In the Critique of Pure Reason Kant accomplishes two important tasks. First, he makes abundantly clear the constitutive, constructive role of the mind in all human knowledge. Second, he presents a picture of human knowledge as a very limited kind of enlightened ignorance. Each of these seems today obvious to almost every thinking person, but one must remember that these notions were not well accepted in Kant's day. The ideas had cropped up earlier in the history of philosophy, but Kant made them central in all discussion of epistemology.

The Critique is subject, as is any work of man which must be done with the knowledge available at the time of its creation, to various criticisms both of a logical and an empirical nature. Yet, the work stands as an achievement of undeniable value in the history of Western thought. One cannot study it without coming to a deep awareness of the finitude of human knowledge, a precious sense of the mystery of the world which sometimes seems so simple when we are able to successfully control some part of it.

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