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THE CONCEPT OF SPACE IN KANT'S 'CRITIQUE OF
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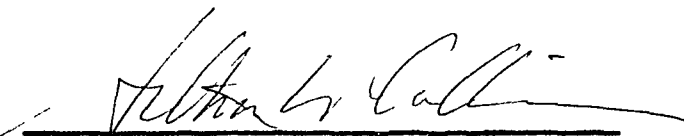
THE CONCEPT OF SPACE IN KANT'S 'CRITIQUE OF PURE REASON':
DIFFERENCES IN THE ROLE OF SPACE IN THE AESTHETIC
AND ANALYTIC OF THE TWO EDITIONS OF THE CRITIQUE

A dissertation submitted to the Graduate Faculty
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CONTENTS

INTRODUCTION.....	1
CHAPTER ONE: THE GOALS OF THE KANTIAN ENTERPRISE.....	6
CHAPTER TWO: KANT'S PHILOSOPHY OF SPACE IN THE METAPHYSI- CAL AND TRANSCENDENTAL EXPOSITIONS.....	40
CHAPTER THREE: SPACE AND TIME AS CONDITIONS NECESSARY FOR HUMAN KNOWLEDGE: A PRELIMINARY VIEW.....	96
CHAPTER FOUR: SPACE AND THE TWO EDITIONS OF THE ANALYTIC.....	122
CHAPTER FIVE: KANT'S REFUTATIONS OF IDEALISM AND THE EXPANDED ROLE OF SPACE IN THE SECOND EDITION OF THE <u>CRITIQUE</u>	170
CHAPTER SIX: CONCLUSION.....	254
SELECTED BIBILIOGRAPHY.....	263

INTRODUCTION

The purpose of my argument here is to show that space plays a more important role in the Second Edition of the Critique of Pure Reason than in the first. Although other sections of Kant's works will be discussed I will focus here primarily upon Kant's Aesthetic and Analytic as found in the first two editions of the Critique,¹ and will also examine, to some extent, the Preface and Introduction to the respective Editions. By comparing these two editions of Kant's work it will be exhibited that the role of space in the Second Edition is significantly strengthened in respect to the first.

By examining the Preface and Introduction to each edition of the Critique it will be shown that in the Second Edition what I call the 'Argument from Analogy' presents itself for the first time in the Critique. This argument asserts that what is true for the 'pure' sciences ought to be true for Critical metaphysics. This argument, it is argued, lends to the Second Edition a more positive emphasis upon the expansion of human knowledge rather than the more negative emphasis upon its limitation, as is found in the first.

When viewed in conjunction with the Aesthetic the 'Argument from Analogy' serves to bridge the logical gap between the role which space plays in relation to the synthetic a priori judgements of the pure sciences of geometry and pure mech-

anics, on the one hand, and metaphysics, on the other. The lack of this Argument from Analogy and the Transcendental Expositions in the First Edition, leaves us wondering about the relation between the pure intuitions of space and time as found in the synthetic a priori judgements of the pure sciences and those found in metaphysics.

Moreover, in the Aesthetic, it is not only the case that the role of space is strengthened in the Second Edition in its relation to the establishment of metaphysics as a science. Also, in the Second Edition version of the Aesthetic, in the Transcendental Exposition the arguments on space are more convincing than those on time and tend to contribute toward the completion of Kant's goals in the Critique to a greater extent than the arguments of the First Edition.

The Deduction of the categories, as found in the First Edition, emphasizes time in two significant respects. The Subjective Deduction, in the First Edition, exhibits experience as having a serial temporal character. Moreover, in the Deduction of the First Edition, it is only time which Kant asserts as requisite for all human knowledge. In the Second Edition the Subjective Deduction and hence the essentially temporal character of experience is eliminated. Also, space and time, in the Second Edition, are both asserted by Kant as necessary conditions for objective human knowledge. Hence, in the Second Edition version of the Deduction I will show space to be more significant than in the first both relative to the role of time as well as in relation to objective human knowledge.

The motivation for these and other such changes in the Critique may be viewed as a consequence of the Garve-Feder review. This review of the First Edition of the Critique will be examined in detail. The specific criticisms found therein will be scrutinized in relation to the changes in what I call the 'Refutations of Idealism' of the Second Edition. These additions are shown to serve as replies to the criticisms of of the Garve-Feder review.

Moreover, because these alterations place a greater emphasis upon the role of space, not only do they serve to buttress my assertion of the greater import of space in the Second Edition but also, in view of the Garve-Feder review, are understandable as part of a general effort on Kant's part to reply to criticisms of his philosophy.

There are a number of senses in which space will be found to be more significant in the Second Edition of the Critique than in the first. Not all of these changes in the role of space have an equal bearing upon Kant's general epistemological doctrine, but all do represent recognizable shifts, some more important than others, within his epistemological framework.

In the Second Edition, and only in this edition, we will find that time, for its determination, requires space. We will find there that it is only if space is presupposed that Kant believes time to be possible as a pure intuition. Space is seen there as the permanent through which time, which manifests a constant flux, can be represented.

Moreover, it is only in the Second Edition that we will

find that time, if it is to be represented as an appearance, must also be related to that which is stable in appearance--an outer or spatial object. Knowledge of that which is in a state of flux is determined through that which is stable, and Kant within the Second Edition of the Critique believes that such stability can be found only among objects of outer experience.

But even more significant than Kant's identification of both substance within the field of appearance and substance itself, with the spatial, in the Second Edition, is the fact that Kant, in the Second Edition and not in the first, puts forward the view that in order for any appearance to be known as an object of knowledge it must either be in space or be represented in spatial terms. This represents a radical departure from the doctrine of the First Edition where time alone is the formal sensible condition necessary for all objective knowledge.

In so far as the Critique of Pure Reason is a treatise which aims at the establishment of the valid limits of human knowledge it would appear that its most significant goal is fulfilled differently in the different editions of Kant's work. Because in the Second Edition Kant alters these limits so that knowledge is determined by virtue of its relation to space, at least in principle, the limits of human knowledge will be seen to be more strictly established in the Second Edition of the Critique than in the First. Because, in the Second Edition, objects of knowledge are either objects of outer sense or objects of inner sense which can be represented to outer sense

it follows that those exclusive objects of inner sense, which in the First Edition might qualify as objective, in the Second Edition would not.

As a consequence of this shift it would appear that that which Kant considers cognitively real is always spatial. Thus, the Critical metaphysics which is the intended result of the Critique, if it is to be properly restricted, so that it applies only to objects of human knowledge, must have application only within the realm of the spatial. This, in effect, excludes the exclusively inner objects of empirical psychology as proper objects of a meaningful metaphysics, and gives us, in the Second Edition, a Critical metaphysics whose judgments have application to objects representable in outer sense --spatial objects.

NOTES

1. These are the editions of 1781 and 1787. Following the procedure of Norman Kemp Smith, references of the edition of 1781 will be signified by the letter "A" and references to the edition of 1787 by the letter "B". Thus, the letter which precedes the page number in the text will serve to indicate which edition of the original German text is being referred to.

CHAPTER I

THE GOALS OF THE KANTIAN ENTERPRISE

In order to understand the role which space plays in the Critique of Pure Reason it is necessary to first understand the Critique as a unified systematic whole. One way to gain insight into what the Critique is about is to examine Kant's self-professed goals which he wishes his work to fulfill. These goals are put forward in both the Preface and the Introduction to the Critique.

As we are concerned with comparing the two editions of the Critique, a comparative examination of the Preface and Introduction of each of the two editions would seem in order. Apart from containing necessary clarifications of the Kantian terminology, in these sections of the Critique Kant attempts to tell us what it is that he hopes his work to accomplish. By comparing his prefatory remarks to the two editions to each other, I believe that we will see that although Kant's basic goal for the Critique remains the same in both, the means which he chooses for its achievement varies somewhat significantly. This difference in Kant's choice of means for the establishment of metaphysics as a science will be shown later to have a direct bearing upon the difference between the role which space plays in the two edi-

tions of the Critique.

In the Preface to the First Edition of the Critique of Pure Reason Kant tells us that the purpose of his enterprise is to restore metaphysics to her rightful position as the queen of the sciences.¹ He intends to save her from both despotic dogmatists and anarchistic sceptics, and return her to her deserved position. The key to the rehabilitation of metaphysics lies in the answer to one "key question"; "what and how much can the understanding and reason know apart from all experience?"² The delimitation of this area shall be accomplished with apodeictic certainty.³ Echoing Newton's dictum of Hypotheses non fingo, "I feign no hypotheses..."⁴ Kant tells us that everything "which bears any manner of resemblance to an hypothesis is to be treated as contraband."⁵ All speculative metaphysical hypotheses are to be ignored,⁶ and only well substantiated claims are to be accepted.

But in spite of the clarity of his purpose, his Preface to the First Edition tells us very little about how he intends to accomplish his goal. We are left with a number of questions: What is the connection between the delimitation of the proper realm of the understanding and reason, and the rehabilitation of metaphysics? What sort of argument is Kant to use to exhibit these limits to us? What is his method?

In the Preface to the Second Edition, Kant gives us a more detailed explanation of his intentions and thereby clarifies much of what is obscure in the Preface to the First Edition.⁷ He tells us that his enterprise will require a

change in philosophical orientation and will rely upon an analogy with the sciences. This change in philosophical orientation is what is known as the 'Copernican Revolution', which in turn, is dependent upon the with the sciences. It is to Kant's view of the sciences which we now turn.

Kant surmises that the discovery which led to the creation of the science of geometry involved the realization, on the part of the mathematician, that his true method "was not to inspect what he discerned either in the figure or in the bare concept of it...."⁸ The mathematician had to shift his perspective from the mere 'object'⁹ of the science, the triangle or its concept, to the a priori elements it contains, which he brought to his representation of it. All the mathematician can ascribe to the figure is that which he has already put there.¹⁰ His conclusions are not dependent upon the discovery of certain attributes of the geometrical object which are already there, but rather in the explication of these attributes of the figure constructed by him. Mathematics, according to Kant, is a science which creates rather than discovers that with which it deals. It was this shift from the study of an object already there, to the study of those figures constructed by the human mind, which resulted, according to him, in the creation of geometry as an apodeictic science.

According to Kant, a similar change in orientation took place in the empirical sciences--though quite a bit later--which resulted in their entering upon the "highway of science". Accidental observations cannot lead to a rule un-

less they are made in accordance with a plan. Natural scientists must be interrogators of nature if they are to make any systematic sense out of that with which they are confronted. According to Kant, the laws of nature do not reside in nature, apart from the human mind, but rather in the human mind itself, which constructs them. The scientist cannot find laws already made in the objects of science independently of his mind; he must create these laws. No doubt he must do this in a manner consistent with his observations, but these observations, of themselves, yield no laws.

It should be noted that these laws are not mere subjective figments of the imagination. If not for the objects of the sciences, scientific laws would be empty. Yet, according to Kant, these objects do not have the innate ability to organize themselves. The organization of nature is a function of the human mind, and the laws of nature are one of the means which the mind utilizes to create a system of order among those objects which are given to it.¹¹ Thus, just as was the case with mathematics, natural science is created¹² rather than passively apprehended.

It is this shift away from that perspective which views the subject as a mere passive receptor to the view of the subject as an artificer of the structure of the universe, which Kant believes to be characteristic of Copernicus' substitution of a heliocentric explanation in astronomy for a geocentric one. The Copernican hypothesis was as compatible with the testimony of the unaided senses as the geocentric hypothesis. Its advantage over the Ptolmeic method lay in

the fact that it explained the facts of geometry in a simpler and more mathematically harmonious fashion.¹³ If Copernicus would have viewed the individual as a mere passive spectator of nature he would have had no reason to doubt the geocentric hypothesis. It is only because of the desirability of organizational simplicity, as a product of a created hypothesis, that the geocentric hypothesis gained acceptance.

It was the shift in orientation to the human standpoint, in the determination of the movement of the stars, that led to the heliocentric hypothesis. This hypothesis, even in its genesis, was a product of the shift of the scientific focus to the subject as an active being. It was the postulation of the movement of the human spectator that led Copernicus to the determination of the fixity of the stars.¹⁴ Thus, it was the change in perspective, from a passive nature, to an active subject as the locus of a scientific order, that was the controlling factor in the creation of the geocentric hypothesis as well as in its acceptance.

It was the abundance of progress in the sciences, and what Kant saw as the relative stagnation of philosophy, that impelled him to formulate his Critical philosophy. He believed that Hume's notion of causality, derived from a repeated association of that which happens with that which precedes, was insufficient as a basis for physics. For Kant the causal relation had to be stronger in order to account for the possibility of Newtonian mechanics as he saw it. Furthermore, Kant believed that because Hume denied the a priori element of human knowledge any valid epistemological status Hume

could neither validly believe in nor account for certainty
 16
 in mathematics.

Leibniz, on the other hand, constructed a metaphysical system through which he attempted to provide for rational knowledge, but in so doing expanded the rational, so as to include within it cognitive states which were commonly regarded as empirical. As hard as he tried he could make no absolute distinction between truths of reason and truths of fact. Granted that truths of reason are granted in the law of non-contradiction and those of fact in the principle of sufficient reason, it is still a necessary fact that God could not have created the world in a manner other than he did, and that the necessary and contingent are one at bottom. 17

No doubt Kant, as we shall see, was influenced by this Leibnizian doctrine, as he regarded some of the Newtonian laws
 18
 of motion as a priori. But even so, he realized that the overextension of the inner realm, the realm of pure reason, in the case of Leibniz, leads to the confusion of the empirical with the rational. 19
 As a result of this confusion, those sciences which are truly regarded as empirical were falsely believed, by Leibniz, to exhibit apodeictic certainty.

Thus, from a Kantian point of view, Kant's two major predecessors failed in the construction of an adequate metaphysics. If metaphysics is a fundamental science whose function is to delimit the parameters within which we may properly interrogate nature, it would appear, in principle, to
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 serve as the foundation of the sciences. It is in this sense that a Kantian would believe Hume and Leibniz to have failed.

Hume's philosophy did not produce principles strong enough to support either the pure or the empirical sciences of his day. Leibniz, on the other hand, produced a foundation which contained principles which were too strong.

Metaphysics, a Kantian would claim, fell into disrepute because of the sciences of Kant's day, taken as a whole, lacked a proper metaphysical base, and were apparently successful in spite of this. One might think that a building can be built only after its foundation is already constructed. Yet here the scientific edifice was apparently steady even though it lacked a metaphysical foundation. Thus, one could reasonably question the need for the builder of the foundation, the metaphysician, and the foundation itself, metaphysics.

Kant was thus faced with the problem of supplying the foundation of the sciences after they were already constructed. Although this may seem to be a reversal of the usual manner of doing things its very regressiveness contains certain distinct advantages. Because the edifice was already constructed, the foundation builder is able to examine it and obtain certain clues from its nature which may aid him in the construction of that foundation proper to it. Thus, Kant looks to the sciences to discern those elements essential to them in order to gain insight into what the essential elements of a scientific metaphysics are. This enterprise presupposes both an initial lack of scepticism of the metaphysical endeavor, as well as a belief in the intrinsic connection between science and metaphysics. These are presup-

positions which the Kantian enterprise hopes to justify in its completion. But for the moment what is crucial for us to recognize is the fact Kant does argue, in both the Preface and the Introduction to the Second Edition, that one must learn from examining the edifice, the sciences, what sort of foundation, metaphysics, it requires. This argument is what I shall call the 'Argument from Analogy'.

Metaphysics, for Kant, had not yet entered upon the secure path of a science. The metaphysician, if he is to be successful, must follow the lead of the mathematician and the natural scientist. Kant tells us: "Their successes should incline us, at least by way of experiment, to imitate their procedure, so far as by analogy which as a species of knowledge, they bear to metaphysics may permit." ²¹ The importance of this largely overlooked analogy ²² is further emphasized by Kant:

This attempt to alter the procedure which has hitherto prevailed in metaphysics, by completely revolutionizing it in accordance with examples set by geometers and physicists, forms indeed the main purpose of this critique of pure speculative reason. It is a treatise on the method not a system of the science itself. ²³

The Critique of Pure Reason is a treatise on the method of metaphysics. It is an attempt to revolutionize speculative metaphysics, by changing its method, in so far as is fitting, to resemble the methods of geometry and physics, with the hope that by imitating their methods, the metaphysician can imitate their successes.

The metaphysician, like the mathematician and natural scientist, according to Kant, must actively control his sub-

ject matter. Passive observation is insufficient. He must create a theoretical framework to accomodate the universe rather than to first accept the universe as already given and then to derive from it its theoretical framework. We must assume that we "have knowledge of objects a priori, determining in regard to them prior to their being given."²⁴ Metaphysics, like geometry, is in this sense a creative, rather than a passive science. The metaphysician is an organizer of the universe, but one who produces order according to his own a priori, rather than according to an alleged plan of nature itself.

Thus, Kant, in the Preface to the Second Edition seems to exhibit some clarification of his plan to rehabilitate metaphysics. The First Edition is quite clear as to what Kant's purpose is, but not how it is to be attained. In the Second Edition some rudiments of the method for its fulfillment become clear. We have here the Argument from Analogy. By imitating the methods of pure mathematics and the natural sciences, a method for metaphysics is to be fashioned, which will serve to reestablish her position as queen of the sciences. It should be noted that the Argument from Analogy should not be confused with what is known as the 'Copernican Revolution'. The latter is a result of the Argument from Analogy. It was because of the success which resulted from the change in orientation in the sciences that Kant was motivated to attempt a similar change in metaphysics. This Argument from Analogy is further emphasized and clarified in the Introduction to the Second Edition. But prior to its reexami-

nation a number of key Kantian phrases must be examined.

The Introduction to the First Edition begins with two paragraphs that are descriptive of human experience. Kant tells us here that "experience is beyond all doubt, the first product to which our understanding gives rise, in working up the raw material of our sensible impressions."²⁵ This is the first sort of knowledge of which the naive consciousness is aware.²⁶ Being empirical knowledge, it tells us merely "what is, but not that it necessarily must be so, and not otherwise."²⁷ Such knowledge lacks both universality and necessity; it is empirical or a posteriori. Kant tells us that if we eliminate from our experience all such empirical elements, "there still remain certain original concepts,...which must have arisen a priori."²⁸ While a posteriori knowledge lacks both universality and necessity, knowledge independent of experience, a priori knowledge, has both of these characteristics.

These first two paragraphs of the Introduction to the Critique are rather sketchy. A posteriori knowledge is characterized by Kant as knowledge gained through experience, which lacks both universality and necessity. We are also informed that we can represent a priori cognitions to ourselves by abstracting all of the empirical elements from a judgement. But Kant does not tell us what he means by independence from empirical knowledge, nor does he tell us what he means by the terms "universal" and "necessary". Moreover, in espousing the priority of experience, Kant does not tell us here in what way

it is first; temporally or logically.

In the Second Edition, Kant substitutes eight new paragraphs under two new subheadings, for the original two paragraphs and one subheading. In the very first paragraph he tells us that although empirical knowledge, or experience, may be temporally, the first kind of knowledge we acquire, "since all knowledge begins with experience,..." this does not imply its logical priority, the dependence of all other types of knowledge upon it. Though "all our knowledge begins with experience it does not follow that it springs from experience."³⁰ Some knowledge does not arise from experience and thus is not dependent upon it. Thus, although it may be a historical fact that the earliest knowledge we have is empirical, not all of our knowledge is logically dependent upon empirical knowledge. This stipulation, not made in the First Edition, is crucial to the development of Kant's distinction between a priori and a posteriori truth. If all cognition were logically dependent upon experience, a priori cognition could not be independent thereof and thus could not be a priori.

When Kant speaks of a priori modes of knowledge as "independent" of experience he uses the word in its strongest sense.³¹ One could argue that inductive predictions are independent of experience since when they are made the predictor lacks the empirical knowledge, which is in the future, which the prediction is about. Yet, although inductive predictions are made independently of the empirical knowledge which verifies them, they certainly are not independent of the empirical knowledge, now in the past, upon which they are based.

I may claim, for example, that if I drop this stone it will fall to the ground, and that I know this to be true independently of experience since I have not yet dropped the stone. But this knowledge is not truly independent of experience in so far as it is based upon the observation of other similar objects which when dropped in fact fell to the ground.³² when Kant says that a priori knowledge is independent of experience, he speaks not of "knowledge independent of this or that experience, but knowledge independent of all experience."³³ Thus, a pure, completely a priori judgement is one that has no admixture of anything empirical.³⁴

For Kant, a priori judgements are also universal. Universality is defined negatively by him. If a judgement is universal it does not have the mere generality of inductive judgements, which Kant calls "comparative universality". Since there may always be exceptions to inductive judgements they cannot be properly referred to as "universal". For a judgement to be universal, "no exception is allowed as possible." If no exception to a judgement is possible it is "valid absolutely", and hence necessary. Universality and necessity are "sure criteria of a priori knowledge, and also inseparable from one another."³⁵ Kant tells us that there is no absolute distinction between the notions of universality and necessity, but it is convenient to keep them as separate terms since it might be easier in some cases to prove the necessity of a judgement than its universality, or conversely.³⁶

But what does a priori knowledge consist of in the realm of human experience? In the First Edition Kant merely tells us that it is that which remains after we eliminate from our experience all that is empirical.³⁷ This is rather obscure in so far as we are told nothing positive about that which remains. Again, here too, Kant clarifies his doctrine in the Second Edition. That which remains includes space;³⁸ since if we remove from our empirical concept of a body, one by one, every feature which is merely empirical, the color, the hardness or softness, the weight, even the impenetrability, there still remains the space which the body, (now entirely vanished) occupied, and this cannot be removed."³⁹ The space which an object occupies remains after we have abstracted all of the empirical qualities which belong to it. Thus it is because of its independence of its empirical qualities that space is a priori.

The contents of Section III of the Introduction in the Second Edition is almost entirely the same as that of the first. In it the delimitation of the proper realm of the understanding and reason and the restoration of metaphysics is explained. We learn here that we sometimes, through "certain modes of knowledge leave the field of all possible experience."⁴⁰ When we so extend our faculty of reason beyond the world of the senses, we are, like Plato, overextending our power of reason.⁴¹ Such an overextension of our cognitive faculties enables us to think about the problems of God, freedom and immortality.⁴² Such cognitive transcendence of the realm of the senses is quite attractive to the metaphy-

sician. No possible counter-example can be raised to disconfirm any judgement which can be made about the objects which are indigenous to this area. In fact, in this "realm of reason" the inability to be wrong entails the inability to be right. Metaphysics is inconclusive when it depends upon reason 'stretched' beyond the limits of the senses. To limit reason is not to give us a metaphysics which is infallible, however. By limiting the rational faculty in this way we do not assure the metaphysician that any particular judgement he makes is true or is false, but only that it may be either true or false. Thus, by placing a limitation upon reason, Kant is strengthening metaphysics by restricting its efforts to a realm within which it is more likely to meet with success.

This is, in fact, a negative conclusion. We are not given any positive instruction here as to how we are to construct a correct metaphysics. We are merely warned that a certain kind of metaphysical enterprise is futile. No doubt, one may see this as indirect positive advice. However, Kant does not explicitly tell us that our success will be guaranteed if we follow his advice, but rather that our failure will be assured if we ignore it. This negative warning, characterizes Kant's elucidation of his enterprise in the First Edition of the Critique. In so far as the Preface and the Introduction of the First Edition are both preoccupied with the problem of the limitation of reason, Kant's purpose is purely negative. In the First Edition, he tells us of his Critique that "Its utility ought properly to be only negative, not to extend but only to clarify our reason, and keep

it from errors--which is already a great gain."⁴⁴ His purpose here is modest, only to restrict reason to the grounds within which it can judge objectively.

In the beginning of the Second Edition Kant sketches a more ambitious goal than in the first. Here, the problem of synthetic a priori judgements comes to the fore and thus the problem of the proper extension of pure knowledge. This is the positive aspect of Kant's Critique.

Vleeschauwer lists this Kantian shift from an emphasis upon the negative results of the Critique to its positive value, as one of the most significant changes of his Critical doctrine, in the Second Edition.⁴⁵ He views this change as a reaction against the criticisms of Mendelssohn and Hamman, who accused Kant of being a sceptic, a Prussian Hume.⁴⁶ Kant's reaction was to thus exhibit more strongly, here in the Second Edition, the positive aspect of the Critique, its value in helping us extend our knowledge properly. This, of course does not mean that he has abandoned its negative critical value, but rather that he denigrates its significance here.⁴⁷

The addition of this positive aspect to the Critique is heralded by Kant's Argument from Analogy. If we can see how pure knowledge is extended in the sciences we can learn how to extend it in metaphysics. If Kant, in the Second Edition, were still to emphasize the negative aspect of the Critique, why would he, after all, use examples of sciences which utilize synthetic propositions, and thus expand our knowledge?

This, of course, is not to say that synthetic a priori propositions are irrelevant to the stated goals of the First Edition, but rather that their function becomes expanded and clarified in the Second Edition. Their possibility becomes a question of such importance that it is considered by Kant to be "the proper problem of pure reason."⁴⁸ Because synthetic a priori propositions become so crucial here, the pure intuitions of space and time, which they require, must also play a more significant role. It is because of this that in the Second Edition the two modes of a priori intuition; space and time, come to the fore. But in order to understand the significance of this we must first examine, in greater detail, the Kantian notion of synthetic a priori truth.

The section of the Introduction entitled "The Distinction Between Analytic and Synthetic Judgements" is less than five pages long, yet it has most probably provoked as much contemporary philosophical disagreement as any other historical writing its size. Much of the debate is due to Kant's difficult mode of expression and to his poor examples. It would be beside the point of this study to decide upon the merits of Kant's doctrine here. All that one can reasonably hope to accomplish, and even this with a great deal of humility, is to state as simply as possible, what Kant means by this distinction, and its import for the purpose of the Critique.

At the very outset the text states very explicitly that the distinction applies only to "judgements in which the re-

lation of the subject to the predicate is thought."⁴⁹ It is very strongly suggested that there may be other sorts of judgements which do not exhibit this relationship.⁵⁰ These other sorts of judgements are not discussed, nor does Kant appear to exhibit any interest, here, in them.⁵¹

Kant tells us that analytic judgements are those in which "the predicate B belongs to the subject A...and adds nothing through the predicate to the concept of the subject...."⁵² They break up the constituent concepts which have already been thought in it. 'All bodies are extended,' we are told, is an analytic judgement. This is so because the predicate 'extended' belongs to the subject, 'all bodies'. When we think of the concept 'body' we necessarily, according to Kant, think of the concept 'extension', since 'extension' is one of its constituent concepts. Part of what we mean by the concept 'body' is that it is extended. To learn that a body is extended is not to learn anything new if one already knows what a body is.

Synthetic judgements are those in which the predicate B lies outside of the concept A. These "add to the concept of the subject a predicate which has not in any wise been thought in it, and which no analysis could possibly extract from it."⁵³ Whereas analytic judgements do not add to our knowledge, synthetic judgements do. But how do we bridge the gap between subject and predicate and thereby add to our knowledge?

Although analytic judgements are one and all a priori, synthetic judgements may be either empirical or a priori. All empirical judgements are synthetic.⁵⁴ For example, the judgement 'This book is green', is both empirical and synthetic.

That it is not analytic can be seen from the fact the concept 'book' does not contain the concept 'green': some books are not green. If a synthetic judgement is true it extends my knowledge. But how do I verify it if the concept of its predicate is not contained in the concept of its subject? In the case of an empirical judgement an empirical intuition is required. Empirical intuition serves as the 'bridge' which connects the concept of the subject with the concept of the predicate. It is this kind of empirical observation which Kant calls the 'X', upon which the understanding may rely, if it is to know that a predicate not contained in this concept, nevertheless belongs to it."⁵⁵

In a priori synthetic judgements, the aid which empirical intuition affords in a posteriori judgements is lacking. Empirical intuition cannot be utilized to bridge the gap between concepts here if the judgement is to be a priori. Another kind of mediating link is required.⁵⁶ The judgement 'Equilateral triangles are equiangular,' is one which Kant would call a priori. Yet, the concept of the predicate 'equiangularity' is not contained in the concept of the subject, 'equilaterality'. To connect the two, and thus to verify the judgement, we require an a priori intuition. An intuition is that through which a mode of knowledge is in immediate relation to its object.⁵⁷ A pure, or completely, a priori intuition is an intuition in which there is nothing that belongs to sensation.⁵⁸ Furthermore, Kant tells us that this intuition can only be of space or time: "The only intuition that is given a priori is that of the mere form of appearances,

space and time."⁵⁹ Thus, the only intuitions available to us to bridge the gap between the concept of the subject and the concept of the predicate in a synthetic a priori judgement, are either spatial or temporal.

The geometrical example we are considering, 'Equilateral triangles are equiangular,' requires an a priori spatial intuition to connect the concepts of subject and predicate. This judgement is verified through the construction of a pure a priori intuition of an equilateral triangle in one's mind. Because this intuition, which is constructed in conformity with the concept of 'equilateral triangle' in general, exhibits the quality of equiangularity, it follows that our judgement is confirmed.⁶⁰ Thus, for Kant, because the pure construction of an equilateral triangle in intuition, in accordance with its general concept, exhibits equiangularity, it follows that equilateral triangles are equiangular, and that the proposition 'Equilateral triangles are equiangular, is true.'⁶¹

Synthetic a priori judgements constitute the most significant type of judgement for the completion of the Kantian enterprise. This fact does not exhibit itself in the First Edition, where although it is referred to in passing, its import is not sufficiently emphasized. It is in sections V and VI of the Introduction to the Second Edition that Kant's purpose, in its totality, finally becomes explicit.⁶²

This will become clear if we continue to follow the text. Section V, which contains the first full statement of the argument from Analogy, begins with the proposition: "All mathematical propositions without exception, are synthetic."⁶³

Smith believes this statement to be carelessly made and not to represent Kant's "real" view, because soon after making it he admits, in B 16, that some mathematical judgements are analytic.⁶⁴ But a close examination of the text reveals no such confusion. Kant says there:

Some few fundamental propositions, presupposed by the geometrician, are indeed, really analytic, and rest on the principle of contradiction. But as identical propositions they serve only as links in a chain and not as principles; for instance $a=a$...⁶⁵

These analytic proposition are presupposed by the mathematician and as such they need not be a part of mathematics proper. Propositions like ' $a=a$ ' and 'triangles have three angles,' are analytic. They are examples of the Principle of Identity, which is a logical presupposition of mathematics, rather than an integral part of the science itself; it would seem therefore that Kant did unambiguously believe all mathematical propositions to be synthetic.⁶⁶ Thus, mathematics, as an apodeictic science, is possible only in so far as the a priori synthetic judgements of which it is composed are possible.

Kant gives us examples both from arithmetic and geometry to illustrate his view. According to him, the proposition ' $7+5=12$ ' is synthetic. The concept of twelve is not contained in the concept of ' $7+5$ '. Taken as a mere concept, ' $7+5$ ' does not have the concept of 12 as one of its constituent parts. The concept '12' can only be derived from the concept ' $7+5$ ' through the aid of intuition one represents to oneself first seven points and then five points, and then "counts up" from the first of the seven points to the last of the five points, thereby arriving at their sum, 12, and consequently its con-

cept '12'.⁶⁷

If we follow Smith's interpretation of Kant, it would appear that both types of pure intuition are required in arithmetic. Smith says: "Kant regarded space as no less necessary than time to the construction of number."⁶⁸ Smith bases his case for the necessity of spatial intuition in arithmetic on his belief that Kant requires that we represent points to ourselves in the process of counting. According to him, Kant believes that we must represent to ourselves a point for each unit we wish to add, subtract, or whatever the arithmetical operation we wish to perform. It would follow that for Kant, space is necessary for arithmetic.

When we add $7+5$ and find that it is equal to 12, according to Kant, we arrive at 12 by iterating the connection between units eleven times. We have here the temporal notion of succession in the transitional step from unit to unit. Thus, if we follow Smith's interpretation here, it would appear that for Kant, arithmetic requires both space and time, as pure intuitions, if it is to be an apodeictic science. I do not believe, however, that Smith presents as convincing a case as can be made here for the necessary relation between space and synthetic a priori arithmetical judgements. For Kant, points are not truly spatial.⁶⁹ Thus, even if they were necessary constituents of mathematics for him, this would not mean that arithmetic is an inherently spatial science. The essentially spatial aspect of arithmetic, or for that matter, of all of the pure sciences, can be best understood in terms of its applicability to the world of appearance, which we shall

see, at least in the Second Edition, is always spatial.⁷⁰

It is clear however, that it is in geometry that the most direct relationship between spatial intuition and the pure sciences can be found for Kant. Here, as we have seen, according to Kant, it is through the pure intuition of space that synthetic a priori judgements are possible.⁷¹ Moreover, for Kant, geometry is the chief mathematical science. We are told as early as the "Innaugural Dissertation" that "the evidence in demonstrations...is not only the greatest in geometry but also the only evidence which is given in pure sciences and is the exemplar and means of all evidence in other sciences."⁷² This is in part echoed in the Critique where Kant says that pure mathematics, "especially as regards space and its relations" is a "brilliant example" of a source of knowledge from which bodies of synthetic a priori knowledge can be derived.⁷³

It has been claimed by Strawson that Kant believes geometry to be an empirical science since "Kant said it did not matter whether construction of a spatial concept in pure intuition took place with the aid of figure drawn on paper or simply in the imagination."⁷⁴ If Kant were putting forward a theory of empirical geometry it would follow that pure spatial intuition need not play any role in geometry or for that matter in mathematics. In spite of the textual evidence to the contrary, Kant does in fact say something vaguely like what the above statement attributes to him, but even so, his words are still misconstrued by Strawson. Kant very clearly distinguishes between pure and empirical geometry.⁷⁵ He does of course say: "I construct a triangle by representing the

object which corresponds to this concept either by imagination alone, in pure intuition, or in accordance therewith also on paper, in empirical intuition..." But Kant is not here putting forward a theory of empirical geometry. The triangle I draw on paper is merely a heuristic device which helps me represent the pure intuition of a triangle:

The single figure which we draw is empirical, and yet it serves to express the concept, without impairing its universality. For in empirical intuition we consider only the act whereby we construct the concept, and abstract the many determinations (for instance the magnitude of the sides and of the angles), which are quite indifferent as not altering the concept 'triangle'.⁷⁶

Drawing a triangle on paper can aid me in constructing a pure intuition of a triangle. All that I need to do is imagine a triangle like the one on paper but having sides which are infinitely thin, and absolutely straight, etc.

If I use an empirical aid to imagine the pure intuition this does not necessarily 'pollute' the purity of the intuition. Paton states Kant's view clearly where he says that "we may be obliged to draw a triangle on paper in order to help our imagination, but we are not thinking about the seen triangle."⁷⁷ All that is crucial for Kant in this respect is that the intuition be pure, or that it at least in principle be represented purely.

If geometry, for Kant, is the exemplar of the scientific method, it is only pure geometry which can be of such importance. Since empirical geometry need not include synthetic a priori propositions. If it is the synthetic a priori, which as we shall soon see serves as the key for the reestablishment of metaphysics, the science whose method we

wish to imitate in metaphysics must contain that which we wish to imitate; synthetic a priori propositions.

In the Introduction Kant tells us that physics is still another science which "contains a priori synthetic judgements as principles." But the examples which Kant uses here to illustrate his claim are interesting. He tells us that to show that physics contains synthetic a priori judgements as principles he need only cite two such judgements: "that all change in the material world the quantity of matter remains unchanged; and that in all the communication of motion, action and reaction must always be equal."⁷⁸ It is quite strange that Kant should consider these two examples as prime examples of synthetic a priori judgements in physics. He regards the quantity of matter as "the number of its movable parts in a determinate space."⁷⁹ Prima facie it would seem that the number of movable parts in any space may change. As such there is some real doubt as to the a priori truth of this principle of the conservation of matter. Moreover, this principle cannot be a priori true since it refers to matter, which here appears as an empirical object. Smith tells us that this principle of physics "is not a presupposition of possible experience, but merely a generalization empirically grounded."⁸⁰ Kant in no way explains to us how it could be explained independently of experience.

The other principle which he refers to here appears to be Newton's Third Law of Motion.⁸¹ But this principle is not identical with this law as Newton understood it. Newton, in fact, believed this law to be empirical, as he believed that

physics, in general, was an empirical science. He said:

"...the first principles or axioms, which I call the laws of motion. These principles are deduced from phenomena and made general by induction, which is the highest evidence that a proposition can have in this philosophy."⁸² Why Kant regards these principles, which are physical, as a priori, is a question which we shall not deal with in this essay. But what is significant here for our purposes is the fact that Kant does regard some principles of physics not merely as a priori but as synthetic a priori.⁸³ This is significant in regard to his Argument from Analogy: Just as mathematics and physics, according to Kant, contain synthetic a priori principles, so must metaphysics.

In spite of the previous failures of metaphysics Kant regards it as an indispensable science. Moreover, he believes that "it ought to contain a priori synthetic knowledge."⁸⁴ If it is to be a science which tells us necessary truths it must be a priori. If it is not to be trivial, if its business is not merely to analyze concepts, it must be synthetic. Thus, if it is to tell us necessary truths which extend our knowledge it must be synthetic a priori. It is for this reason that Kant tells us that "metaphysics consists, at least in intention, entirely of a priori synthetic propositions."⁸⁵

Metaphysics, may in fact, not consist entirely of a priori synthetic propositions. But if it is to be restored as the "queen of the sciences" it must fulfill the conditions of necessity and nontriviality. It must be a necessary science which extends our knowledge. These conditions are ful-

filled to the extent to which it contains true propositions which are both a priori and synthetic. Thus, for Kant, the ideal metaphysics contains only synthetic a priori propositions. This is not to say that a priority and syntheticity are the only conditions which a scientific metaphysics must fulfill; but certainly, according to Kant, these are the key conditions which if met will aid in her rehabilitation.

In the Second Edition we are told that a number of investigations fall under the one paramount problem of the Critique. By defining this problem accurately, Kant believes that he "would make it easier for others who would test our results, to judge whether or not we have succeeded in what we set out to do." If there is any criterion by which Kant wishes us to judge the success of his Critique it lies in the extent to which he has resolved "the problem of reason." This problem is contained in the question, "How are synthetic a priori judgements possible?"⁸⁶ The failure of metaphysics, according to Kant, lies in the fact that according to Kant, lies in the fact that metaphysicians have hitherto ignored this problem. Thus, the future success or failure of metaphysics, from Kant's perspective, depends upon its solution.

In solving the problem of synthetic a priori judgements we solve the problems of:

How is pure mathematics possible?
How is pure science of nature possible?⁸⁷

According to Kant, we already know that these sciences are actual, it therefore follows that they are possible. The question that Kant poses is how are they possible? We have

seen that according to him these pure sciences must contain synthetic a priori propositions. If Kant can discover the conditions under which these propositions are true he can answer the question of how the pure sciences are possible. Metaphysics, like mathematics and the pure science of nature, must contain synthetic a priori propositions. Thus, just as the answer to the question of how synthetic a priori propositions are possible leads to the answer of the question of how the pure sciences are possible, it leads also to the answer to the question of "How metaphysics as a science is possible?"⁸⁸

No doubt, in the case of the pure sciences we rest upon firmer ground than in the case of metaphysics, with regard to our ability to discern how synthetic a priori judgements are possible. Because, according to Kant, these sciences are actual it follows that it contains valid and true synthetic a priori propositions. But because no rigorous science of metaphysics exists we have no clear reason to believe that there are true (or at least meaningful), metaphysical synthetic a priori propositions.

Our ignorance in regard to metaphysics is thus more extensive than our ignorance in regard to the pure sciences. This fact belies the need for Kant's Argument from Analogy. In the Preface (of the Second Edition), the argument goes from both the pure and empirical sciences to metaphysics. It would appear that the representation of the argument in the Introduction (of the Second Edition), is more representative of Kant's true intentions, since synthetic a priori propo-

sitions need not be contained in the set of propositions which constitute an empirical science (although synthetic a priori judgements must be presupposed, e.g. the Principles). Also, the Prolegomena whose structure is divided along the lines suggested by the Argument from Analogy, contains no mention of the empirical sciences as one of the intrinsic elements of the Kantian argument.⁸⁹

If the key to the discovery of how the pure sciences and metaphysics are possible lies in the resolution of the problem of the possibility of synthetic a priori judgements, the key to the latter problem lies in Kant's theory of a priori intuition. It is only through the construction of pure intuitions that we can 'bridge the gap' between the concept of the subject and the concept of the predicate of synthetic a priori propositions. Such pure intuition, as we have seen, can only be either spatial or temporal. This is why space and time are of capital importance for the solution of the Kantian problem. It is only through pure intuitions of space and time that synthetic a priori propositions are possible. Since these propositions are required for a synthetic a priori metaphysics, it is space and time which serve as necessary conditions for the possibility of metaphysics as a science. It is in this sense that space and time serve as an integral element in the solution of the Critical problem. Moreover, as we shall now see, Kant's own description of his goals, in the Second Edition, necessitates giving this aspect of his philosophy greater emphasis than in the first.

NOTES

1. Cf. Immanuel Kant, Critique of Pure Reason, trans. Norman Kemp Smith (New York: St. Martins Press, 1961), A x, p. 8, hereinafter referred to as CPR. All quotations from the original German will be from, Kritik der reinen Vernunft (Hamburg: Felix Meiner Verlag, 1971), hereinafter referred to as KrV.

2. CPR, A xvii, p. 12.

3. See Ibid.

4. Sir Isaac Newton, Sir Isaac Newton's Mathematical Principles of Natural Philosophy, trans. by Motte and Cajori (Berkeley: Univ. of California Press, 1946), p. 546.

6. This interpretation of the Newtonian dictum is discussed by A. Koyre in his From the Closed World to the Infinite Universe (Baltimore: Johns Hopkins Press, 1970), pp. 228-34. Newton, it is said here did not reject all hypotheses, only those which were speculative. See also I. Newton, Newton's Philosophy of Nature, ed. H.S. Thayer (New York: Hafner Publishing Co., 1970), p. 5.

7. Smith believes that the Preface to the First Edition is misleading because it overemphasizes the problems of the Dialectic at the expense of the Analytic. But he does not explain why he believes the Dialectic to be any more involved with the problem of the delimitation of the understanding and reason than the Analytic. See Norman Kemp Smith, A Commentary to Kant's 'Critique of Pure Reason' (New York: Humanities Press, 1962), pp. 11-12.

8. CPR, B xii, p. 19.

9. The word 'object' is ambiguous in that it can stand for Objekt or Gegenstand, which are both used by Kant. The word 'object' would be best represented here by Objekt, which Kant uses for the 'objective of thought', which need not be a real thing. But this usage is not altogether consistent. See H.J. Paton, Kant's Metaphysics of Experience, Vol. I (London: London: George Allen and Unwin Ltd., 1936), p. 196.

10. See Op. Cit.

11. See CPR, B 163, p. 172.

12. Cf. CPR, B xii-xiv, pp. 20-21.
13. Cf. E.A. Burt, The Metaphysical Foundations of Modern Science (Garden City, New York: Doubleday & Co. Inc., 1954), pp. 35-41.
14. See CPR, B xvi-xvii, p. 22.
15. CPR, B 5, p. 44.
16. See CPR, B 128, p. 128, and Smith, Commentary, p. 595.
17. See John Dewey, Leibniz's New Essays Concerning the Human Understanding (New York Hillery House Publishers, Ltd., 1961), p. 121.
18. See CPR, A 189=B 232 - A 218=B 265, p. 218-238.
19. See CPR, A 265=B 321 - A 266=B 322, pp. 279-280.
20. See CPR, B xxiv, p. 26.
21. CPR, B xvi, p. 22.
22. D.P. Dryer does recognize the importance of the analogy but leaves its implications for the Critical philosophy largely dormant. See Kant's Solution for Verification in Metaphysics (London: George Allen & Unwin Ltd., 1966) p. 169.
23. CPR, B xxii, p. 25.
24. CPR, B xvi, p. 22.
25. CPR, A 1, p. 41.
26. Cf. Smith, Commentary, p. xxxviii - xlii.
27. CPR, A 1, p. 42.
28. CPR, A 2, p. 42.
29. "...alle unsere Erkenntnis mit der Erfahrung anfangen..." (emphasis mine), KrV, B 2, p. 38.
30. KrV, B 2, p. 38, translation mine), "Wenn aber gleich unsere Erkenntnis mit der Erfahrung anhebt; so entspringt sie darum doch eben aus der Erfahrung." (Emphasis mine).
31. Although Kant does say that only pure a priori judgements have this kind of extreme independence of the empirical, he at times, uses 'a priori' interchangeably with 'pure a priori'. See CPR, B 2-3, p. 43.
32. Cf. CPR, B 2, p. 43.

33. Ibid.
34. See CPR, B 3, p. 44.
35. CPR, B 4, p. 44.
36. One might argue that universality and necessity are not necessarily connected in the way Kant claims since there are many examples of non-nomic universality. The judgement 'All swans are white,' even if true, is not necessarily true. Yet Kant appears to be speaking only of nomic-universality in the first place. His claim is that a judgement is universal only in so far as there are no possible counterexamples to it.
37. See CPR, A 2, p. 42.
38. Kant, using the same sort of example, also states that substance remains after the process of abstraction. This example, however, is not as helpful as the one we are considering in that it is not intuitively clear that it is substance which must remain of the concept of the object after all of its empirical qualities are removed. Also, in both examples it would appear that Kant confuses the object; space or substance, with its concept. See CPR, B 6, p. 45.
39. CPR, B 5-6, p. 45.
40. CPR, A 3=B 6, p. 45.
41. See CPR, A 5=B 9, p. 47.
42. See CPR, A 3=B 7, p. 46.
43. CPR, A 5=B 8, p. 47.
44. CPR, A 12, p. 59.
45. See H.J. de Vleeschauwer, *La Déduction transcendentale dans l'Oeuvre de Kant*, Vol. II (Paris: Librairie Ernst Leroux, 1936), p. 553.
46. See ibid., p. 530.
47. See ibid., p. 554-557.
48. CPR, B 19, p. 55.
49. CPR, A 6=B 10, p. 48.
50. See ibid., the beginning of the first sentence of this section, "In all judgements in which the relation..." implies that there may be other kinds of judgements.
51. Pap raises a very provocative objection to the Kantian distinction. He says that "All existential judgements like

'there are cows', would no doubt be classified as synthetic by Kant, yet the only way they could be construed as having subject predicate form would be by treating existence as a predicate, which would be contrary to Kant's own famous thesis that existence is not a predicate." This objection could be met by the claim that not having a predicate the above judgement is neither synthetic nor analytic. See Arthur Pap, Semantics and Necessary Truth (New Haven: Yale University Press, 1957), p. 27.

52. CPR, A 6=B 10-11, p. 48.

53. Ibid.

54. See CPR, B 11, p. 49.

55. CPR, A 9, p. 49.

56. CPR, A 9=B 12-13, p. 50.

57. See CPR, A 19=B 33, p. 65.

58. See CPR, A 20=B 34, p. 66.

59. CPR, A 720=B 748, p. 580.

60. Cf. CPR, A 718=B 746, p. 580.

61. See CPR, A 9=B 13, p. 51.

62. Sections three to five of the Prolegomena may be considered as transitional in so far as the importance of metaphysics is emphasized but not the Argument from Analogy, at least not to the extent to which it is in the Second Edition of the Critique.

63. CPR, B 14, p. 52.

64. Smith, Commentary, p. 64.

65. CPR, B 16, p. 64.

66. This Kantian doctrine is echoed by him in Prolegomena to any Future Metaphysics, L.W. Beck trans. (Indianapolis: Bobbs-Merrill Co, Inc., 1950), p. 15. Its alleged retraction can also be found there on page 17.

67. Cf. CPR, B 15, p. 52-53; A 142-143=B 182, p. 182-184; and in Letter to Johan Schultz, (Nov. 25, 1788), in Kant: Philosophical Correspondence, 1759-99, trans. and ed. Arnulf Zweig (Chicago: University of Chicago Press, 1970), pp. 128-31.

68. Smith, Commentary, p. 31.

69. CPR, B 419, p. 375.

70. See below pp. 244-246.

71. See above pp. 20-21.

72. Immanuel Kant, On the Form and Principles of the Sensible and Intelligible Worlds, in Kant: Selected Pre-Critical Writings, trans. Kerford and Walford, Manchester Univ. Press, 1968), p. 69.

73. See CPR, A 39=B 55, p. 80.

74. P.F. Strawson, The Bounds of Sense (London: Methuen & Co. 1966), p. 282.

75. See CPR, A 722=B 750, p. 582, and 734=B 762, p. 590.

76. CPR, A 713=B 741, p. 577.

77. H.J. Paton, Kant's Metaphysics of Experience, Vol. I p. 159.

78. CPR, B 17, p. 54.

79. Immanuel Kant, The Metaphysical Foundations of the Natural Sciences, trans. J. Ellington (Indianapolis: Bobbs-Merrill Co. Inc., 1970), p. 96.

80. Smith, Commentary, p. 361.

81. See Newton, Newton's Philosophy of Nature, p. 22.

82. Ibid., p. 6.

83. See CPR, B 18, p. 54.

84. Ibid.

85. CPR, B 18, p. 55.

86. CPR, B 19, p. 55.

87. CPR, B 20, p. 56.

88. CPR, B 22, p. 57.

89. See Prolegomena, p. 27.

CHAPTER II

KANT'S PHILOSOPHY OF SPACE IN THE METAPHYSICAL AND TRANSCENDENTAL EXPOSITIONS

Just as any argument dealing with the role of space in the Critique requires a synoptic explanation of at least the basic aims of the Critical philosophy, it would also require an examination of the notion of space. This is to say that in order for us to understand what the role of space is in the two editions of the Critique we must first understand what Kant believes space to be. Because, in the Aesthetic, we find the most exhaustive treatment, by Kant, in the Critique, of the notions of space and time in isolation from the rest of the Critical framework it is appropriate that we scrutinize very closely what he says there concerning space, and of course his arguments which support his claims. I shall attempt to do just this in the two chapters which follow.

Moreover, because the versions of the Aesthetic differ in the respective two editions it is incumbent upon us to compare the role of space in these two editions. It will be found, I believe, that space, in the Second Edition version of the Aesthetic serves a more significant function than in the first. Although the difference in this regard is not as crucial or striking in the Metaphysical and Transcendental Expositions, as in certain parts of the Analytic, it is

more than noteworthy in that it fits in consistently with what we shall see is a general tendency to upgrade the role of space which Kant exhibits in the Second Edition.

We have seen in the last chapter that in the Preface and the Introduction of the Second Edition of the Critique Kant exhibits a clarity of purpose and method largely absent from the First Edition. But in spite of the absence of the Argument from Analogy from the Preface and Introduction of the First Edition, Kant does tell us that "upon such synthetic, that is, ampliative principles, all our a priori speculative knowledge must ultimately rest."¹ But what does this mean? Is Kant claiming that metaphysics as a science, or merely as a natural disposition, is necessarily dependent upon synthetic a priori judgements? The use of 'speculative' might seem to indicate that it is metaphysics as a natural disposition which is referred to here. Yet, in the very next paragraph, Kant seems to indicate that it is metaphysics as a science that is so dependent:

A certain mystery lies here concealed; and only upon its solution can the advance into the limitless field of knowledge yielded by pure understanding be made sure and trustworthy. What we must do is to discover, in all its proper universality, the ground of the possibility of a priori synthetic judgements, to obtain insight into the conditions which makes each kind of such judgement possible, and to mark out all this knowledge, which forms a genus by itself, not in any cursory outline, but in a system, with completeness and in a manner sufficient for any use, according to its original sources, divisions, extent and limits.²

In order to make the use of our faculty of pure understanding sure and trustworthy we must discover how synthetic a priori judgements are possible. To do so we must view such

judgements in their systematic interconnection, and compatibly with their limits. Because of Kant's reference to the need to make 'knowledge' both sure and trustworthy, and because he indicates the need for the determination of the extent and limits of synthetic a priori judgements, it would appear that he is here referring to what in the Second Edition is called metaphysics as a science. He would appear to be claiming that in order for metaphysics to be established as a science we must first exhibit the conditions necessary for the possibility of synthetic a priori judgements. Thus, if my interpretation here is correct, it would follow that even in the First Edition, the main problem to be considered is that of how synthetic a priori judgements are possible.

Moreover, it must be noted, that as the above quotation indicates, such judgements must be viewed in their systematic interconnection. We are told by Kant that we must attempt to view the knowledge, which true synthetic a priori judgements constitute, in a system. Presumably, it is only if our synthetic a priori judgements can be viewed in their systematic interconnection that the knowledge which results therefrom can constitute a system. Thus, it is only if such judgements are systematically interconnected that the science of metaphysics can be constructed.

If, as we have seen, Kant's main problem in the First Edition of the Critique is how synthetic a priori judgements are possible it would seem that by asking how such judgements are possible, Kant is not merely asking how they may be uttered, or thought, or written, but how such judgements can

be properly made.

The connecting link between the concepts of subject and predicate must be a priori if the judgement is to be a priori, and must be an intuition if the judgement is to be synthetic.³ Thus, synthetic a priori judgements, judgements which are pure and yet expand our knowledge, require a priori intuition as a mediating link to connect the concepts of subject and predicate.

Space and time are the only kinds of pure a priori intuitions.⁴ Although Kant is at a loss to explain why this is the case, he appears to believe that this is a basic fact of human cognition.⁵ Thus, it is only through the pure intuition of either space or time that we can bridge the gap between the concepts of the subject and the predicate of a synthetic a priori judgement. It follows that space and time serve as the key to the solution of the problem of the possibility of synthetic a priori judgements.

It should be noted, however, that Kant in the Second Edition, as in the First, maintains the necessity of the systematic unity of the metaphysics he wishes to be established. He tells us of "the principles of rational knowledge", that if they are to be utilized to trace the outline of a "system of metaphysics" they must constitute "a quite unified and self subsistent unity, in which as in an organized body, every member exists for every other, and all for the sake of each...." It is only through the establishment of the principles of knowledge as a systematic whole that a system of metaphysics could be established "which could be set upon

the secure path of a science" and which could be "capable of acquiring exhaustive knowledge of the entire field."⁶ We see here again, as we did in the First Edition,⁷ that Kant considered metaphysics ideally to consist of systematically unified judgements.

It follows from these considerations that if Kant hopes to establish the conditions necessary for the establishment of metaphysics, he must do more than merely show how isolated synthetic a priori judgements are possible. Moreover, what he must show is how such judgements are possible as elements of a unified interrelated whole. Only thus could he truly explain to us how metaphysics as a science is possible. This is to say that the solution of the problem of synthetic a priori judgements, and thus metaphysics as a science, are not sufficient. When Kant asks how metaphysics is possible, he is asking what are the conditions necessary for its establishment as a science.

Even if we are given any number of synthetic a priori judgements which can be shown to be true, we could not completely solve the problem of how metaphysics can be established as a science unless a systematic unity can be discerned among such judgements. The solution of the problem of metaphysics requires that we uncover the conditions for making true synthetic a priori judgements, but it also requires, if it is to be complete, that some sort of criteria be established by which synthetic a priori judgements can be properly related to each other. The problem of the systematic relationship among synthetic a priori judgements is import-

ant and largely overlooked in the Critique, and must be borne in mind in judging the success of Kant's enterprise. The Aesthetic however, ignores this problem and explicitly deals primarily with questions related to the possibility of individual synthetic a priori judgements. It is to this problem that we must now turn our attention.

The Transcendental Aesthetic deals primarily with a priori sensibility.⁸ Sensibility is the a priori capacity through which intuitions are given to us.⁹ In dealing with sensibility in the Aesthetic Kant deals primarily with our capacity to have a priori intuitions of space and time.¹⁰ But it is not only with the capacity to have such intuitions that Kant is here concerned. He is also concerned with the nature of those intuitions which serve as the guarantors of the validity of synthetic a priori judgements; thus he asks: "What then are space and time?"¹¹ His purpose is to gain insight into that type of cognition which provides the link between the concepts of subject and predicate of synthetic a priori judgements, in order to learn how such judgements are possible.

But before going on to examine the text of Kant's argument in the Aesthetic it would be helpful to make note of a very significant distinction which Kant makes which has a strong bearing upon the nature of the differences in the manner of argumentation found in the two editions of the Critique. This distinction is between what Kant calls the synthetical and analytical methods. In the Critique it is in the Second Edition that Kant first explicitly utilizes the analytical

method although it is tacitly used in the First.¹² However, in Kant's published works viewed as a whole we find the first explicit reference to this distinction in the Prolegomena. Kant tells us there that in the First Edition of the Critique, he treated the problem of metaphysics synthetically in that he follows the procedure of "making inquiries into pure reason itself and endeavoring in this source to determine the elements as well as the laws of its pure use according to principles."¹³ In the Prolegomena, Kant tells us that because his intention is to discover what one must do to make the science of metaphysics actual rather than to propound it, it, metaphysics

...must therefore rest upon something already known as trustworthy, from which we can set out with confidence and ascend to sources as yet unknown the discovery of which will not only explain to us what we know but exhibit a sphere of many cognitions which all spring from the same sources. The method of the prolegomena, especially designed as a preparation for future metaphysics is consequently analytical.¹⁴

That which is already known as trustworthy, upon which the Prolegomena rests, is the pure sciences.¹⁵

This Analytical method presupposes the pure sciences as coherent bodies of pure a priori knowledge. In using this method "we assume that such cognitions from pure reason actually exist..."¹⁶ and we utilize these pure cognitions as found in such systems of knowledge as a stepping off point for the unveiling of those conditions which make the pure sciences possible. The analytical method begins with the pure sciences as possible. It subsequently discloses the basic elements necessary for the structure of these sciences. it therefore serves to elucidate those factors necessary for

the explanation of these sciences.¹⁷

The synthetic method, on the other hand, as its name suggests, begins with the basic elemental features of cognition and synthesizes them into a greater whole. The elements it deals with are pre-scientific in the sense that science is to be understood as a compendium of these elements, and is thus a result rather than a presupposition of this methodological process.

In the use of his analytical method Kant assumes the truth of his most basic premise of his argument. He tells us, for example, that "Geometry, however, proceeds with security in knowledge that is completely a priori, and has no need to beseech philosophy for any certificate of the pure and legitimate descent of its fundamental concept of space."¹⁸ There is no need, he tells us, to justify the a prioricity and universal necessity of geometry (except of course in relation to the problem of metaphysics). That geometry has this character, is accepted as one of the basic premises of Kant's use of the analytical procedure. It is an assumption, and not an unreasonable one, which as we shall see in our examination of the Transcendental Exposition of Space, is presumed true for the purpose of deriving therefor those elements which serve as the ground of the possibility of synthetic a priori judgments.

The difference between the First and Second Editions is quite pronounced in the Transcendental Aesthetic. The first procedure contains both the synthetical and analytical methods, but it is only in the Second Edition that this dis-

inction is acknowledged. Kant found that it was necessary, in the Second Edition, to distinguish between the Metaphysical and Transcendental Expositions. The basic difference between the two editions is that the first follows the synthetic and the second the analytical method. Moreover, as we shall see, the Transcendental Expositions contain revisions of parts of Kant's arguments in the First Edition. Not all of the changes are of a clarificatory nature. But of course, in order to show this a close scrutiny of the text is required.

In examining the text, we shall concentrate our attention upon Kant's doctrine of space. Of course the nature of my argument demands this, but also the justification of this preoccupation with the spatial is to be found in the Kantian text itself. He tells us, in the Aesthetic, speaking of space and time, that "...in regard to both there is a large number of a priori apodeictic and synthetic propositions. This is especially true of space, to which our chief attention will be directed in this inquiry."¹⁹ Kant recognizes the uniqueness of spatial intuition in regard to its function in the solution to the problem of the Critique. He says that

With the sole exception of space there is no subjective representation, referring to something outer, which could be entitled at once objective and a priori. For there is no other subjective representation from which we can derive synthetic a priori propositions, as we can from the intuition of space.²⁰

This predilection for the spatial in the Aesthetic is no arbitrary whim. We shall find here, that in regard to the solution of the chief problem of the Critique, time runs a sorry second. But again, in order to understand the role of

space, in the Second Edition of the Critique, we must look to the text.

The Transcendental Aesthetic is the science of all principles of a priori sensibility.²¹ Because there are only two such "principles", space and time, Kant directs his attention to them. But in order to do so, he isolates sensibility from all concepts thought through the understanding, and from everything which belongs to sensibility.²² Thus, in order to understand a priori sensibility, and space and time, which belong to it, Kant separates it from the conceptual and the empirical. By so doing he gives us pure intuition to examine, in and of itself, apart from extraneous considerations, so that we may concentrate upon it and it alone. We may thus be assured that whatever valid conclusions we may reach concerning the nature of pure sensibility, correctly characterize sensibility and sensibility alone, and do not have their source in any cognitive faculty external to sensibility.

The distinction between Metaphysical and Transcendental Expositions was first explicitly developed in the Second Edition of the Critique.²³ It is an important distinction and one which helps clarify the Kantian doctrine. We shall therefore, in our own exposition, respect this distinction by beginning with the Metaphysical Exposition.

The Metaphysical Expositions of space and time attempt to answer the question, "What then are space and time?"²⁴ In asking this question, Kant is, in effect, asking what is the nature of the pure intuitions which serve as the connecting links between the concept of the subject and the concept of

the predicate of synthetic a priori judgements? In order to answer this question which Kant poses, he proposes an exposition of the concepts of space and time. By exposition Kant means "the clear though not necessarily exhaustive, representation of what belongs to a concept: the exposition is metaphysical when it contains that which exhibits the concept as given a priori."²⁵ Thus, the Metaphysical Exposition²⁶ of space and time consists of an attempt at a lucid representation of those predicates belonging to the concepts of space and time, which show the concepts to be of an a priori nature. The procedure used in the Metaphysical Exposition, contrary to first appearance, follows the synthetic method. In it Kant uses the characteristics of space and time to construct the concepts of space and time as a priori representations. We do not have here an analysis of space and time as already given, as pure, a priori, unitary, etc. but rather construct the meanings of the concepts of space and time through a synthesis of their predicates.

Prima facie, it would appear that it is only if the intuitions of space and time are a priori that those concepts which adequately represent these intuitions may themselves be a priori. Since the possibility of synthetic a priori intuitions requires pure concepts as well as pure intuitions of space and time,²⁷ in order for Kant to show how space and time serve as the mediating links which make synthetic a priori judgements possible, he must show that the intuitions and concepts of space and time serve as the mediating links which make synthetic a priori judgements possible, he must

show that the intuitions of space and time are pure and a priori. This is why Kant here gives us expositions of the concepts of space and time.

In the first argument of the Metaphysical Exposition, Kant attempts to prove that the representation of space is non-empirical (pure). He tells us that space cannot be derived from outer empirical experiences, for those experiences themselves presuppose space: "For in order that certain representations 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 as not only different but as in different places,²⁸ the representation of space must be presupposed as the ground of these experiences."²⁹ Kant is not here merely uttering the tautology that the notion of outer presupposes that of space. He is telling us something more profound.

We are being told here that the claim that the representation of space is derived from experience is full of difficulties. Outer experience, that which our representation of space allegedly may be derived from, may be of two sorts; it may be in itself either spatial or non-spatial. Kant rejects the latter alternative because all outer experiences require the representation of space for the spatial differentiation of objects, which is a prerequisite for any outer experience. An outer experience, an experience of that which is outside of my mind or soul, presupposes the representation of space. Thus, we are forced to choose the second alternative, that

space is derived from a spatial empirical experience. However, since the representation of space is presupposed as the ground of outer experience, it would appear that it could not be a product of such experience.

Outer experiences depend upon the representation of space. If it is to serve as a condition of outer experiences the representation of space must thus, itself, neither be an outer experience, nor a mere resultant product thereof. Assuming that all experience is outer and that the realm of the empirical is coincident with the realm of outer experience, it would follow that the representation of space is non-empirical.³⁰

A corrolary to this argument, which follows from it, and which Kant did not choose to persue, leads us to the conclusion that the representation of space is a priori. If space is non-empirical, and if all representations which are non-empirical are a priori, space must be an a priori representation.³¹

A problem arises here whose solution is essential to the determination of the role of space in the Critique. This is the problem of whether space is merely temporally prior to experience or whether it is logically presupposed by experience. If, for Kant, space is merely temporally prior to experience this calls into question its necessity as an integral element of experience, and as we shall see later, its role as a principle in the determination of what constitutes an objective experience for Kant. Because this argument on space has become the principle battleground upon which schol-

ars have disputed this question it is necessary for us to examine this argument in regard to the determination of what, for Kant, is the proper relation of space to experience in this regard.

Kant's first argument on space is subject to conflicting interpretations. Smith and Garnett choose a psychological interpretation and thus believe that Kant here attempts to show that the representation of space, in fact, temporally precedes experience.³² Paton, on the other hand, believes that the argument ought not to be interpreted as claiming that we know space before experience begins.³³ Nor does Paton believe that in any of the arguments of the Aesthetic Kant attempts to prove the temporal priority of space to experience.³⁴ He generally believes, space, for Kant to be logically prior to experience, although he does not believe that the first argument alone is sufficient to prove this contention.³⁵

Garnett gives the fullest expression of the argument for the temporal priority of space to experience. He basis his contention on the fact that in the first argument, Kant uses the expression schon zum Grunde liegen.³⁶ According to him, Kant's use of the word schon (already), proves that Kant is attempting to show that the representation of space temporally precedes experience.

It must be borne in mind however, and Smith concedes this, that by claiming that Kant attempts here to prove the temporal priority of the representation of space, "we are certainly reading into the proof more than Kant himself has

given full expression to ."37 Explicitly, Kant only attempts to prove what the first sentence of the text states; that "space is not an empirical concept derived from outer experience."³⁸ But to meet the Smith-Garnett contention here, we must look to what is implicit in the argument.

Kant's view that space is non-empirical, is based upon the belief that the representation of space must be presupposed by experience. It is, as we shall see, highly unlikely that Kant should mean by this that the representation of space must be given temporally prior to experience. But, if the representation of space would come before experience in a temporal fashion two possibilities would present themselves: either the representation of space lingers on after experience presents itself and exists coincident with it, or it vanishes at the appearance of experience.

The latter alternative does not seem to be what Kant argues for because the mere temporal precedence of the representation of space is not sufficient to distinguish objects as being "outside and alongside one another."³⁹ Thus, it would appear that for Kant, space must be temporally coincident with the experience of objects related to each other in space, and that the mere sequential priority of space would be insufficient as a condition of the experience of objects.

A more difficult contention to meet would be that Kant is arguing for both the temporal precedence of space to experience as well as the temporal coincidence of space with experience.⁴⁰ This view would seem to be more compatible with Kant's use of the expression schon zum Grunde liegen. It could

be argued that the word schon (already), signifies that the representation of space is already there, before experience, and the expression zum Grunde liegen, that it also accompanies experience as its foundation or ground.

The chief point at issue here, according to Garnett, is the meaning of the word schon which being ambiguous, might admittedly have a non-temporal logical meaning. He seeks to buttress his claim that schon is used here in a temporal sense by alluding to other passages in the Aesthetic in which the German text shows Kant to be using allegedly temporal words to describe the priority of space to experience.⁴¹ But even if Kant does use temporal words to describe the priority of space to experience, thus, even if Kant does use temporal words, this does not necessarily prove that he is arguing for the temporal priority of space to experience.

The German language, like the English language, was not created for the exclusive use of philosophers, nor does it contain all of the means necessary for the drawing of fine philosophical distinctions. The German language, in its ordinary usage, would therefore not seem to have as adequate a vocabulary to deal with philosophical notions like that of logical priority, as it would with notions like that of temporal priority, which is more commonly referred to in ordinary discourse. Words which have one meaning in ordinary language, like 'prior' (vor), which is used in ordinary language to describe a temporal or spatial order, in a philosophical context may be used to describe a logical order. Thus, it is certainly possible that Kant, as philosophers frequently do,

borrowed temporal expressions and used them in logical fashion. One might reasonably even claim that Kant mistakenly used temporal words to describe the precedence of the representation of space to experience. But the structure of the Kantian argument as well as explicit statements made elsewhere, show that even if Kant did use temporal words here, he did not consciously wish to show that space is temporally prior to experience.

If Kant wished to show that space is both temporally prior as well as temporally coincident to experience, why did he use the very expression schon zum Grunde liegen? This phrase clearly suggests a relation of dependence between the representation of space and experience, a relation which the notion of mere temporal coincidence does not entail. Temporal coincidence merely means mutual accompaniment in time, and does not imply any sort of influence of any of the elements which so coincide with each other upon each other. The phrase zum Grunde liegen, as used by Kant, suggests that the representation of space serves as the ground or foundation of experience, just as a building is dependent upon its foundation, so experience is dependent upon the representation of space. He would thus seem to be speaking of a stronger relation of dependence than that of temporal coincidence; a relation more akin to logical priority.

It could be claimed however, that Kant is here putting forward a very special notion of temporal priority. One might argue, and this interpretation has the support of a literal reading of the text, that Kant claims the representation of

the text, that Kant claims the representation of space to precede experience temporally, but once the representations of space and experience come to coexist, experience is in fact dependent upon space. This argument, which asserts both the temporal precedence and logical priority of the representation of space to experience, suffers from the flaw that although it is compatible with the words of the text it is incompatible with the meaning of the Kantian argument taken as a whole. In order for Kant to show that space is non-empirical he need merely show that it is a condition of experience and is not conditioned by experience. This is what he in fact does show. The argument of the text does not establish the temporal precedence of the representation of space, nor is the temporal precedence of the representation of space necessary to show that the representation of space is non-empirical. Thus, those who cling to the temporal meaning of schon, and thus to the notion of temporal precedence, cling to an appendage to the essential argument, an unnecessary appendage, which is of no philosophical import in relation to the establishment of the Kantian conclusion.

In a clearly unambiguous statement in the Introduction, Kant precludes the possibility of the temporal precedence of the representation of space to experience. He says: "But though all our knowledge begins with experience, it does not follow that it springs from experience."⁴² We see that experience is that with which knowledge begins. It would therefore follow that the representation of space (or time) could not temporally precede it. Moreover, Kant claims here that the temp-

oral priority of experience to knowledge does not imply that all of the elements of knowledge must spring from experience, or have experience as its source.

Furthermore, Kant explicitly rejects the attempts to empirically deduce the basic elements of human knowledge, and thus by implication, the kind of psychological interpretation Smith and Garnett attempt to superimpose upon his thought. In the *Analytic* Kant tells us that his aim is not merely to describe the history of human knowledge.⁴³ This view is clearly stated in the Prolegomena where he says:

...it is necessary to remind the reader that we are discussing, not the origin of experience, but that which lies in experience. The former pertains to empirical psychology and would even then never be adequately without the latter, which belongs to the critique of knowledge...⁴⁴

Kant's task is to exhibit those conditions which are necessary to the pure sciences, and by analogy, to metaphysics: "This attempt to alter the procedure which has hitherto prevailed in metaphysics by completely revolutionizing it in accordance with the examples set by the geometers and physicists, forms indeed the main purpose of this critique of pure speculative reason."⁴⁵ The metaphysics which is to result from Kant's project, which presupposes a priori representations, cannot be a science whose conclusions are merely contingently true. Kant tells us that "it must be possible for reason to attain certainty."⁴⁶ His assertions must be proven "apodeictically and not hypothetically."⁴⁷

A merely empirical description of the human cognitive process may result in a list of those elements of knowledge we actually have but this does not imply that we must nece-

ssarily have them. Kant criticizes both Locke and Hume for their attempts to derive the basic elements of human knowledge empirically. He says of their method that "this empirical derivation, in which both philosophers agree, cannot be reconciled with the a priori knowledge we actually do possess, namely, pure mathematics and general science of nature; and this fact therefore suffices to disprove such derivation."⁴⁸

If we are to explain, with a *podeictic* certainty, at least how the pure sciences are possible, we are able to supply those a priori conditions which are necessary for them to function correctly. A mere descriptive list of the elements of knowledge which are actually used by the human cognitive apparatus when one does mathematical or physical proofs, even if it contains a priori elements, does not show which of these elements are necessary. Thus, the psychological interpretation of the Critique, because it fails to take into account the fact that Kant is interested in exposing those conditions which are necessary for objective human knowledge, cannot explain how Kant can achieve his goal of showing, with a *podeictic* certainty, how metaphysics is possible as a science.

Because the logical structure of the first argument on space does not require it, and because statements made elsewhere in the Critique militate against it, the psychological doctrine of the temporal priority of space (and time) to experience is at best irrelevant to Kant's main project in the Critique, and at worst patently false. If there is any good reason to believe that Kant, in the first argument on space

(or time), is putting forward a doctrine concerning the relation of space (or time) to experience, the relation must be one of necessary dependence. The claim that space must temporally precede experience is open to serious doubt, and the claim that for Kant space, in fact accompanies experience is insufficient. Space must necessarily accompany experience if experience is to be possible, and this relation of necessary accompaniment, or temporal simultaneity and dependance, implies nothing less than the logical priority of space to experience.

If there are some who are yet unconvinced that Kant argues for the logical priority of the representations of space and time to experience, they need look no further than the second argument of the Metaphysical Expositions. While the first argument on space explicitly attempts to show that space is non-empirical, the second attempts to show that it is a "necessary a priori representation, which underlies all outer intuition."⁴⁹

Kant is not, as Smith correctly suggests, merely arguing here that space is a priori.⁵⁰ Kant would not need a new argument to substantiate this claim, since, as we have seen, this follows as a corollary of the first argument. The a prioriity of space is a direct result of its non-empirical nature.⁵¹ Kant, however, in attempting here, to exhibit the necessary dependence of experience upon space, and hence that space is an a priori representation necessary for experience.

Garnett, in his interpretation of the argument, expands it beyond reason. He contends that Kant is not merely attempt-

ing to show that "space is essential to all intuitive thinking" but also that "space has a necessary nature."⁵² His contention seems to be that where Kant claims space to be a priori, he means not only that it is non-empirical, but also that it has certain features which necessarily belong to its concept. Kant may in fact consider certain features essential to the concept of space; its unity, infinity, and intuitive character as necessarily belonging to it. But at this point in the text these features are unspecified. Thus, if Kant would here be arguing that space has certain characteristics which necessarily belong to it he would be arguing that an unspecified necessary nature is required by space. The problem that Garnett faces here is that there is nothing in the text here to here support the view that Kant here argues that space has a necessary (though unspecified) nature.

This second argument on space is quite uncomplicated. It makes explicit what is implicit in the argument. The conclusion, that "space is a necessary a priori representation which underlies all outer intuitions," follows from the fact that "We can never represent to ourselves the absense of space, though we can quite well think it empty of objects."⁵³ Because outer intuition is dependent upon space, space is a representation necessary for outer intuition. Because space is a representation which can be thought apart from experience, it is independent of empirical experience, and therefore a priori.

One source of confusion here lies in the contention that we cannot represent to ourselves the absence of space.⁵⁴ One

might argue that prima facie, this claim is false. But if we read the second sentence of the argument together with the first, it would seem that Kant appears to mean here that in having any outer intuition, we cannot represent the absence of space. For Kant, space is a necessary element in all outer intuitions and not necessarily all intuitions.

It is very important to recognize fully what Kant means here when he claims that we cannot represent to ourselves the objects of outer sense without space. There has, of late, been some speculation by Strawson concerning the possibility of the objective knowledge of an auditory being in an auditory universe. Such a universe would not be spatial in the same way that ours is. Thus, if an auditory being could have objective knowledge in such a universe, one could not argue that space is not necessary for our knowledge of objects of outer experience. All such speculation is really beside the point here, since Kant is not interested in speculating about the epistemological conditions for the objective knowledge of a purely auditory being any more than he is concerned with purely visual beings.⁵⁵ Kant's Critique does not concern itself with the epistemology of perceptual cripples, but rather with adult, normal, human beings: "For we cannot judge in regard to other thinking beings, whether they are bound by the same conditions as those which limit our intuitions and which for us are universally valid."⁵⁶ Thus, it would seem to follow, according to Kant, that it is for all normal, adult, human beings that space is an a priori representation which must be presupposed as the ground of all our outer experiences.

In the second argument Kant tells us that we can think (denken) of space as empty of objects. This means that we can think of space as empty of empirical objects. Thus, we can represent space independently of empirical experience. Kant concludes that this representation of space as necessary and a priori is nothing else than space itself.

It should be noted that Kant's use of denken is regrettable within the context of the argument. It could lead us to believe that he is arguing that space is a thought or concept. He would appear to have used denken for lack of a better word. But its use forces him eventually to trade on the ambiguity of Vorstellung in order to show that space is an intuition. If the conclusion here would be that space is a concept, Kant would later have to argue that a concept is an intuition, which is contradictory. Instead, he assumes, that a thought of space is a representation of space, and that space is a representation. He is thus free to argue later, from the assumption that space is a representation to the conclusion that space is an intuition.

The third argument on space in the First Edition should be considered together with what is later called the Transcendental Exposition. Because it follows the analytical method it properly belongs in a separate section. Kant apparently realized this, and in composing the Second Edition, he omitted it and replaced it with the Transcendental Exposition. In the case of the third argument on time, which also follows the logical sequence of the analytical procedure, he did not omit it in the later edition, but explicitly recognizes that

it is out of place in the Metaphysical Exposition, and properly belongs to the Transcendental.⁵⁷ Thus, in order to treat these arguments in their proper context we shall not discuss them as part of the Metaphysical Expositions.

In the third argument on space,⁵⁸ in the Second Edition, Kant attempts to prove that space is a pure intuition. The argument presupposes that we accept two basic Kantian assumptions. The first assumption is that there are only two kinds of representations, intuitions and concepts. The second is that intuition consists of knowledge of an individual.⁵⁹

In the text of the argument Kant gives us two reasons which support his claim that space is an intuition. He tells us first "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 space."⁶⁰ Space is one or unitary because all spaces are parts of one space. In the same way, as Quine would say, waters are all part of that one scattered object called water.⁶¹ Of course, water is an object of experience, and for Kant, space is not. But they resemble each other in that their parts coalesce (or are at least capable of coalescing), to form one unitary object. Thus, the fact that there are many spaces does not necessarily imply (as would be the case with apples), that space is a plurality. On the contrary, it is because spaces are parts of space (as is not the case with apples), that these parts joined together form a unitary whole. This unitary whole is space.

But it does not follow from the mere fact that space is

unitary, that it is not a concept, and therefore must be an intuition? Apparently not; for although all intuitions, for Kant, must be unitary, this does not imply that every unitary representation is an intuition. There are certainly some concepts which refer each to a unitary individual. The example frequently used to point this out is the concept of a natural satellite of the earth which refers to one and only one object.⁶² To use an even more Kantian example; if space is unitary, how could we distinguish between space itself as an alleged intuition and a concept of space, which must also have only one entity as an object?

It is difficult to know for certain whether Kant foresaw these particular difficulties. But the fact that he added a second premise for this argument for the intuitive nature of space is consistent with the view that he believed the first part of the argument alone, to be inadequate for the fulfillment of his purpose here of showing that space is an intuition.

The second part of the argument tells us that the parts of space "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."⁶³ Two points are being made here. The first is that the parts of space, spaces, are parts of that one space, whereas the parts of a concept, the characteristics which belong to it, function as elements rather than parts. The second, is that the parts of space do not logically precede space, while the elements of a concept logically precede the concept.

In making the first point here Kant tells us that space cannot be a concept because its constituents can only be thought of as in it . This is to say that spaces can only be thought as being contained in a strictly spatial sense, by space. They are parts of space in the same way as each drop of water in a glass is a part of the water in the glass. The relationship between a concept and the constituents out of which it is composed, those characteristics out of which it is composed and those characteristics of the object which it represents, is not that of a whole to its parts. These characteristics do not exist in the concept any more than we can write with the concept of a pen. The characteristic 'writing instrument' is a constituent of the concept of a pen, but certainly need not be thought as spatially contained in it. Thus, because the relationship between space and its constituents is markedly different from the relationship between a concept and its constituents space cannot be a concept; therefore, it must be an intuition.

In the second point of this second part of this third argument on space, Kant tells us that the kind of dependence which exists between space and its parts is quite different than that between a concept and its constituents. He says that "space is one, the manifold in it,...depends solely on the introduction of limitations."⁶⁴ Thus, space, as a unitary whole, is that which makes spaces possible. It is the sole ground of the possibility of spaces, or, if you like, it logically precedes them. A concept does not make its constituents possible, for it is nothing without them. In fact it is

only if it has constituent concepts that a representation can be a concept. Thus, because space is what makes its constituents; spaces, possible, it is not a concept, since a concept is possible only through its constituents. Again, since for Kant, there are only two kinds of representations, viz., concepts and intuitions; therefore, if space is not a concept it must be an intuition.

The last two sentences of this third argument of the Metaphysical Exposition serves as the consummation of the Exposition, and the conclusive last stage of Kant's use of the synthetic method here.⁶⁵ This third argument, as well as the two which precede it, serve to exhibit a number of essential characteristics of space. When these characteristics are taken together as a synthetic whole they will, in turn, serve to aid in the solution of the problem of synthetic a priori judgements.

These last two sentences read as follows:

Hence it follows that an a priori and not an empirical intuition underlies all concepts of space. For kindred reasons, geometrical propositions, that, for instance, in a triangle two sides together are greater than the third, can never be derived from the general concepts of line and triangle, but only from intuition, and this indeed a priori, with apodeictic certainty.⁶⁶

The claim of the above first sentence, that space is non-empirical and a priori, does not follow from the argument which precedes it, but is a mere summary of that which was shown by the first two arguments on space. That space is a unitary intuition follows, as we have seen, from this very third argument. Thus, Kant is claiming that it is because

space has these enumerated characteristics of purity, a prioricity, unity, and of being an intuition, that it serves to explain how geometrical propositions are possible. Since, as we have seen,⁶⁷ Kant believed all geometrical propositions to be synthetic and a priori, by showing how geometrical propositions are possible, he is showing how a certain class of synthetic a priori propositions are possible.

Kant's argument, again, is; because space is a pure, a priori, unitary, intuition, certain geometrical propositions are possible. This is an attempt to help answer the question of the possibility of synthetic a priori propositions, primarily in terms of his purpose as found in the first edition. The argument, proceeding in accordance with the synthetic method, does not attempt to show how synthetic a priori propositions are possible, by way of first showing how one of the pure sciences is possible.

Kant, no doubt attempts to show here how certain geometrical propositions are possible. But showing how geometrical propositions are possible is not equivalent to showing how pure geometry as a science is possible. Thus, the arguments on space here do not directly account for the possibility of geometry as a science. This is basically because Kant here only attempts to show how a certain group of synthetic a priori propositions are possible, of themselves, without regard for the requirement that in order for them to form a science they must exist in some sort of systematic interconnection.

Of course, we have already seen that the Argument from Analogy is absent from the First Edition, and that Kant does not claim there that in order to answer the question of the possibility of synthetic a priori judgements he must first examine the pure sciences. But he does claim there, referring to synthetic a priori judgements, that he wishes "to gain insight into the conditions which make each kind of such judgement possible...."⁶⁸ This would seem to be totally consistent with his conclusion here, in the Metaphysical Exposition. He is here examining the grounds of the possibility of geometrical propositions, which represent geometrical judgements, in order to show how these members of the class of a priori judgements are possible.

However, Kant's main problem is to show how synthetic a priori judgements are possible, in order to show how metaphysics as a science is possible. Thus, those synthetic a priori judgements he would seem to be most interested in are metaphysical rather than geometrical. In the Second Edition, the relationship between metaphysical and mathematical synthetic a priori judgements is spelled out by the Argument from Analogy. In the First Edition, we are left to wonder about Kant's purpose in showing how such geometrical propositions are possible.

Moreover, Kant, by insisting upon merely showing how geometrical propositions are possible, in the Metaphysical Exposition ignores the systematic nature of geometry and hence metaphysics.⁶⁹ This is a lack which the addition of

of the Transcendental Exposition of space implicitly recognizes, and to some extent attempts to remedy. But before going on to the Transcendental Exposition, a brief examination of the Metaphysical Exposition of time would be helpful.

The arguments in Kant's Metaphysical Exposition of time, with only slight alterations, run parallel to those of the Metaphysical Exposition of space.⁷⁰ The third argument here, again properly belongs to the Transcendental Exposition, but is not omitted in the Second Edition.⁷¹ Thus, in the Second Edition, it is the fourth argument on time which corresponds to the third on space.

In this fourth argument on time, Kant attempts to show that time is both an intuition and unitary. Before doing this, he has already, as with space, shown time to be non-empirical and a priori. Thus, again using the synthetic method, Kant argues that it is because time is pure, a priori, and a unitary intuition, that synthetic a priori propositions concerning time are possible. He gives as an example of such propositions, the proposition that, "different times are but parts of one and the same time."⁷²

Again, we find Kant attempting to show how a certain type of synthetic a priori proposition is possible, without considering the systematic interconnection of such propositions. The study of a systematic unity of temporal propositions or judgements would seem to be precluded from the outset here by the fact that temporal synthetic a priori judge-

ments are not in fact found to exhibit the systematic sort of relationship which spatial judgements of this sort exhibit apart from other sciences which they are related to.

There is no unified and unitary science of time in way that geometry is the science of space. Even if, as Kant here indicates,⁷³ there are a number of true temporal synthetic a priori judgements, these do not constitute a temporal correlate of the spatial science of geometry.

This argument as found in the First Edition, because of the absence of the Argument from Analogy there, is logically isolated from Kant's goal of showing how metaphysical synthetic a priori judgements are possible. Even if we assume the correctness of the Metaphysical Exposition of time, and its conclusion; that the temporal characteristics that Kant enumerates serve as the ground of the possibility of temporal synthetic a priori judgements, what is true here of temporal judgements which are synthetic a priori is not claimed to have any relation to the synthetic a priori judgements of metaphysics. Thus, the argument, as found in the First Edition, merely tells us what some of the conditions necessary for the possibility of certain temporal synthetic a priori propositions are, but not that these propositions need have any relation to metaphysics.

It appears that both the arguments on space and time in the First Edition, which we have discussed, suffer from two basic flaws when seen in relation to the goals of the Kantian enterprise in the Critique. Because all Kant uses

these arguments for is to help establish the possibility of spatial and temporal synthetic a priori propositions, the argument falls short, even in intent, of showing how metaphysical propositions are possible. Because the Argument from Analogy is lacking here, we need not be aware of any intended relation between temporal and spatial propositions, on the one hand, and metaphysical propositions on the other. But, even if Kant had told us in the First Edition,⁷⁴ which he did not, that we should expect to find a basic similarity between the different kinds of synthetic a priori propositions, and thus that what holds for spatial and temporal synthetic a priori propositions ought to hold for metaphysical synthetic a priori propositions; we would still be left with another difficulty of a serious nature.

In the First Edition, the group of arguments which later came to be called the Metaphysical Expositions, explicitly serves to establish the grounds of the possibility of certain kinds of synthetic a priori propositions. But, because no regard is shown to the manner in which each of these types of synthetic a priori propositions may be related to others of the same type, Kant seems to ignore their systematic interconnection. Thus, even if Kant would have established some sort of relation between such spatial and temporal synthetic a priori propositions, and metaphysical synthetic a priori judgements, as he did in the Second Edition, this problem of their relationship would remain. Because he did not even examine the relationship of each of the members of

each of the classes to the others of the same class, he could draw no conclusions which might relate to metaphysics as a whole. If metaphysics is a systematic enterprise, it would seem that to show how metaphysics is possible, one must show the propositions of which it is composed are related to each other. Kant, however, in examining the conditions which make synthetic a priori propositions possible here, ignores any connection among such propositions, which would be necessary for a systematic metaphysics. He thus ignores at this point one of the basic problems of metaphysics, which remains for the Kantian. It is, how are synthetic a priori propositions properly related to each other?

The addition of the Argument from Analogy and the Transcendental Exposition of space, in the Second Edition, results in if not the solution of the above two problems, at least a major step in their solution. But interestingly, although the Transcendental Exposition of space is quite helpful to Kant in this regard, we shall see that the exposition of time is a relative failure. Kant, in the Transcendental Expositions, argues a much stronger case for space than for time, and in so doing resolves a large proportion of the problems we have found in regard to space in the First Edition. The difficulties pertaining to time, for the most part, remain, because of the thinness of the Transcendental Exposition of time.

Unlike the Metaphysical Expositions, which follow the synthetical method, the Transcendental Expositions follow

the analytical method. Rather than first determining the characteristics of space in order to determine how synthetic a priori judgements are possible, Kant begins with the sciences of geometry and physics as given, and then goes on to enumerate the characteristics which space and time must have in order for these sciences to be possible.

Kant means by a Transcendental Exposition "the explanation of a concept, as a principle from which the possibility of other synthetic a priori knowledge can be understood."⁷⁵ This is to say that the function of the Transcendental Exposition of the concept of space is to exhibit that concept so that it can properly be understood as an explanatory principle which serves to explain how the science of pure geometry, a body of synthetic a priori knowledge, is possible.

The accomplishment of this purpose is dependent upon two conditions. The first is "that such knowledge does really flow from the given concept...." This means that the concept does in fact contain characteristics which could serve to explain how pure geometry is possible. The second condition is "that this knowledge is possible only on the assumption of a given mode of explaining the concept."⁷⁶ This means, in our case, that we must show that the science of geometry is possible only if the concept of space exhibits those characteristics which we show it to have. Thus, in order for us to exhibit the concept of space as a principle⁷⁷ which serves to explain the possibility of geometry, we must show

the characteristics we require to explain the possible of geometry belong to the concept of space. The question we will face is, given that geometry is a pure a priori science which expands our knowledge, what characteristics are essential to space, or what characteristics must belong to its concept, such that they constitute the only possible ground of explanation of geometry as such? Kant tells us: "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?"⁷⁸ Since geometry is synthetic space cannot be a mere concept.⁷⁹ If geometry is to expand our knowledge of space, the space that it deals with cannot be a mere concept. If space were a concept then geometry would concern itself with the mere explication of the characteristics which belong to that concept; an analytic enterprise which does not expand our knowledge. It follows that space cannot be a concept. If it is not a concept it follows from Kant's assumptions that it must be an intuition.⁸⁰

Moreover, because geometry is composed entirely of apodeictic propositions, that which its propositions, must be given prior to experience, and hence must be a priori and thereby pure. If space and its essential attributes were derived from experience then the synthetic judgements and propositions concerning space would all be contingent rather than apodeictic. But, according to Kant, geometrical judgements and hence propositions concerning space are apodeictic.

Therefore, for him, space must be a priori in that "it must be found in us prior to any perception of an object."⁸¹ If it is given logically prior to experience it must then be not merely a priori but also non-experimental, or pure. Thus, Kant concludes that it is only because space is a pure, a priori intuition that geometry can be apodéictic and contain synthetic a priori propositions.⁸²

In the Transcendental Exposition of the Concept of Space, Kant's purpose, as we have seen, is to show how pure geometry is possible. The relevance of this proof to Kant's main enterprise is accounted for by the Argument from Analogy, which asserts that whatever we find to hold true for pure geometry ought to hold true for metaphysics as well. The problem of how metaphysics as a science is possible is to be resolved by first showing how pure geometry is possible. Thus, the results of this examination of pure mathematics serve as a clue for the understanding of how metaphysics as a science is possible. Through understanding the grounds of the possibility of the propositions which constitute the science of geometry, we are aided in the understanding of the grounds of the possibility of the propositions which constitute the science of metaphysics.⁸³

Thus, the Transcendental Exposition of space does not suffer from the first problem which we found the Metaphysical Expositions to suffer from, as they are found in the First Edition. The conclusion that the Transcendental Exposition of space supports is not logically isolated from the main

enterprise of the Critique; the establishment of the grounds of the possibility of metaphysics as a science. This is because the Argument from Analogy establishes the connection between pure geometry, or pure mathematics, and metaphysics as a science.

The second difficulty which we found in the metaphysical Exposition of space (as found in both editions), was that Kant ignored the need for the systematic interconnection of synthetic a priori geometrical propositions. Because he only attempts to show how synthetic a priori geometrical propositions are possible. Kant restricts his attention to the validity of particular synthetic a priori propositions without regard for their systematic interconnection. It is this very interconnection of such propositions which would seem to be necessary if geometry, or for that matter, metaphysics, is to be a science.

Kant does not resolve this problem here in the Transcendental Exposition of space. However, it should be noted that the problem to be solved here is no longer that of the possibility of synthetic a priori geometrical propositions, but rather that of the possibility of geometry. This is to say, that Kant, at least tacitly, seems to recognize that in order to establish the possibility of metaphysics as a systematic enterprise, he must through the use of the Argument from Analogy, argue from geometry as a systematic enterprise, if his conclusion is to exhibit the possibility of a scientific, and hence systematic, metaphysics. Thus, although

Kant does not solve this problem here, he at least exhibits an implicit recognition of it, which he did not in the First Edition.

In the Transcendental Exposition of the Concept of Time, Kant attempts to show that his concept of time serves as the ground of the possibility of "the general doctrine of motion," which Kant considers to be a "body of a priori synthetic knowledge."⁸⁴ Since this pure and synthetic science is possible only if the concept of "alteration, and with it the concept of motion, as alteration of place"⁸⁵ are possible, and since motion (in so far as it can be known) is possible only in time, it follows that time serves as an explanatory principle for the possibility of the "general doctrine of motion." But of course not just any concept of time would serve here. The "general doctrine of motion" is a priori (Kant does not claim it to be pure), and synthetic. It follows that our concept of time must be a priori and must represent an intuition if we are to claim correctly that it "explains the possibility of that body of a priori synthetic knowledge which is exhibited in the general doctrine of motion, and which is by no means unfruitful."⁸⁶

Some Kantian scholars criticize the Transcendental Exposition of the Concept of Time on the assumption that Kant is here attempting to establish how a temporal science parallel to geometry is possible.⁸⁷ Of course the establishment of the possibility of such a science would contribute to the symmetry of the Kantian architectonic. But apart from aesthe-

tic considerations, Kant is not faced with any philosophical imperative to establish the possibility of a temporal science parallel to geometry, nor does he claim here that this is his intention. If Kant were here attempting to establish the grounds of the possibility of a temporal science parallel to geometry such an attempt would undoubtedly fail, for at least two reasons. Firstly, no such parallel science exists, and secondly, the "general doctrine of motion" is not the temporal analogue of geometry, for reasons soon to be explained.

In the Transcendental Exposition of time Kant's mode of argument seems to conform to the plan set out by the Argument from Analogy as stated in the Introduction to the Second Edition. He tells us there that in order to discover "how metaphysics as a science is possible,"⁸⁸ we must first discover how "pure mathematics" and "pure science of nature" are possible.⁸⁹ Thus, if Kant's argument concerning geometry in the Transcendental Exposition of space, aims at the conditions for the establishment of the possibility of "pure mathematics" his argument, in the exposition of time, concerning the "general doctrine of motion", would appear to aim at the establishment of the conditions of the possibility of "pure science of nature". Such a tact would be compatible with the aims of the Critique as stated in the Second Edition.⁹⁰

However, although this is what it seems Kant ought to be doing here, it is not what he in fact does. He should show us how time makes "pure science of nature" possible. But, in speaking of the "general doctrine of motion", he does not even once mention that it is pure.⁹¹ It could be argued that

its a priority implies its purity.⁹² However, as we shall soon see, in the Aesthetic, Kant makes a quite unambiguous statement which calls into question not only the purity of the "general doctrine of motion" but its a priority as well.

In the Transcendental Exposition of time, Kant implies that the concepts of motion and alteration are necessary for the "general doctrine of motion" to be possible as a body of synthetic a priori knowledge. It is only if time is a priori that this doctrine of motion can be a priori. But if "the general doctrine of motion" were empirical Kant could not use it as an example of a pure science. This is to say that under those conditions this Transcendental Exposition would not be 'transcendental',⁹³ nor would it serve to 'expose' the concept of time in the manner Kant requires.

Yet, this is what Kant seems to indicate in the Aesthetic itself. He says there that with the exceptions of space and time

...all other concepts belonging to sensibility, even that of motion, in which both elements are united,⁹⁴ presuppose something empirical. Motion presupposes the perception of something movable, consequently the movable must be something that is found in space only through experience, and must therefore be an empirical datum. For the same reason the transcendental aesthetic cannot count the concept of alteration among its a priori data. Time itself does not alter, but only something which is in time. The concept of alteration thus presupposes the perception of something existing and of the succession of its determinations; that is to say it presupposes experience.⁹⁵

There can be no motion, according to Kant, without that which is movable. That which is alterable or movable is empirical. It follows that the intuition of alteration and motion is impossible without the alterable. That which is alterable or

movable is empirical. It follows that the intuition of alteration and motion, because they are so dependent upon the empirical cannot be pure. If the intuitions of motion and alteration are not pure neither are their concepts.⁹⁶

If the concepts of alteration are not pure it follows that the "general doctrine of motion" which presupposes them cannot be pure.

The Argument from Analogy constitutes an attempt to argue from the so-called pure sciences to metaphysics. Because the "general doctrine of motion" is not pure it does not qualify as a term in the analogy. Thus, the Transcendental Exposition of the Concept of Time does not fit into Kant's projected argument as does his exposition of the concept of space. The argument on time, considering Kant's projected argument, is irrelevant to the establishment of metaphysics as a science.

One of the basic tenets which my argument has rested upon is the view that in the Transcendental Expositions, Kant's argument proceeds from his theory of the sciences; pure geometry and the "general science of motion", to his theories of space and time. This view is not greeted with universal assent. Thus, we must consider the nature of the opposition.

In a recent article on Kant's theory of geometry Humphrey tells us the following:

Kant's mature theory of mathematical truth requires his metaphysics of space. The relevant portions of the latter were developed prior to the former and serve as its conceptual basis. The former can be dropped from Kant's philosophy without affecting the latter. The converse is not true.⁹⁷

The intention here is not to dispute Humphrey's claim concerning the historical development of Kant's theory, nor his assertion that Kant's metaphysics of space serves as a basis for his theory of mathematical truth. However, the Transcendental Exposition of space clearly indicates that Kant's metaphysics of space is directly dependent upon his philosophy of mathematics, and that the absence of his theory of mathematics would not only disrupt his theory of space but his theory of metaphysics in general.

Humphrey disagrees with this. He says:

Examination of the First Edition of the Kritik shows that although issues belonging to the metaphysics of space (and time) and the philosophy of mathematics are discussed simultaneously, Kant nevertheless implicitly subordinates the latter to the former. In...the Second Edition of the Kritik, Kant further sharpens the distinction between the two areas, explicitly subordinating his philosophy of mathematics to his metaphysics of space (and time). Hence, no aspect of the latter either historically or conceptually depends upon the former.⁹⁸

There is little doubt that in the First Edition of the Critique Kant does subordinate his theory of mathematics to his metaphysics of space. It may very well also be the case that the distinction between the two is sharpened in the Second Edition and that the former is in fact dependent upon the latter in that edition. However, there is also a clear logical dependence of Kant's metaphysics of space upon his theory of mathematics there. The characteristics of space could not be exhibited there without resort to his theory of mathematics. Moreover, this dependence is exhibited in Kant's explication of his fundamental aims in the Second Edition, as stated by the Argument from Analogy. It is only through under-

standing of pure mathematics and physics that we can understand the metaphysical conditions which establish their possibility, and by analogy the possibility of metaphysics as a science.

However, one conclusion we have the right to at this point, in the light of the argument of this chapter and the preceding one, is that there is in fact a dependence, in the Second Edition of Kant's Critique, of his metaphysics of space upon his theory of the sciences. Moreover, Humphrey does not cite any textual evidence which might militate against the argument here.

In examining the Metaphysical and Transcendental expositions here, we have found that the distinction between the two types of expositions lies primarily in the difference of the logical order of the argument in each. The Metaphysical Exposition of space, as found in the First Edition, is characterized by the synthetic method. Using this method, Kant argues from what he believes to be the nature of space (the metaphysics of space), to those propositions of the science of space (geometry), which makes it possible. The content of the argument exhibits the dependence of Kant's theory of mathematics upon his theory of space. The logical sequence of the argument, the order of the argument, again exhibits the dependence of Kant's theory of science upon his metaphysics of space. This dependence, which exhibits itself in terms of the logical sequence of the argument is akin to the dependence of a conclusion of a deductive argument upon its premises, which serve to establish it. The dependence in terms of the content

of the argument is exhibited by virtue of the fact that geometrical propositions presuppose the Kantian concept of space, according to him, if they are to be valid.

The Transcendental Exposition of the Concept of Space, again exhibits a dependence of Kant's theory of mathematics (geometry) upon his metaphysics of space, in the sense that his metaphysics of space elucidates those conditions which make the science of geometry, as Kant understands it, possible. The Transcendental Exposition, however, exhibits a logical sequence which is almost the exact opposite of that of the Metaphysical Exposition. In the Transcendental Exposition Kant, using the analytical method, deduces his metaphysics of space from his theory of science (geometry). We find there that because geometry is a pure a priori, synthetic science, space must be a pure a priori intuition. Here, the logical sequence of the argument is reversed. The conclusion of the argument, which belongs to Kant's metaphysics of space, is dependent for its proof upon his theory of science (geometry).

It would appear at this point, that the Metaphysical Expositions of both space and time, as found in the First Edition do not explicitly serve to solve the problem of the possibility of the synthetic a priori judgements that belong to metaphysics as a science. This is because the geometrical and temporal synthetic a priori propositions which Kant attempts there to establish the possibility of, are never claimed by him to have any relation to exhibiting the grounds of the possibility of synthetic a priori judgements or propositions of metaphysics. Thus, although Kant may be able to es-

establish how the former types of synthetic a priori judgements are possible, the lack of a mediating link, like that of the Argument from Analogy, results, in the First Edition, results in a logical gap between the synthetic a priori propositions of the pure sciences and those of metaphysics, and hence between the sciences and metaphysics.

In the Second Edition, the arguments of the Metaphysical Expositions are buttressed by the Argument from Analogy. This latter argument exhibits the intended relation between different kinds of synthetic a priori judgements. However, both the Metaphysical Expositions of space and time do not fully serve to fulfill Kant's aims here. The arguments of both, following the synthetical method, exhibit a logical sequence which is the opposite of that of the Argument from Analogy. Also, both Metaphysical Expositions serve to merely show how certain geometrical and temporal propositions are possible. The Argument from Analogy purports to show how metaphysics as a science is possible by first showing how the pure sciences are possible. Here, Kant shows how certain propositions are possible, but not necessarily the sciences to which they allegedly belong. Moreover, in the Metaphysical Exposition of time Kant attempts to establish the possibility of temporal synthetic a priori propositions which do not belong to either the pure sciences, nor to any independent science, for that matter. Kant, by concentrating here upon the possibility of certain kinds of propositions, precludes the possibility of any reference to the systematic nature of the sciences, and hence of metaphysics.

It would seem that the Transcendental Exposition, which contains arguments whose sequence is compatible with the Argument from Analogy and which refers to the pure sciences as systematic wholes, would serve to compliment the Metaphysical Exposition. It may very well be that Kant intended the arguments of the Transcendental Exposition to be taken together with those of the Metaphysical Exposition. The arguments of the Metaphysical Exposition are more clearly understood in the light of the Transcendental Exposition since in the latter synthetic a priori propositions are viewed in relation to the sciences they constitute. However, because of the serious difficulties we have encountered in the Transcendental Exposition of time, it cannot serve as a conclusive argument in its own right, nor could it serve to buttress the Metaphysical Exposition of time. It is only Kant's Transcendental Exposition of space, which is found only in the Second Edition, which lacks the serious difficulties of the other expositions.

It follows that the Kantian argument in the Aesthetic, in the Second Edition is generally more structurally coherent than that in the first. Moreover, the arguments on space in the Second Edition, are more sound than those on time, and Kant's aims, as put forward in the Argument from Analogy, are fulfilled to a greater extent by his arguments on space than those on time. Thus, the aims of the Critique, as clearly stated in the Second Edition, appear in this respect to be more dependent upon Kant's philosophy of space, especially in the Second Edition, than upon his theory of time for their fulfillment.

1. CPR, A 9-10=B 13, p. 51.
2. CPR, A 10, p. 51.
3. See CPR, A 9=B 13, pp. 50-51.
4. See CPR, A 720=B 748, p. 581.
5. See CPR, B 145-146, p. 161.
6. CPR, B xxiii, p. 26.
7. See above pp. 41-42.
8. See CPR, A 21=B 35, p. 66, and A 21=B 36, p. 67.
9. See CPR, A 19=B 33, p. 65.
10. See CPR, A 22=B 36, p. 67.
11. CPR, A 23=B 37, p. 68.
12. See CPR, A 24-25, p. 69, and A 31=B 47, p. 75.
13. I. Kant, Prolegomena, p. 31.
14. Ibid., p. 22.
15. Ibid., p. 27.
16. Ibid., p. 20.
17. It should be noted that these two methods are not exact mirror images of each other. Although the analytical method usually begins with the pure sciences, the synthetical method, more often than not, does not explicitly assert the validity of the sciences as its conclusion. The detailed differences between these two modes of argument should become clear within the context of our discussion of the Aesthetic.
 Moreover, it should be pointed out that the analytical method, in particular, differs from the transcendental method. Kant's transcendental method of argument achieves its conclusion by way of reference to the possibility of experience. It assumes human experience as given, and those conditions which account for its possibility are established as the explanatory basis of experience. The analytical method is similar to the transcendental in that they are both regressive. They both argue from complex experiential wholes to the elemental constituents which explain these wholes. However, while the analytical method argues from experience in general to the conditions of its possibility, the analytical method argues from particular aspects of experience, the pure sciences, to the conditions of their possibility. Cf. N.K. Smith, Commentary, p. 45.

18. See CPR, A 87=B 120, p. 122.
19. CPR, A 46=B 64, p. 85.
20. CPR, A 28=B 44, pp. 72-73.
21. CPR, A 21=B 35, p. 66.
22. Cf. CPR, A 22=B 36, p. 67.
23. See above pp. 49-50.
24. CPR, A 23=B 37, p. 68.
25. CPR, B 38, p. 68.
26. I shall frequently belong to the arguments on space and time which properly belong to the First Edition as part of the Metaphysical Exposition. I mean by this term, when so used; those arguments of the First Edition, which later, in the second, came to be part of the Metaphysical Exposition.
27. One may of course wonder why, why, if Kant is interested here in solving the problem of the possibility of synthetic a priori judgements, he needs to show the a priority of both the intuitions as well as the concepts of space and time. The reason for this lies in the fact that, for Kant, although pure intuitions, as we shall see, serve as the elements of the connection of the concepts of subject and predicate in synthetic a priori judgements, such judgements require that these intuitions be constructed in conformity with spatial and temporal concepts. If the spatial concepts (sub-concepts of the concept of space) required, would be empirical, it would follow that the intuition constructed in conformity with them would be empirical. If that would be the case, spatial and temporal intuitions could not serve as the link to connect the concepts of subject and predicate of synthetic a priori judgements. See CPR, A 715-716=B 733-34, p. 578, and A 718=B 747, p. 581.
28. 'Representation' (Vorstellung), is a vague term, which for Kant could refer to almost any cognitive state. Here Kant seems to mean by "the representation of space" (die Vorstellung des Raumes) not a mere spatial representation, but the representation of space. The first sentence of the argument indicates that Kant is concerned here with space, as it is represented to us.
29. My translation, KrV, A 23=B 38, p. 67.
30. This premise is not an explicit, but Kant's argument requires it. See CPR, B 147, p. 162.
31. See CPR, p. 1-3, pp. 41-43.
32. See C.B. Garnett Jr., The Kantian Philosophy of Space,

(Port Washington, N.Y.: Kennikat Press, 1965), pp. 164-167, and N.K. Smith, Commentary, pp. 101-103.

33. H.J. Paton, Kant's Metaphysics of Experience, Vol. I p. 111.

34. Ibid., pp. 136-137.

35. See ibid., p. 80 and p. 112.

36. See C.B. Garnett, The Kantian Philosophy of Space, pp. 166-167.

37. N.K. Smith, Commentary, p. 101.

38. CPR, A 23=B 38, p. 68.

39. Ibid.

40. See C.B. Garnett, The Kantian Philosophy of Space, pp. 166-167.

41. See ibid., pp. 167-171.

42. My translation, KrV, B 1, p. 38, cf. CPR, p. 41.

43. See CPR, A 86-88=B 118-120, pp. 121-122.

44. I. Kant, Prolegomena, p. 51.

45. CPR, B xx11, p. 25; also see B 19-25, pp. 55-58.

46. CPR, B 22, p. 57.

47. CPR, B xx11, p. 25.

48. CPR, B 128, p. 128.

49. CPR, A 24=B 38.

50. See N.K.N. Smith, Commentary, p. 103.

51. See CPR, B 2, p. 42.

52. C.B. Garnett, The Kantian Philosophy of Space, p. 180.

53. CPR, A 24=B 38, p. 68.

54. Cf. P.F. Strawson, The Bounds of Sense, pp. 58-59.

55. It is for this reason that the kind of examples that Bennett considers are irrelevant to the Critical philosophy. Cf. Jonathan Bennett, Kant's Analytic (Cambridge: Cambridge Univ. Press, 1966) pp. 33-34.

56. CPR, A 27=B 23, p. 72.
57. See CPR, B 48, p. 76.
58. Its temporal correlate is found in the fourth argument of the exposition of time.
59. See Smith, Commentary, pp. 106-107.
60. CPR, A 24=B 39, p. 68.
61. See W.V. Quine, Word and Object, (Cambridge, Massachusetts: M.I.T. Press, 1960), p. 91.
62. Ibid., pp. 95-96.
63. CPR, A 24=B 39, p. 69.
64. Ibid.
65. See CPR, A 31=B 47, p. 75. Interestingly, Kant here seems to believe that he can establish the possibility of geometrical propositions, (and in the Transcendental Exposition of space the possibility of geometry) without first showing that space is infinite. However, the infinity of space follows directly from its intuitive nature and unity. Kant's relegation of the arguments for the infinity of space after that of the conclusion of the Metaphysical Exposition does not signify its lack of importance. Rather, because this argument is already implicitly included among the others, Kant may have seen them as complete for his purpose, and thus added the argument on the infinity of space to clarify or make explicit what was already implicit in the third argument on space, in the Second Edition.
66. CPR, A 25=B 39, p. 69.
67. See above pp.
68. CPR, A 10, p. 51.
69. Those arguments of the Metaphysical Expositions of space and time of the First Edition (the third argument in both), which because they follow the analytical method seem to properly belong to the Transcendental Exposition, suffer the same flaw.
70. For a full comparison see N.K. Smith, Commentary, pp. 123-125.
71. See CPR, B 48, p. 76.
72. CPR, A 31, p. 75.
73. See CPR, A 31=B 47, p. 75.
74. This is what he did in the Second Edition.

75. CPR, B 40, p. 70.

76. Ibid.

77. The word 'principle' (Prinzip), is used here somewhat unfortunately. 'Ground' (Grund) would have been more appropriate because it has fewer technical connotations which might confuse Kant's meaning here.

78. Ibid.

79. See CPR, B 14, p. 52.

80. Cf. CPR, B 40-41, p. 70.

81. CPR, B 41, p. 70.

82. Kant also concludes that space is the form of outer sense. However, to maintain the symmetry between the arguments of the Metaphysical and Transcendental Exposition, we shall, for the moment, put off our discussion of space as the form of outer sense.

83. It would seem therefore that those synthetic a priori metaphysical propositions, if they are to be apodeictic, must contain intuitions of space (and/or time) which are a priori and pure.

84. CPR, B 49, p. 76.

85. CPR, B 48, p. 76.

86. CPR, B 49, p. 76.

87. See H.J. Paton, Kant's Metaphysics of Experience, Vol. I, p. 129, and N.K. Smith, Commentary, p. 127.

88. CPR, B 22, p. 57.

89. CPR, B 20, p. 56.

90. In his "Innaugural Dissertation", Kant argues that "pure MATHEMATICS deals with space in GEOMETRY, and time in pure MECHANICS." Sec. 12, p. 62. The implication is that time serves as the ground of the possibility of pure mechanics in so far as the latter is used in pure mechanics. In the First Edition of the Critique, we find time to serve as the ground of the possibility of "apodeictic principles concerning the relations of time, or axioms of time in general...." CPR, A 31 =B 47, p. 75. In the section of the Prolegomena which corresponds to the Transcendental Expositions of the Critique, we find time to serve as the ground of the possibility of both arithmetic and pure mechanics. See pp. 30-31. Here in the Second Edition of the Critique we find time to serve as the ground of the possibility of the "general science of motion".

This shifting of Kant's position, though perhaps subtle, seems to indicate his dissatisfaction with the relation between his theory of time and his theory of science. There is no such equivocation on Kant's part concerning space. In the above texts, it is always the case that space serves as the ground of the possibility of geometry (or geometrical propositions). See Dissertation, Sec. 12, p. 62; CPR A 25=B 39, p. 69; Prolegomena, p. 30; and CPR, B 40-42, pp. 70-71.

91. Interestingly, consistent with his view that "the general doctrine of motion" is a priori but not pure, Kant, in the Principles, holds that those principles of "dynamical employment will also indeed possess the character of a priori necessity, but only under the condition of empirical thought in some experience. CPR, A 161=B 200, p. 196.

92. Kant seems to use this sort of argument in the Transcendental Exposition of space. See CPR, B 41, p. 70. But this mode of argument is incompatible with what is implied in the Second Edition. See CPR, B 3, p. 44.

93. See CPR, A 11=B 25, p. 59.

94. space and time

95. CPR, A 41=B 8, p. 82.

96. It is clear that the kind of dependence upon the empirical which Kant is alluding to here is not the same sort as that found in the requirement spatial and temporal concepts must refer to possible experience in order to be meaningful. The context of the above quotation clearly indicates that space and time differ from motion and alteration in this respect.

97. Ted B. Humphrey, "The Historical and Conceptual Relations between Kant's Metaphysics of Space and Philosophy of Geometry", Journal of the History of Philosophy, XI (October, 1973), 511.

98. Ibid.

CHAPTER III

SPACE AND TIME AS CONDITIONS NECESSARY FOR HUMAN KNOWLEDGE: A PRELIMINARY VIEW

While the Metaphysical and Transcendental Expositions deal with the characteristics belonging to space which make pure geometry possible as a science, other portions of the Aesthetic, which we shall deal with in this chapter, concern themselves with the manner in which space is related to experience. The characteristic relation of space to experience plays a role both in the establishment of the possibility of synthetic a priori judgements as well as in helping the subject order the objects of experience in a coherent manner.

Kant's discussion of the relation of space to experience is not conclusive in that it does not explain to us all of the characteristics of this relation. For a more complete discussion of this problem the two chapters succeeding this one must be consulted. However, the portions of the Aesthetic which we shall deal with here are of significance in that they give us a fuller understanding of the Kantian theory of space and also serve as a link between the problem of validity and that of meaning, in that they deal both with space as a pure intuition, and with that which the intuition must apply to. Moreover, some of the additions in the Second Edition of the Aesthetic, although they may not totally confirm,

tend to give support to the affirmation of my contention that the role of space becomes more prominent in the Second Edition of the Critique than in the first. Thus, we shall here continue to follow the order of the Kantian text in pointing out the manner in which this prominence displays itself.

In order for geometry to be possible as a science, we have seen that Kant's philosophy requires that space be non-empirical, a priori, unitary, intuitive and infinite. However, although these characteristics are all required, according to Kant, they are not all that are required, in that they do not constitute an exhaustive list of those characteristics of space (and time) necessary for the viability of the pure sciences. Kant's purpose in attempting to answer the question of what space is, does not compel him to give an exhaustive and complete enumeration of all the predicates which properly belong to space.¹ His concern is merely to give a complete enumeration of all those characteristics of space which contribute towards the explanation of how geometry, as a pure science, is possible. But the enumeration of the characteristics of space found in the Metaphysical and Transcendental Expositions does not suffice to fulfill this goal. Other characteristics of space are required by Kant in his explanation of the possibility of geometry. The additional characteristics of space which Kant utilized to fulfill this requirement appear to be regarded by him as derivative, in that he lists them among the conclusions which may be derived from the Metaphysical and Transcendental Expositions.²

The first of Kant's "Conclusions" is that "space does

not represent any property of things in themselves, nor does it represent them in their relation to one another."³ Spatial intuition, as a cognitive state, cannot represent the characteristics of things which can never be known; things in themselves. Nor can the relation among such things be regarded as spatial. Kant's argument here is that the representation of the characteristics of, as well as the relations among, things, are derivative, or at least dependent upon those things which are given as appearances. The characteristics of, and relations among, things, cannot be represented unless the things can be represented. Consequently, space cannot represent any of the properties or relations among things in themselves.

But there is something very puzzling about this argument. Kant tells us that we cannot know the characteristics of or relations among things in themselves because "no determinations, whether absolute or relative, can be intuited prior to the existence of things to which they belong, and none, therefore, can be intuited a priori."⁴ But if none of the characteristics of things can be intuited a priori, what then of space and geometry? It is only if space can be intuited a priori, that is prior to the objects of experience, that geometry can be possible. Thus, it does not appear that Kant could be claiming here that it is the universal relations and characteristics of space which cannot be known prior to the existence of the things to which they belong.⁵ Rather, his claim here, if it is to be consistent with the rest of

his doctrine of space, must be that the special spatial determinations of particular objects cannot be known prior to the objects to which they belong.

Although space is an a priori intuition and is thus given prior to experience, particular spatial determinations of objects are not given in the a priori intuition of space. Kant appears to believe that individual spatial determinations such as the size of a particular book and its relation to a particular desk cannot be known a priori. Such special characteristics and relations require the representation, as an appearance, of the things which they are characteristic of or related to. Since things in themselves cannot be represented in this manner, their particular spatial relations and properties, if they indeed have any, cannot serve as elements contained in an a priori representation of space.

For Kant, geometry is possible only if the characteristics and relations it ascribes to representations are universal; belonging to all objects of a certain nature. Characteristics belonging to individuals, whether they be empirical objects or things in themselves, because they are only contingently related to these objects they cannot be known independently of our knowledge of the individual, and therefore cannot be known a priori. It is for these reasons that a pure system of geometry could not contain representations of such characteristics or relations among its concepts.

The Second conclusion that Kant derives from his Expositions of the concept of space is that "space is the form

of all appearances of outer sense."⁶ Kant does not explicitly elucidate what he means here by 'form'. It appears however, that when he claims that space is the form of the appearances of outer sense, he means at least that space provides an essential structural element of the appearances of outer sense.

Although particular spatial relations are dependent upon empirical objects which they relate to each other, the general ability to organize objects in a spatial manner must be given logically prior to the objects which are organized. Although the determination of the particular spatial relations requires experience, the universal relation of all outer appearances in space precedes experience.

Kant's claim here, that space is the form of the appearances in outer sense means that space, as the means of ordering the objects of outer sense, is necessary for our intuition of such objects. Consistent with his Copernican Revolution, Kant believes space to be "the subjective condition of sensibility under which alone outer intuition is possible for us."⁷ It is because we have the ability to determine the spatial characteristics and relations of objects that we regard them as existing in space. Although empirical characteristics and relations of space are dependent upon experience of the objects of outer sense, our experience of objects of outer sense is primarily dependent upon our ability to spatialize these objects. However, this necessity, that space is required for the representation of outer appearances, is a hypothetical rather than a universal necessity. It applies only to human intuition, in so far as we can tell. Although space

is required for human knowledge, what the requirements for other beings are we cannot know "for we cannot judge in regard to the intuition of other thinking beings."⁸

While space is the form of all appearances of outer sense, time, at least initially, is the form of all appearances of inner sense.⁹ What distinguishes the primary domains of space and time? What does Kant mean by "outer" as opposed to "inner" sense? Kant tells us that inner sense is that "by means of which the mind intuits itself or its inner state" and which "yet yields indeed no intuition of the soul itself as object."¹⁰ The soul, or mind, is not itself an object for inner sense. But what does "our inner state" consist of? In one place in the Critique Kant tells us that it includes the feelings of pleasure and pain,¹¹ in another, objects of pure understanding, or thoughts as opposed to any substantia phaenomenon,¹² in yet another it includes "our own selves as we appear to ourselves."¹³ Thus, the 'objects' of inner sense include pleasure and pain, pure thoughts, as well as the appearance of ourself to ourselves.

The notion of objects of outer sense, or the domain of those objects which represent to ourselves as those which exist outside of us, is somewhat ambiguous, in so far as there are two different kinds of objects which exist outside of us; appearances and things in themselves. Kant recognizes this;

The expression 'outside us' is thus unavoidably ambiguous in meaning, sometime signifying what as thing in itself exists apart from us, and sometimes what appears only to outer appearance. In order, therefore, to make this concept, in the latter sense--the sense in which the psychological question as to the reality of outer

intuition has to be understood--quite unambiguous, we shall distinguish empirically external objects from those which may be said to be external in the transcendental sense, by explicitly entitling the former 'things which are to be found in space'.¹⁵

It is these things, which are to be found in space, which are the objects of outer sense. Space, being the form of outer sense, provides the ability to relate these things to each other in a spatial manner, without which they cannot be known as objects of knowledge.¹⁶

It is because of the merely hypothetical nature of the requirement that space must apply to appearances that it need not apply to things in themselves.¹⁷ It is only as a condition of human knowledge that space is known as necessary for the representation of objects of outer sense. Thus, Kant tells us that "space comprehends all things as they appear to us as external, but not all things in themselves."¹⁸ Because things in themselves are beyond the realm of human knowledge the requirement that space must apply to them need not hold for them.

While it initially seems that Kant holds time to be nothing but the form of inner sense, and that "it cannot be a determination of outer appearances,"¹⁹ it soon appears that it also "is the formal a priori condition of all appearances."²⁰ He argues that since all representations, even outer representations, are determinations of the mind, and because all that belongs to this inner state is conditioned by time, both the proper objects of inner sense as well as those of outer sense must stand in time relation. Thus, time is the immediate condition of the objects of inner sense just as space is the immediate condition of the objects of outer sense.²¹

It is at first difficult to decipher Kant's intention in regard to his doctrine that space is the form of outer sense. How does this problem relate to his more central problem and its solution? Thus, if his doctrine here is significant it must in some way be germane to the problem of how geometry, and thus how metaphysics is possible.

Paton claims that the Kantian doctrine that space is the form of the objects of outer sense is crucial in regard to showing how geometry is possible. He believes that in the *Metaphysical and Transcendental Expositions* Kant attempts to establish the possibility of applied geometry. He tells us that for Kant, "because space is the form of pure intuition, pure geometry must apply to the sensible world."²² Kant, in the section of the *Prolegomena* which corresponds to the Aesthetic does in fact confirm Paton's claim. He says: "Sensibility, the form of which is the basis of geometry, is that upon which the possibility of external appearances depends. Therefore, these appearances can never contain anything but what geometry prescribes to them."²³ In the *Critique* itself Kant does not yet explicitly assert that he has established the grounds of the possibility of the application of geometry to appearances as a result of the conclusion that space is the form of the objects of outer sense. However, it would seem that the conclusion, that space is the form of outer sense, is a necessary condition for the applicability of geometry to the world of sensible objects. Without this condition applied geometry would be impossible. If the objects of external sense were not spatial, geometry, the science of space, could not

tell us anything about them. But the mere fact that space is the form of outer sense is not sufficient, at least not thus far, to establish the validity of applied geometry. In fact, it is not until much later in the text, in the Axioms of intuition, that Kant states that he has established fully the grounds of the possibility of the application of pure geometry to appearances, and it is first there that he asserts that "what geometry asserts of pure intuition is undeniably valid of empirical intuition."²⁴

No doubt, for Kant, if his Argument from Analogy is to hold he must show that geometry must apply to our world. Unless he shows this he cannot profess to show that metaphysics applies to our world. Just as geometry must specify the relations of spatial objects so metaphysics must be able to specify the nature of the universal relations which apply to all. This is to say that it must be able to specify the rational structure of the universe. However, although Kant may be able to establish the grounds of the possibility of the application of pure geometry to appearances, he cannot complete this project in the Aesthetic, where his preoccupation is with the problem of showing what the characteristics of material objects must be for them to be amenable to geometrization.

In the Aesthetic, the applicability of space to objects is restricted in two ways. Space cannot here apply to objects of inner sense nor to things in themselves. It is because of the restrictions Kant placed upon space that he believed that he had established the "reality", that is, the objective validity, of space in respect to whatever can be pre-

sented to us outwardly as object...." Space is real and its determination of objects valid when the spatial relations and characteristics which are ascribed to things can be found to hold for such things. It is because of the general applicability of space to appearances that Kant considers space to be "empirically real" Yet, when we withdraw this limitation from experience, "it is nothing at all."²⁵ Apart from its proper objects it is transcendentally ideal, or a mere function of cognition which has no claim to reality.

The mode of distinguishing between spatial and temporal intuition which is used here by Kant in the Aesthetic is not new to him. Even as early as the Dissertation space was²⁶ "the condition of things sensible externally" and is "the foundation of all truth in external sensuality."²⁷ "Time on the other hand more nearly approaches a universal and rational concept, by embracing with its own relations absolutely all things."²⁸ Time encompasses "thoughts in the mind"²⁹ as well as "immaterial things."³⁰ In the Dissertation as in the Critique, space and time are the formal principles of that which is sensible.³¹ They are not however, the formal principles of intellectual cognition³² and thus, do not apply to "things as they are."³³

We find in the Dissertation no distinction between the objects of space and time in that the objects of one are said to be more real than those of the other. No doubt, Kant does consider the science of space, geometry, to be the exemplar of the sciences there, but this is not said to be due to any characteristic of space.³⁴ Although we can use a spatial di-

agram to characterize time,³⁵ in the Dissertation, as in the First Edition of the Critique, time appears to be more fundamental than space. This is because we find there, in the Dissertation, that the scope of time is more universal than that of space. Time, in the Dissertation, is the principle which serves as the foundation for our use of "the laws of reason", and even more importantly, it is the condition without which space would be impossible.³⁶ We shall see later how this priority, if not reversed, is altered, if not in the First, but in the Second Edition of the Critique.

After reading only the Dissertation and the First Edition of the Critique one may easily be led to the belief that space is of a secondary sort of importance in relation to the position of time in Kant's Critical philosophy. Gotfried Martin, for example believes that the ubiquity of time implies that for Kant, it alone is the prime determinant of what is. He says that "strictly speaking it is only true that all appearances are in time, so that strictly speaking time is the decisive character of being."³⁷ But in fact, we shall see that the initial limitation of space to the objects of outer sense is dropped in parts of the Second Edition, and with good reason. Paton regards the limitation of space as the condition of outer experience as "a real difficulty, and one which involves Kant in continual embarrassment throughout the Critique."³⁸ Although this may be true of the First Edition, this is not the case in the second, we shall see that Kant recognizes space as a condition of inner as well as outer sense.

We shall see that the Kantian Critical philosophy evolves in a manner so that it is space which becomes the prime determinant of the actuality of things as appearances. Initially, space and time merely serve as conditions necessary for our apprehension of intuitions; however, later, in the Second Edition, especially in the *Analytic*, Kant isolates space as that condition which when present, guarantees the actuality of the thing given to sense, as objective. This is to say that space will be shown to be the prime determinant of being, if we mean by 'being' the being of an object of knowledge (*Gegenstand*), as opposed to the being of a mere idea or thought (*Objekt*).³⁹

Time, as the condition of objects of inner sense is the condition necessary for that which may be felt, or thought, or imagined, but not the immediate condition which determines for us that which can be objectively known. This contention will be pursued further in my discussion of the *Analytic*, but for the moment, it should be pointed out that even in the *Aesthetic*, Kant, in the Second Edition, tells us that "the representations of the outer senses constitute the proper material with which we may occupy our mind."⁴⁰

Although the contention that only objects which exist in space are objectively real as objects of knowledge is not put forward in the 1781 Edition of the *Critique*, the seed of this position can be found in Kant's *Metaphysical Foundations of the Natural Sciences* which was written between the two editions of the *Critique*, in 1786. Kant argues there that empirical psychology must always remain far removed from the ranks

of what may be properly called a science. He tells us that this is because "the pure internal intuitions in which the souls phenomena are to be constructed is time, which has only one dimension." He goes on to tell us that because of this fact empirical psychology "can never be a science of the soul, nor even a psychological experimental doctrine."⁴¹ The natural, or physical sciences, on the other hand, are deserving of the title "science" because they deal only with bodies, and hence only with objects which exist in space.⁴²

In the Critique, it is only in the Second Edition of the Aesthetic that we find clearcut evidence of the subservience of those cognitive states which are objects of inner sense to those which are the proper objects of outer sense. Kant tells us there that the feelings of pleasure and pain do not constitute knowledge.⁴³ This denial of the cognitive reality of certain objects of inner sense as well as the consideration of objects of outer sense "as the proper material with which we occupy our mind",⁴⁴ is only present in the Second Edition of the Aesthetic.

Indeed, in the Aesthetic, it is only in the Second Edition that synthetic a priori judgements are "valid only for objects of possible experience."⁴⁵ This central tenet of the Critical philosophy is a consequence of Kant's restriction of the applicability of both space and time to possible experience.⁴⁶ This restriction, which applies to both space and time, is here asserted by Kant to apply to synthetic a priori judgements in so far as such judgements refer to intuitions which are both spatial and temporal.

In the next two chapters we shall concentrate, at least in part, upon the general problem of meaning of synthetic a priori judgements, and thus will attempt therein to establish what it is that Kant believes the concepts contained in such judgements must refer to if they are to be meaningful. However, in dealing with the Aesthetic, and thus questions pertaining to the very nature of space and time, one difficulty arises with regard to the relation of spatial concepts, as found in geometry, to experience. Geometry contains certain spatial concepts which represent elements or parts of space which seem to be idealizations; having no true correlates in possible experience, and thus no meaning or applicability to the world as we know it. If it were the case that such geometrical concepts as that of a line, point, or circle had no correlate in experience it would follow that for Kant pure geometry would not be valid for appearances and that the existence of space would not hold for objects in space. If this were so, for Kant, geometry, as a science, would be meaningless, and moreover, it might very well follow that metaphysics, which is to be like geometry would be meaningless as well. If this problem could not be resolved it could cause great difficulty for the entire Kantian enterprise, by rendering it meaningless and hence futile.

Charles Parsons raises this very problem in regard to spatial intuition. He implies that not all spatial intuitions are valid for objects of experience and therefore calls into question the Kantian doctrine of the validity of geometry for the objects of experience. Parsons says that "when we try to

give the notion of 'possible experience' a concrete intuitive meaning, we shall find that the limits of possible experience must be narrower than what, according to Kant, is the extent of our geometrical knowledge of space."⁴⁷

The essence of Parson's criticism of Kant's theory of space as it applies to geometry, is that pure geometry contains certain notions, points for example, which, if we follow Kant's philosophy, we will find that they cannot ever be represented in experience and therefore such geometry can never apply to experience.⁴⁸ To carry the thrust of this objection even further, it would seem that all of the spatial notions of pure Euclidean geometry are idealizations, the correlates of which cannot be found in experience. We can no more perceive a Euclidean line or triangle than a point. It would therefore seem that all of the spatial notions that are essential to empirical geometry have no possible empirical reference. It would follow that pure geometry, for Kant, cannot be valid for experience.

A defender of Kant might attempt to redefine the above Euclidean spatial notions so as to make them more compatible with experience. The risk involved in this course of action is that if it were followed it might result that a system of geometry based upon such redefined notions might no longer be a priori. Moreover, Kant himself seems to reject this course in that he admits that such spatial intuitions, of themselves, are unknowable. He tells us that "points and instants are only limits, that is mere positions which limit space and time."⁴⁹ But if points, for example, are unknowable, how can we expect

that that which pure geometry asserts to hold of experience; which does not contain points, lines, or triangles? Kant is rather adamant about the unknowability of the pure concepts of mathematics. He says:

Mathematical concepts are not, therefore, by themselves, knowledge...the pure concepts of the understanding, even when they apply to a priori intuitions, as in mathematics, yield knowledge only in so far as these intuitions--and therefore indirectly by means of the pure concepts also--can be applied to empirical intuitions.⁵⁰

A pure mathematical concept does not, of itself, constitute knowledge. It is only in so far as such knowledge has an experiential correlate that it conveys information. This is to say that the pure concept of a point is meaningful, or grants us knowledge of the world, only in so far as it applies to an empirical representation of a point.

The problem which now confronts us is; what sort of an empirical object would constitute a representation sufficiently similar to a pure concept or intuition of a point so that it may properly apply to it? What would Kant consider to be a sufficient degree of similarity between the pure point and its empirical representation so as to allow for the application of the former to the latter? If we expect the isomorphism between the two of them to be exact, as Parsons might, no concept or pure intuition would be meaningful unless we could find its exact duplicate in experience. However, because of the basic difference between pure and empirical representations no such exact duplication is possible. Thus, if we take the course Parsons might have us take no pure concepts or intuitions could apply to experience, and thus no pure concept

or intuition could be meaningful.

All that we could reasonably hope for is some lesser degree of similarity than Parsons might expect. The degree of similarity between a pure concept or intuition and its empirical correlate is not expected to be exact. This can be seen in the Schematism, which deals with the general problem of the relation of pure thought and intuition to experience. Kant tells us there:

In all subsumption of an object under a concept the representation of the object must be homogeneous with the concept; in other words, the concept must contain something which is represented in the object that is to be subsumed under it. This, in fact, is what is meant by the expression, 'an object is contained under a concept'. Thus the empirical concept of a plate is homogeneous with the pure geometrical concept of a circle. The roundness which is₁ thought in the latter can be intuited in the former.

Geometry applies to the empirical universe because there is a basic homogeneity between the concepts of geometry and the objects of the empirical universe. The similarity between the two need only be approximate. A small dot, as at the end of this sentence, for example, would seem to be homogeneous with the pure concept of a point. It is true that the similarity between the two is very rough, but it does not appear that Kant requires any more.

While the basic meaningfulness of a pure mathematical concept depends upon a basic similarity between them and certain empirical objects, the necessity which pure geometry imparts to certain spatial relations among pure spatial objects applies to empirical objects and their relations to the extent that the objects of experience and their relations re-

seemle their pure counterparts.⁵² Geometrical concepts are meaningful and grant us knowledge because we experience objects which resemble them. However, the degree of certitude which pure geometry grants us when it is applied to the world of experience further depends upon the degree of similarity between the pure geometrical concepts and the empirical objects to which they relate.⁵³

It would seem proper to conclude at this point that Parsons does not offer a decisive argument against what we shall see is the Kantian view that all objects which require space, because they either are experiences, or relate to experiences are meaningful. But although it appears, at least prima facie, at this point, that all the objects which are conditioned by space are knowable, this is not the case for every object which is conditioned by time. We have seen that Kant tells us that pleasure and pain which require time, cannot be known.⁵⁴ It would also seem that thoughts, also objects of inner sense, in so far as they have no empirical correlates cannot be objects of knowledge.⁵⁵ The idea of freedom, for example, is an object of inner sense and thus requires time for its representation as a thought, yet there is no empirical correlate which even roughly corresponds to it. Thus, freedom cannot be known.⁵⁶

While any particular object may or may not be knowable for Kant, the objects of outer sense all appear to be knowable. It may very well be that the realization of this fact led Kant to the conclusion, in the Second Edition, that both space and time are required if a thing is to be considered as

cognitively real.

The addition, in the Second Edition version of the Aesthetic, of the restriction of synthetic a priori judgements to objects of possible experience leads to the subordination, at least in one sense, of Kant's theory of time to his theory of space. Because spatial objects are either applicable to objects of experience or are themselves objects of experience, they are all compatible with the Critical limitation. Temporal objects and objects which require time for their apprehension, because they include feelings, for example, which have no experiential correlates, do not, as a group, fall within the Critical limitation. Thus, while spatial objects prima facie, all either constitute or apply to objects of possible experience, temporal objects do not. It follows that while any spatial object can in principle serve as a term in a valid and meaningful synthetic a priori judgement, this is not true of all objects in time. Moreover, in the next chapter, we shall see that this restriction of the meaningfulness of a priori judgements to objects of possible experience, which we find in the Aesthetic, is part of a general trend prevalent in the Second Edition, and that this general tendency results in the elevation of the role of space in the Second Edition.

Before completing this examination of Kant's theory of space in the Aesthetic it would be helpful to look for a moment at the relation between space and time as established by Kant there. We are told by Kant that because "inner intuition yields no shape, we endeavor to make up by this want by

way of analogies." Temporal intuitions are, of themselves, difficult to grasp. Thus, in order to obtain a more definitive notion of temporal intuition, we may use another sort of intuition, more easily conceivable, as a help. This other sort of intuition turns out to be a spatial intuition: "We represent the time-sequence by a line progressing to infinity, in which the manifold constitutes a series of one dimension only; and we reason from the properties of this to all the properties of time, with this one exception, that while the parts of the line are simultaneous the parts of time are always successive." Because it is easier to 'picture' spatial notions in ones mind than temporal notions, a spatial model may be helpful in comprehending certain temporal notions. Kant does not tell us here that it is compulsory that we think of time in spatial terms, but rather that it is permissible to do so since "all of the relations of time allow of being expressed in outer intuition."⁵⁷

This same view is found in the Dissertation where Kant tells us that "space is also applied as a diagram to the concept of time itself, in representing time by a line and its boundaries (moments) by points."⁵⁸ The role of time in the phenomenal world is also illustrated by Kant through the use of a spatial diagram:⁵⁹ "If you were to describe time by a straight line produced to infinity and if you were to describe things simultaneously at any point in time by lines joining at right angles, the surface which is thus generated will represent the phenomenal world both as substance and as accidents."⁶⁰

What all of these quotations have in common is that in each Kant regards spatial intuition as a non-obligatory help in the construal of temporal notions. It is this very non-obligatory character which Kant denies in the Second Edition.⁶¹ There, spatial intuition becomes necessary for the representation of time: "For time itself is not thinkable, save in so far as we attend, in the drawing of a line (which has to serve as the outer figurative representation of time), merely to the act of the synthesis of the manifold whereby we successively determine inner sense, and in so doing attend to this succession of this determination of inner sense."⁶² According to Kant, time cannot be thought without attending to the synthesis of the manifold of a line. It would appear that this synthesis of outer sense is necessary for the determination of time in thought.

Also, because time is inadequate of itself, for the representation of the alterations of inner states, Kant requires that time must be represented in conformity with a spatial analogy: "For in order that we may...make inner alterations likewise thinkable, we must represent time (the form of inner sense) figuratively as a line, and inner alteration through the drawing of this line (motion), and so in this manner by means of outer intuition make comprehensible the successive existence of ourselves in different states."⁶³ Thus, in the Second Edition, we find that time and certain objects of inner sense, cannot be thought apart from an analogy with space.

Thus, we have found that the objects of inner sense

include pleasure and pain, pure thoughts, and the appearance of ourselves to ourselves. We have seen that pleasure and pain as well as some pure thoughts are unknowable. In the light of the restriction added in the Second Edition of the Aesthetic, that synthetic a priori judgements are valid only for objects of possible experience, it would seem that these unknowables, because they are meaningless, cannot serve as a term in any valid synthetic a priori judgement. Other objects of inner sense, appearances of ourselves to ourselves, are only thinkable in conformity with a spatial analogy. Moreover, time itself cannot be thought of, in the Second Edition, which include the emphasis upon the Critical limitation and the lack of total conformity of objects of inner sense to it, and the dependence of both the objects of inner sense and the thought of time, upon space, point to the diminution of the role which time plays in the Critical enterprise and consequently a comparative strengthening of the role of space. Why Kant changes his initial views in the Aesthetic regarding the role which space and time play in the Critique is difficult if not impossible to understand if the Aesthetic is viewed in isolation from the rest of the Critical enterprise. In the Second Edition, in the Analytic, Kant consistently continues to emphasize the import of space and the spatial in a manner not done in the First Edition. Thus, an examination of the Analytic is crucial for a better understanding of the changes thus far examined as well as for insight into the doctrinal implications of such changes.

Notes

1. See CPR, A 23=B 28, p. 68.
2. See CPR, A 26=B 42, p.71, and A 32=B 49, p. 76.
3. CPR, A 26=B 42, p. 71.
4. Ibid.
5. In the very next paragraph we are told by Kant that "it can readily be understood how the form of all appearances can be given prior to the actual perceptions, and so exist in the mind, a priori, and how as a pure intuition, in which all objects must be determined, it can contain, prior to all experience, principles which determine the relations of these objects." CPR, A 26=B 42, p. 71.
6. Ibid.
7. Ibid.
8. CPR, A 27=B 43, p. 72.
9. See CPR, A 33=B 49, p. 77.
10. CPR, A 22-23=B 37, p. 67.
11. CPR, A 374, p. 349.
12. CPR, A 265=B 321, p. 279.
13. CPR, B 152-53, pp. 165-66.
14. This word is used here synonymously with its German language counterpart Object.
15. CPR, A 373, p. 348.
16. This word is here used synonymously with its German language counterpart Gegenstand.
17. Paton's comment here regarding the relation of space to things in themselves, to which I ascribe, is very helpful in revealing what the Critical doctrine ought to be here: "Strictly speaking, we are entitled to say of things-in-themselves only that we do not, and cannot, know them to be in space and time. Since we do not know them at all, we cannot say what they

are not. Nevertheless, Kant habitually uses the stronger expression, and I have not scrupled him in so doing." Kant's Metaphysics of Experience, Vol. I, p. 180.

18. CPR, A 27=B, p. 72.
19. CPR, A 33=B 49, p. 77.
20. CPR, A 34=B 50, p. 77.
21. See ibid.
22. Paton, Kant's Metaphysics of Experience, Vol. I, p. 106.
23. Kant, Prolegomena, p. 36.
24. CPR, A 165=B 206, p. 200.
25. CPR, A 28=B 44, p. 72.
26. Kant, "Innaugural Dissertation", Sec. 30, p. 92.
27. Ibid., Sec. 15, p. 71.
28. Ibid., Sec. 15, p. 73.
29. Ibid.
30. Ibid., Sec. 30, p. 92.
31. Ibid., Sec. 14, p. 63.
32. See ibid., Sec. 10, p. 60.
33. Ibid. Sec. 4, p. 55.
34. See ibid., Sec. 15, p. 69.
35. See ibid., Sec. 15, p. 73
36. See ibid.
37. Gottfried Martin, Kant's Metaphysics and Theory of Science, trans. P.G. Lucas, (Manchester: Manchester Univ. Press, 1965), p. 151.
38. Paton, Kant's Metaphysics of Experience, Vol. I, p. 147.
39. See above, p. 35, fn. 9.
40. CPR, B 67, p. 87.
41. Kant, Metaphysical Foundations of the Natural Sciences, p. 8.

42. See ibid., p. 9.
43. See CPR, B 66, p. 87.
44. CPR, B 67, p. 87.
45. CPR, B 73, p. 91.
46. See CPR, A 28=B 44, p. 72, and A 35+B 52, p. 78.
47. Charles Parsons, "Infinity and Kant's Conception of the Possibility of Experience", in Kant: A Collection of Critical Essays, R.P. Wolff ed., (Garden City N.Y.: Doubleday & Co., 1967), p. 37.
48. See ibid. pp. 52-53.
49. CPR, A 169=B 211, p. 204.
50. CPR, B 147, p. 162.
51. CPR, A 137=B 176, p. 180.
52. See CPR, B 147, p. 162.
53. See Paton, Kant's Metaphysics of Experience, Vol, I, p. 159.
54. See CPR, B 66, p. 87.
55. See CPR, B 146, pp. 161-62.
56. See CPR, B xxviii, p. 28.
57. CPR, A 33=B 50, p. 76.
58. Kant, "Innaugural Dissertation", Sec. 15, p. 73.
59. It is interesting to note that both Husserl and Merleau-Ponty use a diagram very much like the one suggested by Kant here, in their own theories of time. See Edmund Husserl, The Phenomenology of Internal Time Consciousness, ed. M. Heidegger, trans. J.S. Churchill, (Bloomington: Indiana Univ. Press, 1964), p. 64; and M. Merleau-Ponty, Phenomenology of Perception, Colin Smith trans., (New York: Humanities Press, 1962), p. 417.
60. Kant, "Innaugural Dissertation", Sec. 15, p. 66.
61. See Paton, Kant's Metaphysics of Experience, Vol I, p. 122.
62. CPR, B 154, p. 167.
63. CPR, B 292, p. 255.

64. Cf. Paton, Kant's Metaphysics of Experience, Vol. I,
p. 122.

CHAPTER IV

SPACE AND THE TWO EDITIONS OF THE ANALYTIC

According to Kant, knowledge contains two types of constituents; intuitions and concepts. Both intuitions and concepts may be either pure or empirical. Objects of knowledge are given in intuitions and thought through concepts. Human knowledge is thus a synthesis of that which is given and that which is thought in reference to the given.¹ Both the passive receptive faculty of intuition as well as the spontaneous faculty of thought are required for knowledge. Each has its own separate and distinct function without which human knowledge would be impossible.

In the Aesthetic Kant attempted to explicate the nature of the two a priori conditions necessary for the receptivity of objects given to knowledge; space and time.² In the Transcendental Logic Kant hopes to establish the basic and essential rules of the understanding without which no object can be known.³ These concepts of the understanding contain an a priori pure structure which delineates the requirements which must be met by any knowable object. The knowable must conform to the categories of the understanding, to time, and as we shall see, space as well.

If space and time are conditions which make receptivity possible what are the conditions which make thought possible?

Certainly all thought must conform to the rules of Aristotelian, or as Kant would call it pure general, logic.⁴ It serves as a necessary condition for all knowledge in so far as there can be no knowledge of that which defies the law of non-contradiction. Thus, pure general logic, according to Kant, serves as a negative condition of all truth. All that is true must conform to its rules, but not all that conforms to its rules must be true. It is "a conditio sine qua non, and is therefore the negative condition of all truth."⁵

For a proposition to be true it must be logically possible, but its mere logical possibility does not imply its truth. Kant, in the *Analytic*, does not attempt to divine a set of conditions which can be utilized to determine the truth of any and all propositions and judgements. He realizes that "a sufficient and at the same time a general criterion of truth cannot possible be given."⁶ The more general the criterion of truth the less effective it is in a particular situation. However, the more specific it is the less it can be utilized as a general criterion. The general principle that 'truth is the agreement of knowledge with its object,' even if universal, does not help me to determine whether 'It is raining outside,' is true. No doubt it is true if it is raining outside. But to determine the condition of the weather here, I must look outside. However, although I can determine the truth of the above proposition by looking outside, looking outside only serves as a sufficient criterion of truth for a very restricted class of propositions.⁷

Kant recognizes that he cannot establish one criterion of truth that is sufficient. Yet he is epistemologically unimpressed by the negative criterion that all that is true must conform to the rules of logic, for obviously much that is not self-contradictory is false. Kant thus attempts to establish a Transcendental Analytic which also contains a negative criterion of truth, in that that which comes into conflict with it cannot be true.⁸ Yet it is intended to be a narrower criterion than that given us by general logic.

Because for Kant, the realm of the thinkable is narrower than that of the logically possible, the determination of the knowable would be better served by the establishment of the parameters of thought as opposed to the parameters of logical possibility.⁹ It follows that Kant is here attempting to give a relatively narrow criterion for the determination of knowledge, and hence truth.

What relation does the determination of that which is thinkable or knowable have to the main Critical problem of how synthetic a priori judgements are possible? The Aesthetic, in so far as it deals with the pure intuitions of space and time deals with the problem of how the concepts of the subject and predicate of such judgements may be validly related to each other. But, as we have seen, the mere validity of a synthetic a priori judgement does not suffice to guarantee its truth. Obviously, even if the concepts of the subject and predicate of a synthetic a priori are validly related to each other, if the constituents of the judgement cannot have any empirical

reference they are meaningless, and therefore the judgement as a whole, which is a function of its constituent elements, cannot be true.

Kant, by determining the conditions of thought thus hopes to determine the conditions for the thinkability of synthetic a priori judgements, and to some extent their knowability. He however, also attempts to establish the proper limits of the valid application of thought to appearances, which we shall see coincide with the limits of human knowledge. Kant is here embarked upon the project of determining the limits of human knowledge. For him, this is a much more specific endeavor than the determination of the limits of logical possibility, and thus a step closer to showing how synthetic a priori judgements are possible.

The Analytic is among the most difficult portions of the Critique. By virtue of its complexity it defies almost any attempt at a sequential and orderly elucidation. Thus, due to a lack of alternatives, rather than out of respect for Kantian succinctness, I shall continue to follow Kant's own order of exposition, with emphasis, of course, upon those sections most relevant to exposing the role which space plays here.

Prima facie, it might appear that an examination of Kant's Analytic is totally irrelevant to the enterprise here, which concerns his theory of space. Kant tells us that "in a transcendental logic we isolate the understanding -- as above, in the Transcendental Aesthetic, the sensibility --

separating out from our knowledge that part of thought which has its origin solely in the understanding."¹⁰ If, as Kant claims here, that the *Analytic*, as part of a transcendental logic, is concerned solely with conception and understanding, rather than with intuition and sensibility, then an examination of the *Analytic* would seem to be irrelevant to my main purpose. But, in the *Analytic*, Kant also examines the human cognitive process as a whole, in so far as cognitive concepts must be applicable to representations represented by intuition. He therefore cannot ignore space, which is included in pure intuition. Moreover, we shall find that pure intuition must play a crucial role in the *Analytic*, and further, that this prominence of the spatial was augmented in some important respects in the Second Edition version of the *Analytic*.

In the first chapter of the *Analytic of Concepts*, Kant derives the Table of Categories from the Table of Judgements.¹¹ This portion of the text, called the *Metaphysical Deduction*, is both highly confusing and controversial.¹² Because its substance is not entirely germane to the argument here it will not be dealt with in detail.

It should be noted however, that the Table of Judgements represents the basic forms of analytical judgements. These are judgements which enable us to think a plurality of objects by means of a common mark or marks.¹³ The Table of Categories contains the basic types of synthetic judgements. These are judgements which unify the various elements, which appear to us, into objects. They serve to organize the constituents

of an appearance so that objects, pure and empirical, can be given to us.¹⁴ Although both the Table of Judgements and the Table of Categories represent pure a priori forms of thought, for Kant, it is only the latter, as we shall see, which serves as an integral constituent of all knowledge. Thus, it is to Kant's justification of the Categories, as an integral and necessary element of all human knowledge, that we now turn.

The justification of the necessary application of the pure concepts to appearances is to be found in the Transcendental Deduction. In the first section of the Transcendental Deduction, which is common to both editions, Kant prepares us for the arduous task which understanding the Deduction imposes upon our cognitive facilities. Although many of his remarks here are quite helpful, one essential fact which he does not state explicitly, but which is crucial for the understanding of the Transcendental Deduction is that the Deduction is not a deduction. This is to say, that Kant does not here deductively infer the necessity of each of the Categories for objective knowledge. This task is tackled in the Principles. Rather, we are here given a justification of the necessary applicability of the pure concepts, as a unified whole, to appearances. This point is stressed by Paton¹⁵ and cannot be overemphasized. The belief that Kant is attempting here to deduce each of the Categories may lead the reader to harbor false expectations in regard to his argument here.

In preparing us for the Deduction, Kant tells us that

it is more like that of the establishment, in the study of law, of the answer to a legal question (quid juris), than to a factual question (quid facti).¹⁶ Given a particular empirical state of affairs, the determination of the answer to a quid juris is a legal rather than an empirical problem.

We are concerned here with determining the applicability of the laws of the understanding to a particular state of affairs; appearances as given to human cognition. The facts are given. The question therefore is whether these laws of the understanding apply necessarily to these facts. As in the investigation of a purely legal question the answer here is to be found not by examining the already ascertained empirical data, but rather the law itself; the Categories themselves.¹⁷

We are told by Kant that the task of the Deduction cannot be left to the empirical psychologist or even the empirical philisopher:

Such an investigation of the first strivings of our faculty of knowledge, whereby it advances from particular perceptions to universal concepts, is undoubtedly of great service. We are indebted to the celebrated Locke for opening out this new line of enquiry. But a deduction of pure a priori concepts can never be obtained in this manner; it is not to be looked for in any such direction.¹⁸

Furthermore, any attempt at an empirical derivation of the Categories would be symptomatic of a basic misapprehension of their very nature. The Categories are a priori, as such they preclude an empirical derivation. If the Categories could be derived from experience they would be empirical rather than a priori

Not only would it be helpful for us to have a transcendental deduction of the Categories, their very nature requires it. The pure concepts of the understanding, in spite of the fact that they are a priori, contain, as thoughts, the basic predicates which apply to all objects, including empirical objects.¹⁹ How can these concepts contain, in pure thought, not only that which belongs to experience but that which necessarily belongs to experience? Although the Categories are a priori, and are pure, hence independent of experience, they contain that which necessarily belongs to experience. The need for a transcendental deduction, according to Kant, is motivated by this seemingly paradoxical nature of the Categories.

What Kant wishes to prove here, in the Analytic, is that just as space and time are the formal conditions without which objects cannot be given to knowledge so too "objects must likewise conform to the conditions which the understanding requires for the synthetic unity of thought...."²⁰ Thus the understanding and its pure a priori concepts are to be shown to be indispensable to appearances. Just as space and time are the conditions without which no sensible intuition can be given to the mind so too the pure concepts of the understanding are those conditions necessary for the thought of any object of experience: "they relate of necessity and a priori to objects of experience, for the reason that only by means of them can any object of experience be thought."²¹

In the First Edition of the Critique the Transcendental

Deduction is divided into three sections. The first section, as we have seen, is an introduction to the Deduction. The second is a provisional exposition of the Deduction, and the third, the authoritative exposition.²² Only the first was retained in the Second Edition.

In the Preface to the First Edition Kant tells us that there are two sides to the Transcendental Deduction,²³ one objective and the other subjective:

The one refers to the objects of pure understanding, and is entitled to expound and render intelligible the objective validity of its a priori concepts. It is therefore essential to my purposes. The other seeks to investigate the pure understanding itself, its possibility and the cognitive faculties upon which it rests, and also deals with it in its subjective aspect. Although this latter exposition is of great importance it does not form an essential part of it.²⁴

Apparently, the Objective Deduction is to serve as the justification of the objective validity of the Categories, that is of their necessary applicability to objects of experience. The Subjective Deduction, on the other hand, serves as an examination of the workings of the understanding.²⁵ The Objective Deduction is absolutely necessary for the Critical endeavor. In order for Kant to explain the possibility of synthetic a priori judgements he must first establish the conditions of their possibility, and in order to show this he must establish that the pure concepts are valid for all objects of possible experience.

The Subjective Deduction is of secondary importance to the Objective Deduction. It asks the question of "How is the faculty of thought itself possible?"²⁶ All that is necessary for us to show here in order to establish the possibility of

synthetic a priori judgements is that the Categories relate to experience. Although it would be helpful if we could show how this is the case, it is not crucial.²⁷ Moreover, Kant views the problem of the Subjective Deduction as that of the establishment of an explanation for a particular state of affairs. As such, because he does not believe that an exclusive explanation of the nature of the understanding can be given, his own explanation is only an opinion, which can be disagreed with, and for valid reasons.²⁸

We know that one of the main functions of the understanding is to bring synthetic unity among the elements of the objects which appear to us, to concepts.²⁹ Here, in the Subjective Deduction, Kant gives us an analysis of the elements of this synthesis.

Essentially there is but one synthesis. This synthesis has three elements. Each of these elements, or subsidiary syntheses, points to a subjective source of knowledge. These three syntheses are: (1) The Synthesis of Apprehension in Intuition, (2) The Synthesis of Reproduction in Imagination, and (3) The Synthesis of Recognition in a Concept. They respectively point to three subjective sources which make knowledge possible: (1) sense, (2) imagination, and (3) understanding.³⁰

Kant prepares us for the explanation of the first synthesis by first reemphasizing the role which time plays in regard to representations: "Whatever the origin of our representations, whether they are due to the influence of outer things, or are produced through inner causes, whether they arise a priori, or being appearances have an empirical origin,

they must all as manifestations of the mind belong to inner sense, All our knowledge is thus finally subject to time..."³¹ Kant here restates what was said in A 34=B 51, namely that time is the condition of all appearances: the immediate condition of those that are inner and the mediate condition of those that are outer. But something new is added here--the claim that time is a condition of a priori representations.³²

Kant has already told us that both our pure and empirical representations require synthesis if they are to be known.³³ They must be united into objects of knowledge. Every intuition contains a multiplicity of constituent elements; a manifold. In order for this multiplicity to be known as an object its elements must be unified or synthesized.

The first step in this unificatory process is the organization of the elements of the object so that they may be represented within a single moment. Thus, the elements of the manifold must "be run through and held together."³⁴ It is only if that which is given can be represented as a unit, which exists as such within a particular time, that it can be known. The temporal cognitive process, which unifies the manifold within a temporal moment, is the Synthesis of Apprehension. It essentially involves sensibility, the capacity for the reception of the given, and the organization of such data through a condition of sensibility--time. Space is not even mentioned here, and consequently is not viewed to be as essential as time in the reception of the manifold as a unit.

The mere unification of the elements of an intuition is not sufficient to grant us knowledge of that intuition as

an object. Experience, that is knowledge of objects, presupposes a reproduceability of the objects which are to be known. If each intuition given to us would be totally unique, experience would be totally impossible. In order for experience to have any continuity we must be able to reproduce that which was previously known. If we could not, then each present experience could have no relation to any past experience. If this were the case we could not draw a line in thought, or count to ten, or even know that this is a house.³⁵ The cognitive faculty which underlies this reproduceability is the transcendental imagination.³⁶

In order for me to know an object, according to Kant, not only must I be able to represent to myself a recollection of something previously perceived which it resembles, I must also know it resembles that which was previously perceived. This is the function of the concepts of the understanding. According to Kant, in making a judgement such as 'This is a house,' I am acknowledging that this object before me at this moment is similar to one previously perceived. In order to make this judgement properly I must unite all of the elements of the object before me in a moment., I must reproduce that previous cognition which it resembles, and I must affirm this resemblance. The affirmation of the resemblance between the two appearances is the function of the Synthesis of Recognition. This synthesis is accomplished through concepts: "For this unitary consciousness is what combines the manifold, successively intuited and thereupon also reproduced, into one representation."³⁷

Unfortunately, although this argument of the Subjective Deduction does point up the need for a unificatory cognitive faculty of a certain sort, perhaps concepts, it certainly does not prove the need for a priori concepts. The unificatory function could conceivably be performed by empirical concepts. This argument here merely tells us how such concepts might function if they were already assumed, but it does not justify their necessary application to appearances. Thus, we are not here given a justification of the pure concepts of the understanding, although we are given a speculative account of how such concepts might apply to appearances.

Apart from the threefold synthesis Kant also gives us what he calls a 'transcendental object', 'which prevents our modes of knowledge from being haphazard or arbitrary, and which determines them a priori in some definite fashion"³⁸ and yet "is nothing to us."³⁹ This 'object' cannot be known, yet its presence must be presupposed if we are to understand the possibility of "the formal unity of consciousness in the synthesis of the manifold of representations."⁴⁰

In order to help prepare us for the Deduction itself, Kant also adds that the identity of the self is required, if we are to know the object. Without it, according to Kant, the numerical identity of the object, which is required if it is to be known, would be impossible to establish. The foundation of this identity cannot be found in inner sense or in empirical apperception, for they are in a constant flux. The fixed and abiding self is a transcendental self. It is a self which is non-empirical, and thus not mutable. This "pure and origi-

nal unchangeable consciousness,"⁴¹ according to Kant, is that which makes experience possible.

This, as we shall see, represents an integral element of the Deduction proper. Kant tells us that "appearances in experience must stand under the conditions of the necessary unity of apperception...."⁴² In order for us to have appearances in experience we must presuppose a pure underlying notion of the self, so as to give these appearances coherence. Moreover, this unity of experience is the same as the unity of perceptions. Thus, the condition of the unity of experience is the same as the condition of the unity of perceptual objects. The pure concepts of the understanding serve as the conditions of the unity of perceptual objects. Thus, if the transcendental unity of apperception must apply to objects of possible experience, it follows that for Kant, the Categories must also necessarily apply to appearances.⁴³

The third section of the Transcendental Deduction, as found in the First Edition; the authoritative exposition, gives us the main argument of the Deduction in two forms. The first form of the argument is its "Progressive Exposition".⁴⁴ In the Progressive Exposition Kant attempts to exhibit the objective validity of the pure concepts of the understanding by arguing from the condition, the transcendental unity of apperception to the conditioned, appearances. In the Progressive Exposition, which is the second form of the argument, the order of the argument is reversed.⁴⁵

In the Subjective Deduction we learned that there are "three subjective sources of knowledge upon which rests the

possibility of experience in general and knowledge of its objects--sense, imagination and apperception."⁴⁶ Here, in the authoritative exposition, Kant accepts these as the three sources of knowledge and attempts to exhibit them as systematically interconnected, so as to show that they are all required for experience.

Beginning from above, in the Progressive Exposition, Kant tells us that a priori consciousness of self is a necessary condition for the possibility of perceptions, for unless I can unify my representations in one self I can have no objective representations.⁴⁷ Moreover, because this unity is a synthetic unity it presupposes imagination. Because it is a necessary and fundamental unity it presupposes the transcendental unity of imagination.⁴⁸ The unity of apperception as it is here related to the transcendental unity of imagination is nothing but the pure understanding.⁴⁹ The understanding, because it gives synthetic unity to appearances, must contain "a priori modes of knowledge which contain the necessary unity of the pure synthesis of the imagination in respect of all possible appearances."⁵⁰ These a priori modes of knowledge are the Categories or pure concepts of the understanding. Thus, because no knowledge is possible without the understanding (in its determining modes), it follows that "pure understanding by means of the Categories, is a formal and synthetic principle of all experiences, and that appearances have a necessary relation to the understanding."⁵¹

In the Regressive Exposition of the Transcendental Deduction Kant starts "from below, namely with the empirical,"

in order "to make clear the necessary connection in which the understanding, by means of the categories, stands to appearances."⁵² Appearance is that which is first given to consciousness. When combined with consciousness it is perception.⁵³ Every appearance contains a manifold which must be unified. Moreover, perceptions must be unified with each other. The faculty which combines the the manifold of appearances, and relates perceptions to each other is the imagination.⁵⁴ If perceptions are to be united in a determinate rather than a merely accidental manner there must be an objective ground which determines this unificatory process. This is the unity of apperception.⁵⁵ For Kant, it follows that "the objective unity of all empirical consciousness in one consciousness, that of original apperception, is the necessary condition of all possible perception...."⁵⁶ Kant says that "all consciousness as truly belongs to an all comprehensive pure apperception, as all sensible intuition as representation, does to a pure intuition, namely to time."⁵⁷ Kant goes on to equate the transcendental unity of apperception with the pure understanding, or Categories.⁵⁸ He then invokes the last stage of the Subjective Deduction, claiming that from the necessity that appearances be recognized we can infer the necessity of the Categories, and indeed their necessary application to appearances.

In the Transcendental Deduction, in the First Edition, Kant views time as the primary form of intuition. Moreover, it appears that as opposed to space, it here serves as the prime determinant of objectivity. Space is hardly even men-

tioned in this deduction of the First Edition.

In the Subjective Deduction, the first element of the threefold synthesis is the Synthesis of Apprehension in intuition. Kant tells us there that in order for us to apprehend an object (Objekt) in intuition we must be able to grasp its elements within a single moment. The manifold must be unified within the present.

This essentially temporal synthesis is a condition of space:

The synthesis of apprehension must also be executed a priori, that is, in respect of representations which are not empirical. For without it we should never have a priori the representations of either space or of time.⁵⁹

This makes it apparent that time here is the condition of space. But also it is, in a sense the condition of time. For any representation to be given to the mind that which is manifold in it must be unified within a particular time. As space and time contain manifolds they are subject to this temporal synthesis. This no doubt is a strange position, but it is indicative of some of the difficulties inherent in the Deduction of the First Edition.

Not only is space here dependent upon time, but in the First Edition, although it is considered to be an essential condition of outer appearances space is not considered to be a condition essential to all knowledge. In speaking of apprehension, or of the act of grasping that which is given to knowledge, Kant says that "all our knowledge is...finally subject to time, the formal condition of inner sense."⁶⁰ In the authoritative exposition Kant considers sense to be one of

"the subjective sources of knowledge upon which rests the possibility of knowledge in general and knowledge of its objects." Moreover, this faculty is dependent upon a priori intuition, as all perceptions are grounded a priori in pure intuition. But by pure intuition he does not seem to mean both space and time, as he adds parenthetically that by the ground of all perceptions he means "time, the form of their inner intuition as representations."⁶¹

No doubt this is totally consistent with the doctrine of the Aesthetic, in which Kant claims that "time is the formal a priori condition of all appearances whatsoever."⁶² But here this emphasis upon the temporal goes beyond the doctrine of the Aesthetic. In the latter, time is a negative condition without which appearances cannot be given to us. Here, in the Deduction, his doctrine of time is a positive doctrine in the sense that time is one of the constituent elements upon which all knowledge rests. The omission by Kant of space, as one of these constituent elements, implies that, for him knowledge is possible without space. Thus, by omitting any such reference to space, the doctrine of the Deduction of 1781 implies that those objects of inner sense which are not given to us in outer sense can be proper objects of human knowledge.

The importance of this doctrine of synthesis here, further points up the temporal character of the Deduction of the First Edition. For Kant, here, knowledge is a product of synthesis. Any synthetic activity requires time in so far as it is a process, which involves change. Smith tells us that:

In the subjective deduction experience is chiefly viewed

as a temporal process in which the given falls apart into successive events, which in and by themselves, are incapable of constituting a unified consciousness. The fundamental characteristic of human experience from this point of view, is that it is serial in character.⁶³

More specifically, the second of the synthesis implies the need for time in so far as it is a synthesis of reproduction, of producing again that which was previously given. Heidegger even goes so far as to claim, although I do not think that the text supports his view, that even the third synthesis, the synthesis imposed by concepts upon appearances, is essentially temporal.⁶⁴

There is little doubt that if we look at the Subjective Deduction of 1781 alone, that Kant appears to view experience as essentially temporal. This view is carried over, as we have seen, to the authoritative exposition, where time is emphasized as the universal formal condition of sense. The emphasis upon time in the First Edition gives superficial credence to Gottfried Martin's claim that for Kant: "Everything that is in time is actual,...time is the criterion of actuality."⁶⁵ The revisions Kant made in the Second Edition will show that Kant came to believe that it is space, rather than time, which is the decisive character of phenomenal being.

The source of at least part of Kant's motivation to revise the Transcendental Deduction of 1781 resides in an anonymous review of a book by A.H. Ulrich entitled Institutiones Logicae et Metaphysicae. The review is to be found in Allgemeine Literaturzeitung of December 13, 1785, (Number 295). Kant tells us that in it the reviewer agrees with Ulrich's opinion that the Transcendental Deduction does not suffice to

establish the limits of reason, and thus, of metaphysics. Moreover, we are told by Kant that according to the reviewer the reason why the Critique so totters on its foundations is due to an unclear and inadequate deduction of the Categories.⁶⁶

In fact, one of the major criticisms of the review is that Kant does not clearly distinguish between that which is actual and that which is not. This is a distinction which is taken very seriously by the reviewer who tells us that the application of the Categories to appearances depends upon our first determining that the objects that they apply to are actual. He gives us the example of the Category of Causality telling us "that in order for me to know that when the sun shines the stone becomes warm I must first know that the sunshine, the cause of the warmth of the stone, is actual." This, according to the reviewer, is just what the Deduction of 1781 is unable to determine. It merely explains to us "the manner in which objects of apprehension are logically connected to each other in a thinking subject." But it does not show that the Categories necessarily apply to experience, "and without the objective reality of the Categories no foundation of experience is here possible."⁶⁷ This is to say that the reviewer believes that the applicability of the Categories to experience depends upon the determination of the objects of experience as actual, which Kant fails to supply us with the proper criteria for in the First Edition. However, we shall see that in the Second Edition he attempts to remedy this situation through the elevation of the role of space in regard to the determination of the actual as actual.

Interestingly, it was only four months before the publication of this review that Kant had finished writing the Metaphysical Foundations of the Natural Sciences. It was immediately prior to his giving the manuscript to the printer that he read the review and consequently altered the Metaphysical Foundations through an addition of a response to it in an extensive footnote to the Preface.⁶⁸

In answering the criticisms of the Ulrich review, Kant appears to admit that the Subjective Deduction is indeed somewhat problematic. However, he tells us that it is not essential to the Critical doctrine, and his philosophy is not dependent upon it:

...if it can be proved that the categories, which reason makes use of in all its cognition, can have no other employment whatever than that merely with reference to objects of experience...then the answer to the question how they make such forms of thought possible is indeed important enough for completing this deduction, where possible; but with reference to the main purpose of the system, mainly the determination of the boundary of pure reason, the answer to how is in no way necessary but is merely meritorious.⁶⁹

The problem of that, again, is the problem of the Objective Deduction. This is the problem of showing that the Categories must necessarily apply to experience. The problem of how is the problem of the Subjective Deduction, which attempts to explain how the Categories, in their relation to appearances, are possible.⁷⁰ The Subjective Deduction, as it appears in the First Edition, is dropped in the second.

Kant, in this crucial footnote, acknowledges the obscurity of the Deduction in the First Edition, and admits that "it is attributable to the usual fortune of the understanding in inquiry, the shortest way being commonly not the first

which it becomes aware of." Kant adds that he "shall take the earliest opportunity to make up this defect...", which is what he presumably attempts to do in the Deduction of 1787.

It must be noted that the more basic of the problems which the reviewer and Ulrich are said to revognize is not that of the mere obscurity of the Deduction. Rather, it would seem to be "the inability of the Deduction to establish the limitations of the whole faculty of pure reason and therefore of all metaphysics."⁷² Kant recognizes this as a serious criticism yet addresses himself to the problem of the obscurity of the Deduction. In examining the Deduction of the Second Edition, we will find that in spite of Kant's insistence to the contrary,⁷³ that the additions made here are not merely clarificatory. Some of them are ammendatory, and in fact address themselves, at least indirectly, to the criticism of his attempt, in the First Edition to establish the limits of human reason.

The first thing that is noticeable about the Deduction of 1787 is that it is not divided into two sections as is that of 1781. What is deleted is the provisional exposition, Section II, of the earlier exposition. In deleting this section Kant omitted the Subjective Deduction with its emphasis upon the imagination, synthesis and time. Of course all of these have a role in the later Deduction, but, as we shall see, the importance of this role is deminished.

At the very outset of the Deduction of 1787 Kant again tells us that in order for us to have a representation, its elements must be combined or synthesized.⁷⁴ The synthesis ,

again is not due to the nature of sensibility; but surprisingly, like all combination "is an act of the understanding."⁷⁵ In the Deduction of 1781 it is the imagination which is the "active faculty for the synthesis of this manifold."⁷⁶ Here, "only as having been combined by the understanding can anything be given to the faculty of representation."⁷⁷

In the Deduction of 1781 the pure imagination is "one of the fundamental faculties of the human soul."⁷⁸ In 1787 however, we find that it is no longer a separate 'faculty' but rather its functions are divided among the sensibility and the understanding: "Since all our knowledge is sensible, the imagination...belongs to sensibility. But inasmuch as its synthesis is an expression of spontaneity...this synthesis is a product of the understanding...."⁷⁹ In the later Deduction the imagination loses both its independence and its fundamentality. But with the suppression of the role of the imagination, both through the usurption of its role by sense and the understanding, as well as through the disappearance of the pervasively temporal Subjective Deduction of 1781, the role of the predominantly temporal synthesis is suppressed as well.

One of the reasons why Kant chose to issue an altered Second Edition of the Critique was so that he could reply, in a systematic manner, to those critics who accused him of being a Berkelian idealist. We shall deal fully with this criticism in the next chapter. But it is significant to note the effect which Vleeschauwer believes it to have had upon Kant's formulation of the role of the synthetic function of the imagination in the Second Edition:

Now, this synthesis is also the direct cause of the erroneous interpretation of those readers who saw in the Critique an exposition of subjective idealism. Their error was indeed excusable. To assert that synthesis determines the phenomenon surely makes the latter a construction of the knowing subject.... Synthesis, the psychological element which constitutes the psychologico-transcendental process of knowledge, seems to result in making the whole system of human knowledge both subjective and relative, since Kant presents it as the activity of a psychological subject whose purely logical transcendental nature has not yet been stressed.

According to Vleeschauwer, Kant, in order to protect himself against such misconceptions, "to avoid having recourse to synthesis he raised judgement to the rank of a fundamental objectifying operation...."⁸⁰

We know, of course, that synthesis is still an element in the Deduction of 1787. However, its nature as well as its role in Kant's epistemological framework is altered. But in order to fully exhibit this fact we must again turn to the text of the later Deduction.

The Transcendental Deduction of 1787 contains two arguments which are essential to the whole Critical enterprise. The first of these arguments is the Deduction proper (subsections 20 and 21), and the second attempts to establish the valid limits of the application of the human understanding to appearances (subsections 22 and 23). We shall deal with these arguments in the same order as they appear in the text.

Kant tells us, in the small subsection prefacing the Deduction proper, that

a judgement is nothing but the manner in which given modes of knowledge are brought to the objective unity of apperception. This is what is intended by the copula 'is'. It is employed to distinguish the objective unity of the given representations from the subjective.⁸¹

When appearances are united through the transcendental unity of apperception they constitute objects of knowledge: "Thus to say that 'The body is heavy' is not merely to state that the two representations have always been conjoined in my perception, however often that perception be repeated; what we are asserting is that they are in the object, no matter what the state of the subject may be."⁸² Kant is not saying here that 'This body is heavy' is an analytic judgement which is universally valid, but rather by virtue of the fact that it has been united through the transcendental unity of apperception, the relation which holds between the subject and the predicate will hold for any human perceiver who observes the object (assuming that the condition of the object has not changed).

Kant believes that the transcendental unity of apperception is necessary for the establishment of an objectively valid judgement. What he must prove however, is that appearances are necessarily subject to the Categories. This is what he attempts to do in subsections 20 and 21.

We are told there that the manifold given to sensible intuition can only be unified by the synthetic unity of apperception. The act of the understanding which unifies the manifold of appearances is the logical function of judgement.⁸³ Because the Categories are just this form of judgement "the manifold in a given intuition is necessarily subject to the categories."⁸⁴

The essence of Kant's argument here seems to be that because only the transcendental unity of apperception can give the necessary unity required by the manifold, the unity re-

quired by the manifold. The unity required by the manifold is the same as the unity given by the transcendental unity of apperception. Thus, because all appearances are subject to the transcendental unity of apperception they must be subject to the Categories as well. Kant is equating the function of the unity of apperception with that of the Categories and thereby acquires the right to claim that what holds in the case of the transcendental unity of apperception--that appearances are necessarily subject to it if they are to constitute knowledge--holds in the case of the Categories as well.⁸⁵

In the Deduction of 1781 the a priori conditions of human knowledge are sense (the ability to perceive that which is given in time) imagination (the ability to represent appearances in association with each other) and apperception (the ability to recognize similarities among appearances).⁸⁶ In 1787 however, no mention is made, in the Objective Deduction, of the function of the imagination. But apart from the question of what the elements of human knowledge are, the question of what constitutes objective human knowledge is most crucial.

Now that Kant has purported to have shown that all appearances are subject to the unity of the Categories we are prepared to understand what it is that he considers to be an object of knowledge. It is only if we know what an object of knowledge is for Kant, that we can comprehend what it is that serves as the meanings of propositions and judgements, and hence synthetic a priori propositions and judgements. What we

must know is what it is that the Categories are a necessary condition for, or to what do the Categories apply? To know what the Categories apply to is to know what constitutes knowledge for Kant, and hence what may serve as the meaning for synthetic a priori propositions and judgements.

The title of subsection 22 is The Category has no other Application in Knowledge than to Objects of Experience. The question that it immediately raises is, what is an object of experience? A mere thought, or an empty concept without a corresponding intuition is not knowledge. To think something and to know something are two different acts. We are interested in the latter.⁸⁷

To know something we must have a thought or concept as well as a corresponding intuition. But what sort of intuition? There are two kinds; pure and empirical. Space and time are the pure intuitions. They are forms of appearances and as such they determine knowledge, which is, in fact, nothing else than that which is given in empirical intuition "which is immediately represented, through sensation as actual in space and time."⁸⁸ That which is given in both space and time is that intuition which must correspond to a concept if we are to have knowledge.

It is "things in space and time"⁸⁹ that Kant is here concerned with. They, and they alone, constitute the perceptions, or empirical representations to which the Categories are applied so that we may regard them as cognitive. Thus, Kant tells us: "Our conclusion is therefore this: the categories as yielding knowledge of things, have no kind of application, save

only in regard to things which may be objects of possible experience."⁹⁰ Empirical intuitions, or those representations which are given in space and time are the proper correlates of the Categories. The Categories constitute knowledge only in so far as they have as their meanings such objects of possible experience.

The Categories, unlike space and time, need not apply to human intuitions. However, in extending our Categories beyond sensible human intuition, or the realm of what is spatial and temporal, as such "they are mere forms of thought, without objective reality."⁹¹ The Categories thus, have meaning or 'objective reality' only in so far as they relate to objects in human sensibility. That which is an object of human sensibility is so by virtue of its conformability to the forms of space and time as the conditions of sensible appearances. It is the conformability of an appearance to the forms of space and time which determines it as an object which may serve as a correlate to thought. It follows that the limits of human knowledge, because the Categories are limited in their valid application to sensible appearances, are the same as the limits placed upon human sensibility by space and time. We can know something if and only if it is a sensible appearance. It is a sensible appearance only if it can be given in both space and time.

Thus, the key to the determination of the limits of the proper application of the pure concepts of thought, which is the same as the determination of the limits of human knowledge, lies in the recognition of space and time as the forms of hu-

man appearance. That which can be given in both space and time is knowable, while that which cannot be given in both space and time, while it may be thinkable, is not knowable. Space and time determine the limits of the human understanding as a faculty of human knowledge. An object of knowledge must necessarily be a spatial and temporal object. The understanding, as a faculty of human knowledge, is restricted to these objects. Consequently only appearances in space and time can serve as objects of human knowledge.

Among the criticisms of the First Edition which Kant acknowledges in the Preface to the Metaphysical Foundations are the "doubts expressed...not against the table of the pure concepts of the understanding, but against the conclusions drawn therefrom as to the limitations of the whole faculty of human reason and therefore of all metaphysics."⁹² The deduction of 1781 does not explicitly determine what these limits ought to be. Tacitly, however, it would seem that in the First Edition, the understanding, as a faculty of knowledge, is limited by that which can be given to sense in time.⁹³ This is to say that it is at least implied, in the First Edition, that non-spatial objects, or objects which belong to inner sense alone, may be known.

In the Second Edition, however, Kant addresses himself directly to the question of the limits of human knowledge. In fact he devotes two subsections, (22 and 23), to the problem. According to Vleeschauwer in 1787:

...the Critical problem...becomes the problem of the limitation of reason to phenomena, a problem which had always haunted Kant's mind since the Traume. What can be

invoked in order to place this limitation on unshakable foundations? Apparently nothing but recognition that space and time are a priori forms of intuition. It immediately follows that all representations are knowledge of phenomena and that the categories have ~~no~~⁹⁴ other foundation but to determine a sensible content.

Kant, in order to properly limit reason, in 1787, requires that appearances given to the understanding conform to the a priori forms of intuition; space and time. Here, where Kant speaks of the limitation of the objects of possible experience,⁹⁵ he means that the understanding is limited in its applicability to appearances given in space and time.

In the Second Edition, it is not time alone, as the form of empirical intuition, which determines what can be given to thought. Here, space and time are conjoined. An appearance must conform to both forms of appearances if it is to be unified by the understanding and hence known. Kant could not be more explicit about this. He tells us that empirical intuition is "of that which is immediately represented, through sensation as actual in space and time."⁹⁶ When he tells us that "there can be no a priori, except of objects of possible experience,"⁹⁷ he means that a priori concepts and intuitions, constitute knowledge or are meaningful, only in so far as they relate to an intuition which is in both space and time.⁹⁸

Kant is putting space on equal footing with time here in so far as both are requisite for human knowledge. In the Deduction of 1781 only time was required. We know that for Kant, all appearances which are sp^tial are also temporal. However, not all appearances which are temporal are spatial.⁹⁹ Thus, some objects of inner sense, such as thoughts, are in

time, but not in space. In requiring space as well as time as a condition of appearances, Kant is acknowledging that those appearances which are only in time cannot be known, because they are not also spatial.

This added requirement that all appearances must be compatible with both space and time puts the form of space in a special position in regard to the determination of what is an object of knowledge (Gegenstand). To know that a particular object (Objekt) conforms to time is not sufficient to determine that the Categories necessarily apply to it. The object may conform to time alone, and therefore may not be an object for knowledge. However, if it is known to be compatible with the form of space it must necessarily be compatible with the form of time (as all things in space are in time as well), and therefore must be an object for knowledge. To recognize that an object is given under the form of space is sufficient to determine its knowability. Thus, it would appear that in the Second Edition, it is space rather than time, which for Kant is the prime determinant of objectivity.

Apart from the elevation of space to the position of the prime determinant of objectivity, Kant, here, also puts space in a position of greater importance in regard to its relation to time. It would seem that as a result of the requirement that all objects of knowledge be spatial as well as temporal Kant now espouses the view that all objects of inner sense must be spatialized; and even that time itself, if it is to be represented, must be represented in spatial terms:

Even time itself cannot be represented save in so far as we attend, in the drawing of a straight line (which has to serve as the outer figurative representation of time) merely to the act of the manifold whereby we determine inner sense. Motion as an act of the subject (not as a determination of an object), and therefore the synthesis of the manifold in space, first produces the concept of succession.¹⁰⁰

Kant appears to be saying here that if time is to be represented it must be represented in spatial terms, or that time itself must be organized in a spatial manner if it is to be represented.

Moreover, he also claims that objects which are in time, the objects of inner sense, must also indirectly be objects of outer sense, if they are to be known. All objects of inner sense must be arranged in a spatial order as well as a temporal order if they are to be objects of knowledge: "...for all inner perceptions we must derive the determination of lengths of time or of points of time from the changes which are exhibited to us in outer things, and that the determinations of inner sense have therefore to be arranged as appearances in time in precisely the same manner in which we arrange those of outer sense in space."¹⁰¹ The objects of inner sense must be arranged in both a spatial as well as a temporal order if they are to be known. There is no such doctrine in the Deduction of 1781. In 1787 however, space mediates between the understanding and intuition. Kant tells us: "But it is an even more noteworthy fact that in order to understand the possibility of things in conformity with the categories, and so to demonstrate the objective reality of the latter, we need not merely intuitions but in all cases outer intuitions."¹⁰²

Even Heidegger, the prime proponent of the central and primary import of time in the Critique, admits the significance of this statement. He says, of the above quotation: "Here appears the transcendental function of space, which unmistakeably opens up a new perspective for Kant. Space enters into pure schematism."¹⁰³

Kant's chapter on the schematism is very important in regard to the completion of the structure of his epistemology. He has shown us that an empirical manifold as well as pure thought is necessary for human knowledge. However, because the sensible and the transcendental are so different in nature that any conformability of one with the other would prima facie seem to be impossible. Kant therefore believes that some process of mediation is necessary to establish the compatibility of the understanding with appearances. This is the function of the transcendental schema, which is pure, and thus like the understanding, and is an intuition, and hence sensible. The transcendental schema is in a sense a pure temporal sketch of an appearance. As such it establishes a common ground between appearances and the understanding, so that appearances can be subsumed by the Categories.¹⁰⁴

The chapter on the schematism undoubtedly points up the import of time within the Critical architectonic. Unfortunately Kant did not revise the chapter on the Schematism in 1787, and thus, in the Second Edition, the role which space plays in the organization of objects in time, and of time itself, is not alluded to here. In the Second Edition, we have, in effect, a chapter which conforms to the Deduction of the

Deduction of the First Edition. We again have here, as in the Deduction of 1781, the doctrine of the prime and exclusive import of time as the determining condition of objectivity.¹⁰⁵ This, no doubt, is incompatible with some of the additions made in 1787. Unfortunately, the revisions of the schematism which Kant did choose to make were not made in the Schematism itself, and the latter was not altered to conform to these revisions. All that one can say in regard to this Kantian lapse is that it is difficult to disagree with Paton's criticism of the Schematism:

It must be added, however, that Kant is hampered throughout by his attempt to restrict the schemata to the form of time. This attempt is based on the view that space is the form of outer sense only, while time as the form of inner sense, is the ultimate condition, not merely of inner but also of outer intuition. If we are to make a satisfactory doctrine we shall have to work with both space and time (or perhaps space-time) and it is clear that Kant's own mind was steadily working in this direction...¹⁰⁶

Even Smith agrees with the main thrust of this objection:

It may be asked why Kant in this chapter so completely ignores space. No satisfactory answer seems to present itself. ...Kant's concentration on the temporal aspect of experience is exceedingly arbitrary, and results in certain unfortunate consequences.¹⁰⁷

In both editions time is the necessary condition for the subsumption of appearances under the concepts of the understanding. The difference between the First and Second Editions however, is that in the first time serves as the sufficient condition of objectivity, while in the second it is space which fulfills this very same function. No doubt Kant was not totally consistent in his elevation of the status of space in the Second Edition, as the doctrine of the Schematism would

seem to indicate. However, the renewed emphasis upon space and the spatial in the Principles, as found in the Second Edition, exhibits the strength and prevalence of Kant's affirmation of the role which space plays in the Second Edition.

Although I shall discuss the Principles (as well as the Schematism) in greater detail in the next chapter, because of their relation to the Categories it would be helpful to sketch here, in this chapter, the function of the Principles in regard to the Critical enterprise as a whole. In so doing, we shall take note of some of the issues, found in the Principles, which have a bearing upon the relation of space to Kant's epistemology. However, my main purpose here is to give the reader a basis for the transition to the next chapter rather than to here argue out all of the issues of the Principles which relate to my argument.

The most succinct characterization of the function which the Principles fulfill can be found in the small section which follows the Deduction. Kant says there that transcendental philosophy

must formulate by means of universal but sufficient marks the conditions under which objects can be given in harmony with the concepts. Otherwise the concepts would be void of all content, and therefore mere, ^{logical} forms, not pure concepts of the understanding.¹⁰⁸

In order for the Categories to apply to appearances they must contain a priori certain marks which the objects contain. It is the function of the Principles to enumerate what these marks or characteristics, which belong to appearances are. so as to explain the possibility of the application of the pure con-

cepts to such appearances.

These principles of the pure understanding are the most fundamental of all a priori judgements in that they are presupposed by all other synthetic a priori judgements. Without these Principles "appearances would never yield knowledge of an object corresponding to them."¹⁰⁹ They are the rules for the application of the schematized Categories to experience.¹¹⁰ Because of their fundamentality they cannot be proven by resort to other principles. However, Kant believes that the correct manner to attempt their proof is "from the subjective sources of the possibility of knowledge in general."¹¹¹ This, I believe, means that their proof lies in the fact that they cannot be shown to serve as a complete and exhaustive enumeration of the rules necessary for the establishment of the possibility of objective human knowledge. This is to say that their necessity is considered by Kant to be sufficiently proven if it is shown that knowledge of objects is impossible without them.

The Principles which establish the applicability of the Categories which belong to the groupings of 'Quantity' and 'Quality', are called by Kant mathematical because they are supposed to account for the possibility of mathematics. The Principles for the groups of 'Modality and 'Relation' are called dynamical because they are supposed to account for the possibility of physical dynamics.¹¹² These are not mathematical and physical principles, but in a sense they constitute elements of either science, but rather that they are presupposed by these sciences.¹¹³ For example, the first Mathema-

tical Principle, the Principle of the Axioms of Intuition, is that "All intuitions are extensive magnitudes."¹¹⁴ Here, Kant is telling us that without sensational complexity appearances could not become objects of knowledge. Appearances cannot be simple, they must be complex. As such the Categories of Quantity must apply to them. Because a complex contains a plurality of diverse elements it cannot be known without concepts of quantity. Thus, extension in appearances explains the necessary application of this group of Categories to appearances.

Moreover, it is only if appearances have this sort of complexity, or extension, that the science of geometry can apply to them.¹¹⁵ The pure science of spatial extension cannot apply to the perceptual universe if no extension can be found in the latter. It is in this sense that we have here a mathematical principle. So too, in this sense, we have in the Second Analogy a dynamical principle. Just as pure applied geometry would be impossible without an extensive universe so to dynamics would be impossible if there would be no causal nexus in the universe.¹¹⁶

Apart from the Refutation of Idealism and the General Note on the System of the Principles, which we shall discuss fully in the next chapter, there are a number of interesting changes of the First Edition of the Critique. Although most of these changes are of a clarifactory nature, some exhibit the continuation of Kant's emphasis upon space in the Second Edition.

At the very beginning of the Axioms of Intuition, Kant,

in 1787, adds a space which asserts that it is space and time, conjoined, which are the conditions of experience: Appearances, in their formal aspect, contain an intuition in space and time, one and all, a priori."¹¹⁷ To the Analogies of Experience, a new Principle is substituted for the one found in the First Edition which suggests that appearances are determined by the Categories in time alone.¹¹⁸ Furthermore, a new principle is added in 1787 in the Third Analogy: "All substances, in so far as they can be perceived to coexist in space, are in thoroughgoing reciprocity."¹¹⁹ The 1781 Principle, for which this is substituted, contains no mention of space. Here, however, it is the spatial realm to which this Principle, and hence the understanding is confined.

At the very beginning of the proof of the First Analogy in the Second Edition, a new paragraph is substituted for the first three sentences of the corresponding portion of the First Edition. The sentences of the First Edition which are replaced expressed the belief that time determines all appearances as existing.¹²⁰ The paragraph which replaces this statement does not express the same view. However, the view that it does express, though crucial, is far from unambiguous.

Kant does tell us, in this new beginning to this First Analogy, that because all appearances are in time, the time in which all appearances are remains. Time is abiding and permanent even though time itself cannot be perceived as permanent. Moreover, it is that "in which, all change of appearance has to be thought," and as such "remains and does not

change."¹²² But although it is permanent it is not the substratum of all appearances. It is a substratum, but only "as permanent form of intuition."¹²²

Because time cannot be perceived it cannot, of itself, be considered as substrate,¹²³ "consequently there must be found in objects of perception, that is, in appearances, the substratum which represents time in general; and all change and coexistence must, in being apprehended, be perceived in this substratum, and through relation of appearances to it." That which is the representational correlate of time is considered by Kant to be the permanent, or the substratum, by virtue of which all change and coexistence in appearances can be recognized. For Kant, "the substratum of all that is real, that is, of all that belongs to the existence of things, is substance."¹²⁴ However, he does not attempt to discern or discover here what substance is as the substratum of all that is real. He restricts himself, in proper Critical fashion, to the question of what substance in the field of appearance is. This is to say that Kant, in the First Analogy, does not attempt to establish the substratum of all that is real, but rather the substratum of all that is knowable, or of all that is real in the field of appearance.

The permanent in the field of appearance is that in relation to which all temporal relations among appearances are determined: "...the permanent, in relation to which alone all time relations of appearances can be determined, is the substance in the field of appearance, and as the substrate of all change remains ever the same."¹²⁵ This is in fact the

cognitive substance which is not only that which is real in appearance but is also that which allows time, as we know it, to be represented; it is the substratum of all time determination." Moreover, as such, it is of paramount import, since, according to Kant, "all existence, whether in past or in future time, can be determined solely in and by it."¹²⁶

Although the notion of substance is of crucial import, Kant, in the First Analogy, does not clearly explain what he means by it. We cannot but be aware of its importance both in its relation to time as well as as that which determines existence. Although, in the Second Edition, Kant does make some important additions to this analogy, the nature of substance still remains unclear here. Because he does not here tell us what this permanent in the field of appearance is, after reading the First Analogy, we are left with the nagging question of what is this representational correlate of time which determines all existence?

A hint as to the direction in which Kant's mind was probing the answer to this question can be found in a marginal note written by him in his own copy of the First Edition of the Critique. He says there of this Analogy: "Here the proof must be developed as to apply only to substances as phenomena of outer sense, and must therefore be drawn from space, with which its determinations exists at all times."¹²⁷ The argument in this Analogy, in the Second Edition, does not reflect the sense of this marginal note. Perhaps this is because Kant was unwilling to make some of the revisions which the marginal note suggests would be required. According to

both Paton and Smith, had Kant been willing to make the required revisions he would have to have rewritten not only the Analogies but the chapter on the schematism as well.¹²⁸ However, the sense of this marginal note is reflected in the Refutation of Idealism and other related passages, which are found primarily in the Second Edition. It is to this that we now turn.

NOTES

1. See CPR, A 50=B 74, p. 92.
2. See CPR, A 39=B 56, p. 80.
3. See CPR, A 59=B 84, p. 98.
4. Cf. Smith, Commentary, p. 169.
5. CPR, A 59=B 84, p. 98.
6. CPR, A 59=B 83, p. 98.
7. Cf. Alfred Tarski, "Truth and Proof", Scientific American, (June 1969), 63-64.
8. See CPR, A 62-63=B 87, p. 110.
9. See CPR, A 219=B 266 - A 222= B 269, pp. 239-40; A 232= B 285, p. 251; and A 243=B 301-302, p. 262.
10. CPR, A 62=B 87, p. 100.
11. The essence of Kant's argument here, is to be found in CPR, A 77=B 107, pp. 111-114.
12. See Paton, Kant's Metaphysics of Experience, Vol. I, pp. 293-302; and N.K. Smith, Commentary, pp. 177-196.
13. See CPR, A 68=B 93, p. 105; A 69=B 94, pp. 105-106; A 78= B 104, p. 112; and H.J. Paton, Kant's Metaphysics of Experience, Vol. I. pp. 213-214.
14. See CPR A 78-79=B 104, p. 112.
15. See H.J. Paton, Kant's Metaphysics of Experience, Vol. I, pp. 213-214.
16. Because Kant's example here is of a legal situation, rather than a moral one, it would seem proper to understand the ambiguous word 'Recht' in terms of its legal rather than its moral meaning. Thus we are concerned here with a 'legal question' rather than with a 'question of right', as Smith claims. Cf. KrV, A 84=B 116, p. 126 and CPR, p. 120.
17. See CPR, A 85=B 117, pp. 120-121.

18. CPR, A 86=B 119, pp. 121-122.
19. See CPR, A 88=B 120, p. 122.
20. CPR, A 90=B 123, p. 124.
21. CPR, A 96=B 126, p. 126.
22. See H.J. Paton, Kant's Metaphysics of Experience, Vol. I, p. 31.
23. See CPR, A xvi, p. 12.
24. CPR, A xvi-xvii, p. 12.
25. See H.J. Paton, Kant's Metaphysics of Experience, Vol I, pp. 350-353.
26. (Emphasis mine), CPR, A xvi, p. 12.
27. See Kant, Metaphysical Foundations, p. 11, fn. 8.
28. See CPR, A xvii, p. 12.
29. See CPR, A 78=B 103, p. 112.
30. See H.J. Paton, Kant's Metaphysics of Experience, Vol. I, p. 354.
31. CPR, A 98-99, p. 131.
32. By 'a priori representation', Kant here seems to mean 'a priori intuition'. The rest of the argument here would seem to be consistent with this interpretation.
33. See CPR, A 77=B 103, p. 111.
34. CPR, A 99, p. 131.
35. See CPR, A 102-103, p. 133.
36. See CPR, A 101-102, pp. 132-133.
37. CPR, A 103, p. 134.
38. CPR, A 104, p. 134.
39. CPR, A 105, p. 135.
40. See CPR, A 107, p. 136.
41. CPR, A 107, p. 136.
42. CPR, A 110, p. 138.

43. See CPR, A 110-111, p. 138.
44. See H.J. Paton, Kant's Metaphysics of Experience, Vol. I, p. 457.
45. See ibid., pp. 457-476.
46. CPR, A 115, p. 141.
47. See CPR, A 116-117, pp. 141-142.
48. See CPR, A 118, pp. 141-143.
49. See CPR, A 119, p. 143.
50. CPR, A 119, p. 143.
51. Ibid.
52. Ibid.
53. See CPR, A 120, p. 143.
54. See CPR, A 120, p. 144.
55. See CPR, A 121-122, pp. 144-145.
56. CPR, A 123, p. 145.
57. CPR, A 123-124, p. 146.
58. See CPR, A 214, p. 146.
59. CPR, A 99, p. 132.
60. CPR, A 99, p. 131.
61. CPR, A 115, p. 141.
62. CPR, A 34=B 50, p. 77.
63. N.K. Smith, Commentary, p. 239.
64. See Martin Heidegger, Kant and the Problem of Metaphysics, J.S. Churchill trans. (Bloomington: Indiana Univ. Press, 1962), pp. 188-193.
65. G. Martin, Kant's Metaphysics and Theory of Science, p. 151.
66. See I. Kant, Metaphysical Foundations, p. 11, fn. 8.
67. (My translation), Allgemeine Literature-Zeitung, (December 13, 1785), 299.
68. See H.J. de Vleeschauwer, La Déduction, Vol. II, p. 538.

69. I. Kant, Metaphysical Foundations, p. 11, fn. 8.
70. Cf. Vleeschauwer, La Déduction, Vol. II, p. 540.
71. I. Kant, Metaphysical Foundations, p. 11, fn. 8.
72. Ibid.
73. See CPR, B xxxviii, p. 34; and B xlii, p. 35.
74. See CPR, B 129-130, p. 137.
75. CPR, B 130, p. 151.
76. CPR, A 129, p. 144.
77. CPR, B 130, p. 152; and B 151, pp. 164-165.
78. CPR, A 124, p. 146.
79. CPR, B 152, p. 165.
80. H.J. de Vleeschauwer, The Development of Kantian Thought, A.R.C. Duncan trans. (London: Thomas Nelson and Sons Ltd., 1962), p. 95.
81. CPR, B 141-142, p. 159.
82. CPR, B 142, p. 159.
83. See CPR, B 143, p. 160.
84. CPR, B 143, p. 160.
85. See CPR, p. 143, pp. 160-161.
86. See CPR, A 95-111, pp. 129-138; and CPR, A 115-118, pp. 141-142.
87. See CPR, B 146, pp. 161-162.
88. CPR, B 147, p. 161.
89. Ibid.
90. CPR, B 147-148, p. 162.
91. CPR, B 148, p. 162.
92. I. Kant, Metaphysical Foundations, p. 11, fn. 8.
93. See CPR, A 115-118, pp. 141-142.
94. Vleeschauwer, The Development of Kantian Thought, pp. 98-99.

95. See CPR, B 147-148, p. 162.
96. CPR, B 147, p. 162.
97. CPR, B 166, p. 174.
98. See H.J. Paton, Kant's Metaphysics of Experience, Vol. I, pp. 539-540.
99. See CPR, A 34=B 50-51, p. 70.
100. CPR, B 154-155, p. 167.
101. CPR, B156, p. 167.
102. CPR, B 291, p. 254.
103. Martin Heidegger, Kant and the Problem of Metaphysics, pp. 204-205.
104. See CPR, A 137=B 179, pp. 180-182.
105. See CPR, A 139-140=B 179, p. 182.
106. H.J. Paton, Kant's Metaphysics of Experience, Vol. II, p. 78.
107. N.K. Smith, Commentary, p. 341.
108. CPR, A 176=B 175, p. 176.
109. CPR, A 159=B 198, p. 195.
110. See H.J. Paton, Kant's Metaphysics of Experience, Vol. II, p. 82.
111. CPR, A 149=B 188, p. 188.
112. CPR, A 160=B 199, p. 196.
113. See H.J. Paton, Kant's Metaphysics of Experience, Vol. II, p. 99.
114. CPR, B 202, p. 197.
115. See CPR, A 165=B 206 - A 166=B 207, pp. 200-201.
116. See CPR, A 190-211=B 233-256, pp. 218-233.
117. CPR, B 202, pp. 197-198.
118. See CPR, A 176-177, p. 208, and cf. B 218, p. 208.
119. CPR, B 256, p. 233.

- 120. See CPR, A 182, p. 213.
- 121. CPR, B 222-225, p. 213.
- 122. CPR, B 224, p. 213.
- 123. See H.J. Paton, Kant's Metaphysics of Experience, Vol. II, p. 190.
- 124. CPR, B 225, p. 213.
- 125. Ibid.
- 126. CPR, A 185=B 228, p. 215.
- 127. N.K. Smith, Commentary, p. 361.
- 128. See Paton, Kant's Metaphysics of Experience, Vol. II, pp. 199-200; and Smith, Commentary, p. 361.

CHAPTER V
KANT'S REFUTATIONS OF IDEALISM AND THE
EXPANDED ROLE OF SPACE IN THE SEC-
OND EDITION OF THE CRITIQUE

By January of 1782 Kant was impatiently awaiting the public's first reaction to his Critique. Up until this time he heard only silence and was irritated by the lack of any indication of public acceptance of his work.¹ This silence was finally broken in an anonymous review which is now recognized as a product of a joint effort of Christian Garve and J.G.H. Feder.² This review, which appeared in the Göttingische gelehrte Anzeigen of January 19, 1782; was originally written by Garve in a manner not very critical of the Critique. Feder, the editor of the journal, edited the work so that it would reflect his own negative view regarding the Critique.³

But even so, Kant's reaction to the review was surprisingly vitriolic in tone. In the Appendix to the Prolegomena, Kant, in one of the few places in which he publicly replies to a criticism of his Critique, lashes out against not only the review but the reviewer as well.⁴ The anger with which Kant responded to the Garve-Feder review is quite notable in view of his well known stable and regular temperament.⁵

His reply is set aside in a sub-section of the Appendix

to the Prolegomena. This subsection is entitled: "A Specimen of a Judgement of the Critique Prior to its Examination". As this title would suggest, apart from a number of replies directed at specific criticisms found in the review, Kant here gives us an argument of a generally ad hominem sort. He says of the reviewer:

It is either impatience at thinking out a lengthy work, or vexation at a threatened reform of a science in which he believed he had brought everything to perfection long ago, or, what I am reluctant to suspect, real narrow-mindedness that prevents him ever carrying his thoughts beyond his school metaphysics. In short, he passes impatiently in review a long series of propositions, of which without knowing the premises, one can understand nothing, intersperses here and there his censure, the reason of which the reader understands just as little as the propositions against which it is directed...⁶

Moreover, Kant goes on to tell us that after reading the review, it seems to him that the reviewer is like:

...one who having never seen or heard of geometry, having found a Euclid and coming across various figures in turning over its leaves, were to say, in being asked his opinion of it: "The work is a textbook of drawing; the author introduces peculiar terminology, in order to give dark, incomprehensible directions, which in the end teach nothing more than what everyone can in effect by a fair natural accuracy of eye, etc."⁷

There are other passages in which the intensity of Kant's emotional reaction to the review is expressed here.⁸ The question remains however, as to what it was that Kant was reacting against. That is, what were the criticisms of his doctrine which were contained in the review?

The Garve-Feder review views the Critique of 1781 as a system of idealism which "embraces spirit and matter in a similar fashion," and "which transforms the worlds and self into mere representations."⁹ Kant thus stands accused of being

a subjective idealist. For him, according to the review, the distinction between the subject and object, and that between the self and things collapses. All is reduced to representations; a mode of cognition apart from which there is no self, spirit, matter, or world. This represents the general thrust of the review. Kant's alleged sin is of being a subjective idealist. But what is wrong with this apart from the fact that this kind of idealist, according to the reviewer, turns all to mere representations? The reviewer does in fact represent to us a number of aspects of such an idealistic position which are endemic to Kant's Critical philosophy, according to the reviewer. These stand as separate criticisms but are related to each other in that they are symptomatic of the alleged Kantian subjective idealism. Thus, apart from the general characterization of the Kantian philosophy by the reviewer as one of general idealism we find a number of specific criticisms of the Kantian system which we will now examine separately.

According to the reviewer, for Kant, the understanding creates objects out of those representations which are bound up with space and time.¹⁰ Thus, it is claimed, that for Kant, space and time, which are mere "subjective principles of our power of representation,"¹¹ serve to aid the understanding in creating objects. In the review it is emphasized that these objects are creations of the mind, and it is inferred that the fact that they are merely products of the mind is due to Kant's establishment of space and time as subjective.

It is difficult to determine which part of the text of the Critique the reviewer has in mind here. This comparison of Kant to Berkeley is far from accurate. Erdmann tells us that all that Kant and Berkeley have in common is the characterization of being idealists.¹² Yet, this comparison of Kant with Berkeley caused Kant great consternation.

Moreover, although the reviewer claims that for Kant the understanding creates out of representations which are bound up with space and time, he ignores the fact that for Kant representations are first given to us,¹³ and then synthesized by the understanding through concepts.¹⁴ This is to say that sensible intuitions, for Kant, are first passively accepted by sensibility and then connected through the understanding. This represents a process which is quite other than the spontaneous creation of objects of knowledge, which the reviewer would have us believe is an integral element of the Kantian philosophy.

Garve and Feder claim that according to the Kantian system, experiences, as opposed to imaginary ideas and dreams, are distinguishable only by virtue of the fact that the former are bound up with the Categories while the latter are not. They claim that this mode of distinguishing between real appearance and mere illusion is insufficient, and that in order to properly distinguish between the two "some distinguishing mark in the representation itself must be grasped."¹⁵ We are told that it is only by virtue of such a mark, or marks, that outer appearances in space and time, can be distinguished from

visions, dreams, and fantasies.

Here the critic argues that the Kantian epistemology, as found in the Critique, even in principle, does not suffice to distinguish between an objective experience and a mere dream or phantasm. Although Kant, in his own mind, as we shall see,¹⁶ viewed this criticism together with the one we have just discussed as a unit, this criticism differs from the other in one very significant respect. The former criticism, in so far as it sees Kant and Berkeley as similar types of idealists has no firm basis in the Kantian text. In the case of the criticism which accuses Kant of being unable to distinguish between the real and the imaginary, the reviewer takes note of one of the most fundamental of the problems of the First Edition.

We have seen in the last chapter that in the Deduction of 1781 only time is the universal sensible condition for objective knowledge. There, time alone is required in order for the Categories to grant us knowledge, and the Categories may apply, at least in principle, to objects which are in time alone.¹⁷ There are some exclusive objects of inner sense which Kant recognizes as objects of knowledge. These, in the First Edition, might include our knowledge of ourselves as we appear to ourselves.¹⁸ Other appearances of inner sense, such as dreams, although Kant does not explicitly say so, should not constitute objective knowledge for him. Yet, both the appearance of the phenomenal self as well as the appearance of a dream are in time. Both thus fulfill one of the prime con-

ditions necessary for compatibility with the Categories, and thus for qualifying for objects of knowledge. Of the two examples, one may be considered as objective, while the other, the dream, usually is not, but how are we to distinguish between them in Kantian terms?

Kant does not answer this question for us in the First Edition. He tells us that objective experiences conform to the Categories while imaginary ones do not, but gives no effective mode of distinguishing between that which conforms in this manner and that which does not. Both types of appearances are in time, so time alone is useless in helping him distinguish between these different types of appearances.

It is because this problem of objectivity or the problem of what constitutes an actual experience, is so fundamental to the Critique that this criticism effectively casts strong doubt upon Kant's entire undertaking. In the First Edition we have no way of knowing whether an object given to appearance is real or imaginary. Thus, if any of the criticisms of the Garve-Feder review suffices, due to its incisiveness, to force a serious philosophical reply on Kant's part, I believe that it must be this. Moreover, I also believe that the revisions in the Second Edition, which I shall examine, when viewed as a unit, constitute an effective means on Kant's part of counteracting this criticism.

One must note that the reviewer also criticises Kant for establishing the determination of the self through the permanent, or substance. It is argued that the determination of the self could be accomplished internally, among a series

of representations without reliance upon that which is permanent as an external source of determination. A series of representations may, it is argued, determine each other "through carrying over their thoughts in the same way as motion is communicated among a series of bodies."¹⁹

In this manner, it is argued, that the appearance of the unified self could be determined of itself without recourse to external appearances. The inference is that if we cannot directly know much of ourselves, what can we know of outer appearances to which we are less intimately related? Thus, Kant's idealism, according to the reviewer, is a product of his belief in the dependence of the determination of the self upon representations which are given to the self. It is thought by him that if, for him, the self could be determined independently of that which it is conscious of, then the true nature of outer things, as separate from the self, could be clearly understood, and idealism would thus be avoided.²⁰

The reviewer appears to argue here that because Kant, apparently in the First Analogy,²¹ bases the determination of the self in time upon that which appears in space, knowledge of the self is dependent upon a mere representation. It is thought by the reviewer that if knowledge of the self could be determined through its own representations then its dependence upon other appearances for its determination would be unnecessary. This would establish our knowledge of ourselves independently of the representations which appear to us. It is thought that this mode of determining the self is more immediate than the Kantian mode, and thus gives us a

knowledge of the self which is based upon a firmer foundation.

Yet another of the specific criticisms of the Kantian Critique by the Garve-Feder review involves the question of the recognition of the actual as such. According to the reviewer, the ordinary human understanding establishes the most stable and resistant experiences, or appearances, of outer sense as the foundation for the appropriate employment of his most basic principles. Kant however, we are told, fuses such outer experiences with those of inner experience. This is said to lead to idealism; which limits the assistance which stable outer experience can lend to inner experience.²²

Here, the reviewer tells us that it is outer experiences which are more stable than those of inner sense. This seems contrary to the point of view expressed in the criticism just discussed. But whatever the status of the compatibility of the two criticisms, it is claimed that because the inner-outer distinction is not properly drawn these stable outer experiences, which we count as real, cannot be recognized as outer and thus as real. We are told that Kant does this in so far as he gives us, among the pure concepts which belong to inner experience; the "categories of substance and reality which properly belong to the outer realm alone."²³

The critic here cites an example of the alleged Kantian confusion of the outer with the inner. The claim here is that substance and reality both belong to objects of outer sense, and that Kant fails to properly recognize this in that

he places their concepts among the objects of inner sense. There seems at first to be a confusion here on the reviewers part between an object of experience and its concept. Kant, in speaking of the Categories, is of course speaking of concepts, which unlike tables and chairs, are not objects of outer sense. But the meaning of this entire criticism becomes more clear when we see that Kant is here in fact accused not merely of allowing inner sense to contain concepts of things belonging to outer sense but rather of not allowing for knowledge of objects, which, according to the reviewer, are truly outer.

Kant's error is said to reside in his refusal to allow the Categories to apply validly to an external transcendent.²⁴ In restricting the applicability of the Categories to that which can merely be represented or thought he is said to needlessly restrict the realm of that which is known as actual.

Kant here, is again being accused of being an idealist of sorts in that what he considers outer experience is not truly outer in that it is not known to have existence independently of inner experience. Because for Kant, according to the reviewer, all that the Categories apply to are representations, that which is actual and substantial independent of experience cannot be known by the Kantian subject. The reviewer thus sees the Kantian mode of distinguishing between the 'inner' and the 'outer' as merely a differentiation between two different aspects of inner experience, neither of which contain that which is actual or substantial.

In essence, the Garve-Feder review accuses Kant of five

basic errors; one general error and four specific determinations thereof, which are themselves also errors. The general error is that of being a subjective idealist, or of reducing the self and the world to appearances, which are modifications of the self. The specific Kantian errors which appear as products of this generally idealistic attitude are:

1. Kant, like Berkeley, by idealizing space and time, reduces all actuality to mere representation.
2. Within his system, Kant cannot properly distinguish between imaginings, dreams, and phantasms of the mind, on the one hand, and that which is actual on the other.
3. Kant's inability to establish the self independently of its representations leads him to put the determination of the self upon a shaky foundation.
4. The Kantian distinction between inner and outer sense is merely a distinction between two modes of inner sense. Because all that is knowable, according to Kant, resides within this realm, he effectively precludes the subject from knowing that which is truly actual and truly outer; an external transcendent, which according to the reviewer, is the true realm within which actual objects reside.

Integral to the charges of the Garve-Feder review is the doubt of whether Kant, as an idealist, that is as one who views the world as a compendium of representations, can account for the actual objective world which common sense tells us is out there, and which ordinary experience seems somehow to be in communion with. The reviewer is of course in places vague, and at times does not get directly to the crux of the serious difficulties with the First Edition of the Critique, but he does raise a serious issue, no doubt an issue which Kant, believing his philosophy to be different from Berkeley's, earnestly attempted to resolve. This is the question of how can an idealist account for the universe, which we believe to be act-

ual, merely in terms of representations?

Kant's epistemology, even in the First Edition, is radically different from Berkeley's, his emphasis upon the necessity of a priori representations for knowledge exhibits this. But the question remains whether his mode of idealism can succeed in explaining how objective knowledge is possible. I do not pretend to be able to answer this question for Kant here, but I do believe that Kant's attempt to resolve this problem differs in the two editions of the Critique, and moreover, that his new mode of dealing with this problem, in the Second Edition, consists of his revising the Critical doctrine so as to deal with the kinds of problems raised by the Garve-Feder review.

Kant's most immediate response to the Garve-Feder review and the criticisms contained therein is to be found in the Prolegomena. We have already seen the nature of Kant's emotional reaction, and there is little doubt as to its impact upon him personally. More significant, of course, for our purposes, is its intellectual impact upon his philosophy. Thus, the questions to which we must attend are: What alterations, if any, did Kant make in his philosophy in order to cope with these criticisms? What is the import of these alterations with regard to his epistemology taken as a whole? What is the import of these alterations with regard to the role which space plays within the context of the Second Edition of the Critique?

One cannot avoid adding that the problem of imputing historical causes and explanations is an extremely thorny

one. The problem which we face here is compounded by the fact that Kant rarely discusses specific criticisms of his doctrines, and he even more rarely does he admit of making any changes therein as a result of any such criticisms. Recognizing this fact, we shall examine alterations made in the Second Edition of the Critique which are eligible as possible replies to the Garve-Feder review. The review will thus be viewed as a plausible source of reasons for such changes, or as a plausible explanatory ground for such alterations. It is not necessary for a stronger case to be made here, for all the inclusion of the review is purported to accomplish here is to show that the changes which Kant wrought in the Second Edition of the Critique with regard to space, may be viewed, at least in part, as a product of his need to reply to his critics. This is to say that there is a historically credible explanation of such changes in that they may be viewed, at least in part, as a product of his need to reply to his critics, and that these alterations make sense when viewed within the context of a serious and systematic attempt, on Kant's part, to deal with a number of problems which his contemporaries found with his work, and that such alterations need not merely constitute clarifications for the confused reader unable to grapple with Kant's difficult mode of exposition. Rather, these alterations may be seen as clarifications of the exposition which are purported to dispell what Kant considered to be misunderstandings of his doctrine which led to criticisms of his philosophy. Also, some of

these changes, it will be seen, can plausibly be seen to be doctrinal changes, which are more than mere clarificatory changes.

Apart from the ad hominem arguments found in the Appendix to the Prolegomena, we also find there Kant's only direct and specific reply to the Garve-Feder review. In his reply, Kant focuses his attention on the charge that like Berkeley, he principally builds his system upon the notions of space and time as mere modifications of the mind. At first glance it seems quite strange that of all of the changes of the review he would choose to single this one out as worthy of rebuttal. But this strangeness vanishes if Kant's understanding, or misunderstanding, of philosophical idealism is exhibited. He tells us, again in the Appendix, that as opposed to his own form of idealism

The dictum of all genuine idealists, from the Eleatic school to Bishop Berkeley, is contained in this formula: "All knowledge through the senses and experience is nothing but sheer illusion, and only in the ideas of the pure understanding is there truth."²⁵

Kant tells us that in his own philosophy, the contrary principle; that the truth is found in experience alone and that pure understanding and reason is nothing but sheer illusion, dominates.²⁶ He does however, point out that this criticism of his philosophy, in the review misrepresents Berkeley's idealism in that the latter does not even consider time, let alone as a fundamental principle. Moreover, Kant distinguishes his own theory of space and time from that of Berkeley by virtue of the fact that for himself, space (and also time), "is in us as a pure form of sensibility before all perception

and experience." Berkeley, on the other hand, according to Kant, "regarded space as a mere empirical representation."²⁷

Kant appears to argue here that because for him, space and time are a priori forms of sensibility, rather than turning the universe into mere illusion, his philosophy of space and time guarantees the objectivity of our knowledge of our universe. Because for Berkeley, space and time were not a priori conditions of knowledge, knowledge need not conform to such pure forms, therefore, on Kantian grounds, it lacked one of the basic prerequisites for objectivity, and thus could not be distinguished from illusion.

It becomes clear here, why Kant, as we shall see, tends to treat the first two of the specific criticisms of the Garve-Feder review as one. According to Kant, Berkeley and all other non-Critical idealists reduce all actuality to mere illusion. Thus, to claim that is in the above essential respect similar to Berkeley's is to claim that Kant's doctrine is unable to effectively distinguish between objective knowledge and illusion.

Kant adds, in answer to the general charge of being a subjective idealist, or of being one who chooses to reduce all reality to subjective appearance, that his establishment of space and time as fundamental principles underlying his philosophy leads to the subversion of empirically subjectivistic views of the universe. It is because of his imputation of ideality to space and time, Kant maintains, that "all a priori knowledge, even that of geometry, receives objective reality."²⁸ Thus, it is for the very reason that space and time

are subjective forms of appearance, that the sciences have applicability to appearances and thus have what Kant calls 'objectiver reality'. The objectivity of knowledge, according to Kant, can only be accounted for, for Kant, if space and time are subjective. Kant tells us that as opposed to the 'dogmatic' idealism of Berkeley and the 'skeptical' idealism of Descartes, he is a Critical idealist.²⁹ His form of idealism grants objective reality to knowledge, rather than degrading it to subjective illusion.

Again, in the Remarks at the end of Section 13 of the Prolegomena, Kant also distinguishes his own position from that of Berkeley and other idealists, and defends himself against the charge of subjective idealism. Moreover, these Remarks appear to serve as replies to the Criticisms of the Garve-Feder review. Apparently in answer to the charge that he is a subjective idealist, Kant asks: "I should like to know what my assertions must be in order to avoid all idealism." Even more specifically, he tells us that "we at once dismiss an easily foreseen but futile objection, 'that by admitting the ideality of space and time the whole sensible world is turned into a mere sham.'"³⁰ The Garve-Feder review does of course disparagingly accuse Kant of being a subjective idealist. Also, as we have seen, it does criticise him for representing space and time as mere modifications of the mind, and thus as viewing objects as mere products of the understanding.³¹ Thus, there is some plausibility in the view that these Remarks may be seen as replies to the Garve-Feder review. But to show this more fully, this section of the text

must be examined in greater detail.

Section 13 of the Prolegomena is purported to combat "those who cannot yet rid themselves of the notion that space and time are actual qualities inherent in things themselves."³² But Kant's argument against this particular view concerning the epistemological status of space and time does not concern us here as much as does his defense of his own theory. The Remarks which accompany this section constitute such a defense.

The first Remark is geared to showing that space and time, because they are subjective forms of our appearances, guarantee the 'objective reality' of the pure sciences. Kant uses pure geometry, or the pure science of space, as an example which exhibits the justification of this view. It would seem that this use of geometry here is motivated by the belief that in geometry the relation between space as a subjective form of appearance, and the known world as appearance, can most easily be discerned. Kant argues here that it is only if space is understood as the subjective form of appearances of outer sense, or as the formal framework of the spatial characteristics in appearance, that geometry can apply to appearances.³³

Because, "the space of the geometer is exactly the form of sensuous intuition which we find a priori in us, and contains the ground of the possibility of all external appearances....,"³⁴ it follows that those relations of pure geometry which hold of the pure intuitions of space must also hold of all appearances which are thereby conditioned. Space, as

the pure form of all outer appearances, contains within it the parameters of the relations of outer appearances. Because pure geometry deals with space, as the form of outer appearances, in ascribing characteristics to space it also ascribes these characteristics to the appearances which must conform to this space.

Kant argues that if space would not be the subjective form of appearance it could not be known to apply to appearances. On the other hand, space as the subjective form of appearance, can only be known to apply to appearances alone. Thus, things-in-themselves, cannot, in so far as we know, be spatially determined in conformity with our pure intuitions of space. It follows that pure geometry, as applying to appearances, for Kant, would be impossible if either space were not a subjective form or if it applied to things-in-themselves. If space were not the subjective form of appearances which geometry deals with then geometry would not necessarily apply to appearances, as such its applicability need not extend to things-in-themselves, nor need geometry apply to such entities. Here, for Kant, the objective validity, or necessary applicability, of certain geometrical notions to appearance, is a product of the belief that space is the subjective form of appearance which applies, in so far as we know, to appearance alone.

In the second Remark Kant distinguishes between his own form of idealism and that of Berkeley.³⁵ He tells us that

Idealism consists in the assertion that there are none but thinking beings, all other things which we think are perceived in intuition, being nothing but repre-

sentations in the thinking beings, to which no object external to them in fact corresponds.

According to Kant, for the idealist, all appearances are merely objects of inner sense which have no empirical spatial correlates in outer sense. For these idealists, according to Kant, "all bodies together with this space in which they are, must be considered nothing but mere representations in us and exist nowhere but in our thoughts."³⁶ Because these objects, and space, for the idealist, are merely internal they exist only as thoughts, or internal representations, which are not objective.

Kant's own philosophy, on the contrary, asserts that non-illusory objects exist outside of us, or in outer sense: "I, on the contrary, say that things as objects of our senses existing outside us are given, but we know nothing of what they may be in themselves, knowing only their appearances, that is the representations which they cause in us by effecting our senses."³⁷ Appearances, as objects of outer sense, are appearances, of things which are unknown to us. These appearances constitute objects which exist outside of us or in space. Moreover, the 'bodies' which they are appearances of, even though we have no knowledge of them according to Kant, are held by him to be at least as actual as the appearances.

Thus, Kant asserts, as opposed to the idealist, that real things exist outside us. Apart from our subjective representations. 'Outside us' is an ambiguous locution for Kant.³⁸ Yet, in both of its meanings, things which are outside us are actual. Both things as appearances in outer sense and things

as they are in themselves, exist, for Kant, outside of us or apart from the objects of inner sense.

Here Kant asserts that for him both objects in outer sense as well as things-in-themselves, are actual. Thus, in answer to the fourth specific criticism of the Garve-Feder review Kant is telling us that appearances of objects in space, for him, are not mere thoughts which have existence in our minds, or in inner sense. Objects in space as opposed to mere thoughts have as their ground the thing-in-itself, which has actual existence independent of the mind and which is nevertheless unknowable.

What is also of significance here is that Kant distinguishes his position from that of the idealist by virtue of the distinction between inner and outer sense. Because, for Kant, there are things which exist for outer sense as objects of our senses, all representations do not constitute a subjective play of our minds. It is because these things exist in outer sense, and thus in space, that they exist for us as objects. Here, the determining characteristic of objects of our senses, which are not merely representations in us, but appearances of things-in-themselves, is that they are in space.³⁹ In the third Remark Kant again contests the charge that his philosophy lacks the means of distinguishing between truth and illusion, and that this flaw is a product of his consideration of space and time as ideal, which turns all to illusion. Both of these criticisms, as we have seen, are found in the Garve-Feder review which accuses Kant of being a Berkeleian idealist and of reducing the external world to illusion. Both criticisms are

related in so far as they questions Kant's ability, as an idealist, to account for an objective, as opposed to an illusory, universe. Kant's unitary reply is aimed at both criticisms at once, and deals with them as one.⁴⁰

Kant, unlike the Leibnizians, does not distinguish the reality of an appearance by virtue of its relative clarity or confusedness. For him the distinction "is a genetic one of the origins of knowledge itself."⁴¹ Both truth and appearance are given to us as appearances. Whether an appearance which is given is an appearance of a thing-in-itself or is a mere imagining of our mind it must be determined through a judgment of the understanding. These appearances themselves contain no marks which indicate their reality or illusoryness:

... the difference between truth and dreaming is not ascertained by the nature of the representations which are referred to objects (for they are the same in both cases), but only the connection according to those rules which determine the coherence of the representations in the concept of an object, and by ascertaining whether they can subsist in appearances or not.⁴²

Presumably, those rules which determine "the coherence of the representation" are the Categories, which thus determine the objectivity of an experience. We have already seen that for Kant, the objectivity of an experience is contingent upon its compatibility with the Categories.⁴³ The critic here seems to understand this. Yet, he is not satisfied, and justifiably so. The problem still remains, how are those objects which are compatible with the Categories distinguished from those which are not?

Kant, here, clearly attempts to resolve this problem by establishing conditions which are purported to suffice to

indicate the compatibility of an object with the Categories, and hence its reality. He says:

...if I consider all the representations of the senses, together with their form, space and time, to be a mere form of sensibility which is not to be met with in objects out of it, and I make use of these representations in reference to possible experience only, there is nothing in my regarding them as appearances that can lead me astray or cause illusion. For all that they can correctly cohere according to the rules of experience.⁴⁵

Kant implies here that appearances that are in both space and time, and which are experienceable are always compatible with the Categories.

Here, in reaction to the Garve-Feder review, Kant reveals for the first time the necessity of space as a condition for all objective knowledge. No doubt, he does say here that in order for an appearance to constitute an object of knowledge it must not only be conditioned by space and time but must also refer to a possible experience. In the Second Edition of the Critique the role of space and time is made stronger in regard to the determination of an appearances compatibility with the Categories.⁴⁶ Here, on the other hand, being conditioned by space and time, and being experienceable are treated as two distinguishable though necessary conditions for the determination of the objectivity of an appearance.

Yet, even though Kant did not go as far in his expansion of the role of space in experience as he did in the Second Edition, the doctrine here does represent an advance in relation to the First Edition. There, as we have seen, space is not considered to be a condition necessary for all object-

ive experience.⁴⁸ The only form of appearance that was there established as prerequisite for all objective knowledge was time. Here however, the conjunction of space and time as conditions of objective knowledge is apparent. In the above quotation Kant speaks of space and time as a unitary "form of intuition."⁴⁸ This locution is not consistently carried over to the Second Edition of the Critique. However, it does here indicate the elevation of space to a position at least equal to that of time, for purposes of distinguishing objective knowledge from mere subjective illusion.

These three Remarks, added to Section 13 of the Prolegomena, whether or not they are taken as a response to the Garve-Feder review, preview the strengthening of the role of space, as it takes place in the Second Edition. In the first Remark, geometry, the science of space, is taken as the exemplar of the objectivity of the pure sciences. This sort of emphasis upon the science of space is, as we have seen, taken up primarily in the Second Edition version of the Aesthetic.⁴⁹

In the second Remark it is implied by Kant that the conditioning of an object by the form of outer sense is what determines it as actual. This I have argued, is one of the most crucial doctrines presented in the Transcendental Deduction of 1787.⁵⁰ The third Remark exhibits the conjunction of space and time as a condition necessary for objective human knowledge. This too, I have argued, is a significant addition to the Transcendental Deduction, as found in the Second Edition.⁵¹ These Remarks thus exhibit, although not in its

most mature form, some of the aspects of Kant's elevation of space and the spatial as found in the Critique of 1787.

If these Remarks are taken as replies to the charges of subjective idealism of the Garve-Feder review they represent elements of a unified effort on Kant's part to combat such charges through the expansion of his doctrine of space and the spatial. The objectivity of the pure sciences is exemplified by the a prioricity of the spatial science of geometry. The charge that the world is relegated to one of subjective appearance is combated through the strict distinction between inner and outer sense and the relegation of subjective appearance to the realm of the former and the establishment of objective knowledge within the realm of the latter. Moreover, true knowledge is distinguished from mere illusion through the elevation of space to a position of equality with time.

Kant's doctrine here, in these Remarks, appears to establish space as the prime determinant of objectivity. His doctrine in other parts of the Prolegomena do not consistently appear to reflect this view. He does not quite appear ready, at this point to adopt the more phenomenalist position of the Critique of 1787. Here, in the Prolegomena, Kant does indeed, in discussing space and time, identify "that which fills both" as "the object of sensation."⁵² He also tells us that "sensation, which denotes the real in intuitions...is not an intuition which contains either space or time though it places the object corresponding to it in both."⁵³ Yet, in other

places, space is taken as the determinant of objectivity, although only of that which is in outer experience. Room is left by Kant for the objectivity of that which is in inner sense alone:

Empirically outside me is that which is intuited in space; and space, together with all of the appearances it contains belongs to the representations whose connection, according to the laws of experience, proves their objective truth, just as the connection of the appearances in space, in the same manner as by means of the inner experiences I am conscious of the existence of my soul in time...⁵⁴

Kant clearly implies here that the soul, an object of inner sense, is knowable. In the Second Edition, the knowability of the objects of inner sense is accepted by Kant only if such objects are spatialized. That is, an object of inner sense can be known if it can be represented in spatial as well as temporal terms. Here, in the Prolegomena, Kant does not appear to go so far. Although he does, in places, conjoin space and time as conditions for knowledge, he does not fully recognize the implications which his doctrine has in relation to the exclusive objects of inner sense. Indeed, if the conjunction of space and time were adhered to consistently it would follow that the spatiality of an object of inner sense, rather than its temporality, determines its actuality. However, here in the Prolegomena, the opposite is concluded.

Although in the Prolegomena the direct relation between the Garve-Feder review and Kant's argument against subjective idealism may not be establishable with apodeictic certainty it would appear that the correspondence between the arguments against subjective idealism in the Prolegomena and the speci-

fic charges leveled against Kant in the Garve-Feder review is too close to be attributed to mere chance. As we have seen, the sections which we have examined there can in fact serve as replies to the charge of subjective idealism as well as to three of the four more specific charges contained in the review. Moreover, within those sections which may be seen as replies to the Garve-Feder review some changes of the basic doctrine of the Critique of 1781 present themselves.⁵⁵

It is reasonable to believe that Kant would have wanted to carry over some of his new clarifications and alterations of his philosophy in the Prolegomena to the Second Edition, of the Critique, which motivated the alterations of his doctrine in the first place. It would therefore seem appropriate to include such changes in the edition of 1787.

In fact, in the Preface to the 1787 edition, Kant tells us that "the only addition, strictly so called" to be found in this later edition, "affecting the method of proof only, is the new refutation of psychological idealism...."⁵⁶ Apart from this, the alterations made in the Second Edition, are claimed by him to be merely clarificatory, and thus, are merely intended to "remove wherever possible, difficulties and obscurity...."⁵⁷ It is more than noteworthy that Kant here refers to the refutation of idealism generically, and thus does not restrict his professed innovations to the "Refutation of Idealism". In fact there are a number of refutations of idealism in the Second Edition of the Critique.⁵⁸ Taken together, they may be seen to serve as a reply to the Garve-Feder review. More significantly, however, they explicitly

and unequivocally express Kant's expansion, in the Second Edition, of the role which space plays in his Critical doctrine. These refutations of idealism, which shall be considered in the order in which they appear in Kant's text, are to be found in the extensive footnote to the Preface (B xxxix-xl), in the sections added at the end of the Aesthetic (B 69 ff.), in the "Refutation of Idealism" (B 278-287), as well as in the supplementary section at the end of the Postulates of Empirical Thought.

Of the additions to the Second Edition of the Critique one of the most significant can be found in the extended footnote added to the Preface. Why Kant chose a mere footnote for so important and perhaps radical a statement of his revised view is difficult to comprehend. Even as a footnote it does not quite fit into the exposition at the particular place in which it is inserted. Yet, in spite of the fact that it may very well be conspicuously misplaced its contents are of paramount importance for understanding the significance of the revisions of Kant's doctrine in the Second Edition of the Critique.

In this footnote, at B xxxix, which is among the refutations of idealism, we find some of the clearest statements of Kant's view concerning the necessity of space for any objective knowledge. He tells us here that it is from the existence of things outside of us, "that is, spatial entities, that from which we have the whole material of knowledge, even for our inner sense."⁵⁹ He seems here to claim that knowledge of objects of inner sense is dependent upon the ex-

istence of objects in space. But even more radical, is the claim here that the very material, or matter, of knowledge comes from outer sense. However, I believe that he means by this that, as he indicates elsewhere in the Second Edition,⁶⁰ because the Categories only apply to objects in space, our knowledge of objects of inner sense is dependent upon such inner objects being represented through outer representations of spatial objects. This is to say that unless a thought or feeling is represented through being correlated with a corresponding spatial object it is meaningless and unknowable. It is in this manner that spatial objects constitute the matter even for objects of inner sense. Without such spatial representation objects of inner sense, for Kant, in the Second Edition, have no objective reality, or are unknowable as objects.

Kant's reasons for this position are observable in this very footnote. He tells us here, using the appearance of ourselves to ourselves as an example of such knowledge of an object of inner sense, that

...through inner experience I am conscious of my existence in time (consequently also of its determinability in time), and this is more than to be conscious merely of my representation. It is identical with the empirical consciousness of my existence, which is determinable only in relation to something which, while bound up with my existence, is outside me, and therefore experience not invention, sense not imagination, which inseparably connects this outside something with my inner sense. For outer sense is already in itself a relation of intuition to something actual outside me...⁶¹

Objects of inner sense, by virtue of the fact that they are also objects of outer sense, or objects in space, are actual.

Kant utilizes outer objects for the determination of inner objects. Because these outer objects are "bound up with" (verbunden)⁶² with inner objects, these inner objects are considered as actual. Kant is somewhat vague here concerning this relation of being "bound up with" and thus it is difficult to comprehend exactly how the object outside of me communicates its actuality to the inner objects in a manner so that the latter can be considered as objective. But it is significant here that he noted that the appearance of the self, an object of inner sense, is here considered as objective by virtue of its relation to an object of outer sense. No such condition is recognized by Kant in the First Edition.

Moreover, looking at the above quotation more closely, it appears also to serve as an answer to the second, third, and fourth of the specific charges leveled against Kant in the Garve-Feder review. In reply to the second criticism, Kant is telling us that because of its relation to an object of outer sense, the appearance of myself is "experience not invention, sense not imagination...." The distinction here between an actual object and a mere illusion resides in the fact that the former is "bound up with" something in space. In reply to the third criticism, Kant is saying that the determination of the subject through its relation to that which is in outer sense guarantees its objectivity. Its dependence upon that which is in outer sense is not the dependence of our knowledge of our own subjectivity upon a mere representation, but rather an outer representation, a representation of that which is actual. In reply to the fourth criticism,

Kant can be understood as saying that the distinction between inner and outer is not a distinction between two different modes of representations but rather a distinction between that which is subjective and that which is actual. Moreover, it is by virtue of its relation to that which is actual in space that even the subjective facet of consciousness can contain objective appearances.

Thus, we find here that that which is an object of outer sense is actual by virtue of the fact that it is in space. This is what, for Kant, distinguishes objective knowledge from subjective illusion. The latter is in time alone, while the former is conditioned by space. There are however two distinguishable senses in which an object may be conditioned by space. The object, if it is an object of outer sense must be conditioned by space in that must be an object which exists in space. However, the objects of inner sense, as the above quotation indicates, if they are to be objects of knowledge must be "bound up with" objects of outer sense. This latter sense in which an inner object of knowledge is conditioned by a spatial object, and hence, indirectly by space, becomes more clear in this very footnote where he again uses this notion of being "bound up with" or related to that which is immutable in experience, which for Kant is something outside of me, or something in space.

Inner appearances cannot be known except in relation to that which is permanent. Temporal experience, for Kant here, is always dependent upon the spatial. We have just seen that

no inner appearance can be known, according to Kant except in relation to that which is spatial. Outer experiences are all conditioned by space. Thus, all temporal experiences which are to constitute knowledge must be spatial experiences as well; both in that they must be represented in spatial terms and must be "bound up with" the objects of outer sense. It should be noted that the Kantian notion of being "bound up with" (Verbindung) the spatial, is not limited to the exclusive objects of inner sense. Returning for the moment to the problem of substance, which we here find consists of objects in space; that which is substance (in the field of appearance) lies at the very foundation of the Critical epistemological structure because all existence is determined through it alone.⁶⁷

This is to say that not only objects of inner sense, but of outer sense as well, must be bound up with the permanent, which is in space. We therefore find that there is a symmetry between the spatial and the temporal in this footnote to the Preface. Our knowledge of both objects in space and in time has as its content, or matter objects in space. Moreover, both must be bound up with the permanent in appearance, which is an object in space, if they are to be determined as objects of knowledge.

Again, taken as a reply to the Garve-Feder review, Kant's footnote here produces answers to all of the significant charges contained in the review except for the one having to do with the ideality of space and time. To the charge that Kant cannot distinguish between that which is real and that which is not, he replies that that which is in space is with-

out doubt actual for him. The reality of that which is in inner sense is bound up with outer sense, and thus the extent to which inner appearances are related to that which is in space is the extent to which they are actual objects of knowledge. Undoubtedly, Kant is not altogether lucid about this relation. But we must recognize that in so far as the matter⁶⁸ of knowledge, for Kant, constitutes an essential aspect of all knowledge in so far as all such matter consists of appearances of outer sense, the objects of both inner and outer sense must contain outer representations, or representations which are in space. Thus we find here that an object of knowledge which is actual can be distinguished from an illusory one by virtue of its relation to outer sense and the objects contained therein. This relation to objects in space is two-fold. The actual object must be bound up with an object in space (substance in the field of appearance), and also contain as its matter an appearance in space. Although these relations which the objects of experience have to space and the spatial may not be succinctly defined by Kant one thing is clear, and this is that objects which are unrelated to space in both of these manners are not actual for Kant. Thus, in distinguishing the actual from the imaginary effective determinations can be made for Kant: objects which are properly related to space are actual, and those which have no such relation to outer experience, and thus space, are not actual.

The problem of the objectivity of the self as an appearance is the problem of the determination of the objectivity of the appearances of inner sense. The Garve-Feder re-

view accused Kant of being unable to establish the existence of the phenomenal self apart from subjective appearance. The crux of this criticism is that the phenomenal self was, for Kant, no more objective than that which is a mere creation of the mind since that which it is dependent upon is a mere appearance. Kant's reply here is that the appearance of the self cannot be like a mere representation since its objectivity is anchored in an actual object of outer sense, and in so far as that which is outside me is not of my own invention, that which depends upon that which is in outer sense cannot be a mere product of the mind. Thus, my knowledge of myself, as an appearance, because it is dependent upon that over which my powers of invention have no control it cannot be a mere creation of my subjective feelings.

Although for Kant here, objects of inner sense are dependent upon those of outer sense, we should note that Kant is not here claiming that outer sense and its objects are totally independent of inner sense.⁶⁹ The claim rather is that objects of outer sense condition those of inner sense and that the appearances of outer sense are not a mere function of inner sense. If this were so, if the realm of the outer were totally independent of the outer, it would follow that the objects of outer sense would not need to be in time, and thus could not be known. But conversely, for Kant, unless the objects of inner sense are in the above manner dependent upon those of outer sense, they too would never be known.

In relation to the general charge that he is a subjective idealist Kant's answer is quite to the point: if a sub-

jective idealist is one who believes that all outer experience lacks any sort of independence of inner experience and that only objects of inner experience have any cognitive objectivity, then he, Kant, cannot properly be so labeled. For him, he tells us, the inner is dependent upon the outer. Experiences of things outside of us constitute experiences of actual things as appearances. The objects of inner sense are not self sufficient in regard to the determination of their actuality. Such a determination can only be accomplished mediately, through objects of outer sense. Thus, for Kant, it is only if the objects of outer sense are independent, in some respect, of objects of inner sense, that objects of inner sense can be known. Objects of inner sense, if they are to be known, must be related to objects of outer sense.

This is not to say that objects of knowledge in outer sense are not conditioned by time, they of course are. The claim here, in this particular place, is not that time itself is conditioned by space nor that inner appearances, as appearances and not objects, are conditioned by objects in space. Rather, Kant is arguing that if those objects which appear in time, are to be known, then they must be determined by objects in space. The subjective idealist, according to Kant, would deny the actuality of any such external object. Kant, on the other hand, not only grants its actuality, but also establishes the actuality of objects of inner sense through such spatial objects. If, for the subjective idealist, the actuality of spatial objects is totally derived from the actuality of inner appearances, even that of the self cannot be known apart

from outer experience.

The first of the specific criticisms of the Garve-Feder review charges Kant with reducing all actuality to mere representations by idealizing space and time. We have already examined part of what can be viewed as Kant's reply to this charge in our examination of Section 13 of the Prolegomena. More significantly, however, the entire first part of the Prolegomena, which is devoted to answering the question of "how is pure mathematics possible?"⁷⁰ can be easily construed as a more detailed reply to the first charge of the Garve-Feder review. This part of the Prolegomena, which roughly corresponds, as we shall see, to the Transcendental Expositions of space and time in the Critique, follows Kant's analytical method. In it Kant attempts to show what the characteristics of space and time must be in order to guarantee the objectivity of scientific knowledge.

Not restricting himself to pure mathematics, Kant tells us there that even pure mechanics is dependent upon pure intuition:

Geometry is based upon the pure intuition of space. Arithmetic achieves its concept of number by the successive addition of its units in time, and pure mechanics cannot attain its concept of motion without employing the representation of time.⁷¹

Moreover, he considers the problem of this part of the Prolegomena to be solved by virtue of the fact that he believes that he has shown;

Pure mathematics as synthetic cognition a priori is possible only by referring to no other objects than to those of the senses. At the basis of their empirical intuition (of space and time) which is a priori, because the latter intuition is nothing but the mere form of sensibility,

which precedes the actual objects, since it in fact makes them possible.⁷²

Thus, Kant tells us here, that it is because space and time are the subjective (intuitional) forms of appearance, that pure mathematics is possible. But not only do space and time make the pure sciences possible, Kant tells us here that they also, in fact make the appearances of empirical objects possible.

Kant here, thus tells us that space and time, as pure, a priori intuitions, which as the forms of our appearances not only do not turn all of actuality into mere appearance, but in fact, help guarantee the validity of the sciences and serve as the condition for our knowledge of that which is actual. Through the use of the analytical method, Kant, here is able to focus upon space and time as principles which guarantee the objectivity of the sciences. Moreover, we see here, the conjunction of "space and time" as a unitary "pure intuition" which conditions the "actual appearance of objects".⁷³

Although we have already exhaustively examined the Transcendental Expositions in the Second Edition version of the Aesthetic,⁷⁴ there are a number of points worthy of making at this juncture concerning its relation to the first criticism of the Garve-Feder review. Although these expositions cannot strictly be regarded as refutations of idealism they do constitute an attempt, on Kant's part to show how pure intuitions of space and time, as subjective as subjective conditions of knowledge, serve to establish the possibility of the sciences. No doubt, as we have seen,⁷⁵ the case that Kant ar-

gues there is stronger for the science of space than for that of time. Yet, in both cases, whether successful or not, we find an effort not present in the First Edition, to directly link space and time with the pure sciences. Through the use of the analytical method, space and time are seen here as the ground of objective scientific knowledge rather than mere arbitrary representations.

In reply to the second criticism of the Garve-Feder review; the charge that his philosophy confuses reality with illusion, Kant, in a new section added at the end of the Aesthetic, seems to argue that appearances given in space and time are not at all illusions. His argument here however, is relatively weak. He tells us that

when I say that the intuition of outer objects and the self intuition of the mind alike represent objects and the mind, in space and time, as they effect our senses, that is as they appear, I do not mean that these objects are a mere illusion. For in an appearance the objects, may even the properties that we ascribe to them, are always regarded as something actually given.⁷⁶

The claim here is that appearances actually appear and consequently do not constitute illusions.

It must be kept in mind that, in the Aesthetic, space and time, as the forms of appearances to be given to us, constitute conditions for the reception of appearances.⁷⁷ No appearance can be given to us which is not conditioned by pure intuition. However, appearance, for Kant is not equivalent to objective knowledge. It is possible for an appearance of inner sense, for example, to be conditioned by time and yet not be an object of knowledge. Hence, just as appearances actually appear to us illusions do as well; in so far as they actually

may be in time and thus fulfill the condition required for them to appear.

Because Kant here attempts to defend this distinction between actuality and illusion on the level of appearance rather than on that of objective knowledge, as he does in the Preface in 1787, his argument is unconvincing. In utilizing space as a principle of distinguishing between that which is actual and that which is illusory we need not rely upon our own subjective judgements of whether something 'really appears' to us to determine its actuality. In the case of objective knowledge it is made clear that an object is non-illusory, or actual, if it either is in space or can be represented in spatial terms. Why Kant attempts to draw the distinction here in the manner he does is difficult to understand. Perhaps the claim here is that if an object is in space or in time it is a true appearance. But as an object of knowledge we have seen that it must be spatial. Still the problem remains for Kant that many illusions actually appear in time.

Nevertheless, Kant goes on to argue that if one does not accept the ideality of space and time one courts turning the universe into a mere illusion: "It is only if we ascribe objective reality to these forms of representation, that it becomes impossible for us to prevent everything from being thereby transformed into mere illusion."⁷⁸ Kant means by this that it is only if we regard space and time as objective in the sense are qualities of things-in-themselves,⁷⁹ that we become involved in certain absurdities that compel us to admit

the illusoriness of all existence.

Though Kant's arguments here, at the end of the Aesthetic, are far from clear and perhaps far from compelling assent, they again reveal an attempt on his part to reply to the kinds of criticisms found in the Garve-Feder review. He here again attempts to distinguish between that which is actual and that which is illusory, and he argues again that the ideality of space and time must be presupposed in order for us to properly understand these conditions which make appearances possible. The newly expanded role of space is admittedly not integral to Kant's argument here because he is here primarily concerned with space and time as the conditions necessary for sensible appearances, and not with space and time as the conditions necessary for objective knowledge. In so far as appearances are concerned, there is no significant change in the role of space and time in the Second Edition. For Kant there are authentic appearances which exist in time alone.⁸⁰

However, the doctrine in the Second Edition of the Aesthetic is not contrary to the role which space plays in regard to objective knowledge. He tells us there that "the representations of the outer senses constitute the proper material with which we occupy our mind...."⁸¹ Moreover, the relative importance of geometry in the arguments of the Transcendental Expositions lead us to believe that the newly found expansion of the role of space and the spatial was not far from Kant's mind in the Second Edition of the Aesthetic.

The Refutation of Idealism is inserted by Kant into the Postulates of Empirical thought. By placing it there, in

the manner that he does, Kant makes it an integral part of the Principles, and hence of his positive Critical doctrine. The Categories which correspond to the Postulates are those of modality.⁸² They enable us to determine the possibility, actuality, and necessity of an object of knowledge. Yet, in order for these concepts to apply to an object there must be something which makes this relation possible. That is, there must be something in the relation of the subject and the object which is characterizable as possible, actual, and necessary.

The Refutation of Idealism is found immediately following the proof of the Second Postulate. This footnote reads: "that which is bound up with the material conditions of experience, that is, with sensation, is actual."⁸³ Prima facie the claim here appears to be that that which is bound up with sensation is actual. But how do we know whether something has sensation as its matter, and is thus actual?

The concept of an object, alone, does not suffice to determine the actuality of the object. There must be something in the object which is the mark of its actuality if we are to properly know it as actual. Thus, Kant says: "the perception which supplies the content to the concept is the sole mark of its actuality."⁸⁴ However, Kant soon expands this condition by claiming that in order for us to determine an object as actual it need not be directly perceived. According to him, we can infer the existence of things which we do not perceive from those things which we do perceive, through the use of empirical laws. Hence:

Our knowledge of things reaches, then only in so far as perception and its advance according to the empirical laws can extend. If we do not start from experience, or do not proceed in accordance with laws of the empirical connection of appearance, our guessing or enquiring into the existence of any thing will only be an idle pretense.⁸⁵

An object, for Kant, can be known as actual if it can be perceived or if it can be inferred, through empirical laws, as connected with that which is perceived,

The idealist finds difficulties, which Kant considers serious, in regard to his mode of exhibiting the actuality of things. Not only does he, the idealist, question the empirical rules which connects that which is perceived with that which is not perceived, he questions the actuality of that which is perceived in the first place. For Berkeley, according to Kant, the actuality of perceptions is doubtful, and that which is inferred therefrom therefore cannot be affirmed with certainty.⁸⁶

As opposed to the idealist, Kant, here attempts to affirm the actuality of outer perceptions, and attempts to do this using the idealists own presuppositions. For the idealist, according to Kant, the realm of inner sense has precedence over that of outer sense. For Berkeley, according to Kant, all perceptions are relegated to inner sense. For Descartes, according to Kant, the self, as an object of inner sense, is an object whose actuality we can be certain of. But perceptions inferred from the existence of the self, lacks the indubitability of our knowledge of ourselves. Kant argues in the Refutation of Idealism, that the determination of our knowledge of the objects of the realm of inner sense as actual

is dependent upon outer sense, and that if one affirms the actuality of the objects of inner sense one must necessarily affirm the objects of outer sense. The actuality of the objects of inner sense is thus mediately inferred, through the objects of outer sense. Kant attempts to show that "even our inner experience, which for Descartes is indubitable, is possible only on the assumption of outer experience."⁸⁷

The theses of the Refutation of Idealism is: "The mere, but empirically determined, consciousness of my own existence proves the existence of objects outside of me."⁸⁸ It is because my own existence is empirically determined that objects in space must be actual. Although the proof of the actuality of objects of outer experience is dependent upon the belief in the actuality of the self as an object of inner sense, the actuality of the self according to Kant, is derivative, and the actuality of outer experience is immediate.

In the proof, Kant argues that because self consciousness requires time, and the determination of an object in time requires something permanent in relation to time; actual things outside of me, self consciousness is dependent upon the existence of actual things in space. Moreover, if that which determines time; the permanent, were not actual, if it were a mere representation, it would not be a thing, and thus could not serve as the permanent. Thus, "the determination of my existence in time is possible only through the existence of actual things which exist outside of me."⁸⁹ The objective knowledge of the self, as an appearance, is dependent upon the existence of things in space.

Kant does however, here in the proof, identify things in space with the permanent in appearance. He says: "the perception of a thing is possible only through a thing outside me."⁹⁰ But he is vague here as to what this permanent is, although it is clear that its perception does require space, being that is 'outside of us'. Moreover, it is significant to note that here, where Kant argues that time must be determined by this permanent, he seems to mean by this notion of determination (Bestimmung),⁹¹ determination as an object of knowledge.⁹² Thus, where he claims that time can only be determined through a spatial object, he means that it can only be known as an object of knowledge if it stands in a certain relation to an object in space. The argument here however, is not that time, as an empirical object is a condition of our knowledge of ourselves, but rather that in order for time, as the form of inner sense, to have content; be an appearance of the self, it must be related to the permanent, which here is some unspecified thing in space. In order for us to have any experiences of temporal objects, the permanent, and space, must be presupposed since we "are unable to perceive any determination of time save through change in outer relations (motion) relatively to the permanent in space...."⁹³ It is clear however, that not only must the outer representation of time be conditioned by outer experience, but that objects of inner sense must also be so determined if they are to be known. Kant says that "outer experience is really immediate, and that only by means of it is inner experience--not indeed the consciousness of my own existence, but the deter-

mination of it in time--possible."⁹⁴ This is reinforced where he says that "the existence of outer things is required for the possibility of a determinate consciousness of the self."⁹⁵

The significance of this is that here Kant, clearly makes that which is in the 'psychological' inner realm dependent upon that which resides in the 'material' outer realm. It is the latter that is immediately perceived as actual and through which the former is mediately determined as actual. It would of course be foolish to claim that for Kant the 'outer' is totally independent of the 'inner' or that the 'outer' is in every respect prior to the 'inner'. Kant does not claim this. What he does claim here is that in contradistinction to the subjective idealist, for him, the outer, and not the inner realm is what is immediately actual, and that we can immediately distinguish all objects of outer sense as non-illusory. Moreover, it is only by strictly distinguishing between the two realms that we can have any objective knowledge of inner appearances, for the latter are determined as actual only through their relation to spatial objects.

In relation to the more general claim of the Garve-Feder review which accuses Kant of being a subjective idealist, in the Refutation of Idealism Kant replies that rather than turning all that is actual into mere representation his philosophy guarantees the actuality of some representations. Outer things are actual by virtue of their being in space. Objects of inner sense may also be actual by virtue of their being

bound up with things in space. Thus, there are, for Kant, objects of both inner and outer sense which are considered by him not as mere representations but as actual objects which are known by us.

In reply to the first specific criticism of the review, Kant tells us that his consideration of space and time as ideal does not turn all to mere representation. On the contrary, it is because objects exist in space and time that they are actual. It thus appears that here, in relation to the determination of the actuality of an object of knowledge, space has priority over time. For Kant here, it is that which is in space which is immediately determined as actual, whereas those objects of inner sense which are not, of themselves spatial, derive their actuality mediately through being bound up with spatial representations. Time, on the other hand, although a necessary condition for the actuality of an object of knowledge, neither immediately nor mediately determines an object of knowledge as actual.

In reply to the second of the specific charges of the review, Kant tells us that the distinction between the actual and the illusory is drawn very clearly by him. Actual objects are either objects which are in space or objects which are bound up with space. Those objects which fulfill neither of these conditions cannot properly be known as objects of knowledge.

To the third criticism of the Garve-Feder review, which accuses Kant of establishing our knowledge of ourselves inappropriately due to its necessary relation to outer appearance,

Kant replies that it is this very relation to objects in space which firmly establishes our knowledge of ourselves as actual. Because only spatial objects can serve as the perpetual matter of the objects of inner sense which can be known, the knowledge of the self as an actual object of knowledge is dependent upon objects of outer sense. Moreover, because the self in time, is always in a state of flux, to be known properly it must be related to that which is permanent in appearance, which for Kant, is an actual object in space. Because objects in space are actual the determination of the self as an object of knowledge, is best accomplished according to Kant, by basing it upon things in space, which for him, are not mere representations but actual objects of knowledge.

The fourth of the specific criticisms of the Garve-Feder review charges Kant with precluding the subject from having knowledge of the actual by drawing the distinction between inner and outer in the manner that he does. Kant, of course does not, in this section claim that the thing-in-itself is not actual nor does he claim that we can know it as an object of knowledge. However, he does here clearly distinguish between the objects of inner and outer sense. We find here in the Refutation of Idealism, that for Kant, objects of outer sense are in space and thus are actual. Objects of inner sense, on the other hand, are spatial only mediately, that is only through being bound up with spatial objects. Objects of outer sense are thus immediately in space, while objects of inner sense are only mediately in space. Both, however, may be actual, and hence, for Kant, actuality need

not be restricted to an external transcendent. Both the objects of inner and outer sense may be actual. Their actuality depends upon their externality, or their relation to the external realm of actual phenomenal entities.

In the Second Edition of the Critique there is a new section added at the end of the Postulates which is entitled General Note on the System of the Principles. Kant tells us that his remarks here serve to confirm his Refutation of Idealism.⁹⁶ But more significantly, it serves as a confirmation of the positive role which his refutations of idealism serve in relation to his Critical doctrine in the Second Edition. We find here a reaffirmation of the dependence which the objects of inner sense have upon space and the spatial. We also find here an explicit statement of the new role which we have seen that space plays in the definition of the limits of possible experience, and thus, in the establishment of the parameters of meaning of synthetic a priori judgements. Moreover, as we shall soon see, Kant tells us that not only are things in space required for the representation of the permanent, but it is space itself that is the permanent.

Moreover, Kant here speaks of space not so much in terms of its relation to the determination of that which is an actual object of knowledge, but rather in terms of that which is a possible experience. This is of great significance since the realm of possible experience conforms, for Kant, to the limits of the empirical application of the Categories as well as the limits of the meaningfulness of synthetic a priori judgements. But to see this we must examine the text.

Kant begins this crucial section by reexplaining to us that the possibility of a particular thing cannot be determined from a Category alone, and similarly, the meaningfulness or objective relity, or proper applicability of a Category requires that there be an intuition to which it corresponds. The Category itself does not create an object of knowledge, it is always required that an intuition be given to the Categories:

So long as intuition is lacking, we do not know whether through the categories we are thinking an object, and whether indeed there can any where be an object suited to them. In all these ways, then, we obtain confirmation that the Categories are not themselves knowledge, but are merely forms of thought for the making of knowledge from a given intuition.⁹⁷

Similarly, Kant tells us that synthetic a priori propositions cannot be made from mere concepts. He says that "for the same reason it follows that no synthetic proposition can be made from mere categories." Concepts alone are meaningless. Intuitions are required for knowledge. Kant gives us as an example the Principle of causality; "that is, every event, presupposes a cause...." This principle, like all synthetic a priori propositions, if they are to be meaningful, and thus if they are to be proven, must relate to an intuition. He says that "we are able to prove it only of objects of possible experience, and therefor of the knowledge of an object given in empirical intuition."⁹⁸ Such propositions are provable only if they are meaningful, and their meaningfulness depends upon their relation to objects of possible experience, or of empirical intuition.

But if the Categories, and synthetic a priori judgments must relate to an intuition, it is not just any intuition to which they must relate:

But it is an even more noteworthy fact, that in order to understand the possibility of things in conformity with the categories, and so to demonstrate the objective reality of the latter, we need not merely intuitions, but intuitions, that are in all cases outer intuitions.⁹⁹

To be meaningful they must relate to an outer intuition, an intuition of an object in space.

To clarify this, Kant gives us the relational Categories as examples. The first example is of the Category of substance and accident, to which corresponds the Principle of Permanence of Substance. In order for this Category to be meaningful, and in order for this Principle to be provable it must relate to outer intuition. Kant says that "in order to obtain something permanent in intuition corresponding to the concept of substance, and so to demonstrate the objective reality of this, we require an intuition in space (of matter)."¹⁰⁰ It thus appears that here, matter in space constitutes the permanent in appearance. Furthermore, it appears that it is space which is the permanent: "For space alone is determined as permanent, while time, and therefore everything that is in inner sense, is in constant flux."¹⁰¹

Kant, no doubt creates difficulties with his specification of matter as the permanent in appearance. If this permanent is to serve as the correlate of the concept of substance it must be empirical, yet no empirical entities are absolutely abiding. Perhaps Kant is only looking here for a rough empirical approximation of substance, in the same manner as a

plate is a rough empirical approximation of a circle. It is difficult however, to understand for certain why he choses matter, in view of the fact that he believes the permanence of matter to be presupposed a priori.¹⁰²

Yet, Kant's explicit recognition of space as the permanent represents a significant alteration of some of his earlier views. In his "Innaugural Dissertation", time appears to be the permanent or substance.¹⁰³ In the First Edition of the Critique, although Kant does not consistently maintain this view, transcendental apperception appears as the permanent.¹⁰⁴ Yet, Kant, here in the Second Edition, views space as the permanent, and thus as substance. Moreover, that which is permanent in appearance, which determines time, must be something in space. What this permanent in appearance is is difficult, for the most part, to determine. But here, Kant does suggest that it is matter. Yet, if matter is the permanent in appearance, it must serve as the empirical correlate of the concept of substance. If it is empirical however, then it cannot be absolutely permanent. Moreover, if matter is an a priori presupposition it can serve as the correlate of the concept of substance. Perhaps this is why Kant is so elusive in specifying what this substance is. Yet, whatever it is, it must be in space. It follows therefore, that in the Second Edition, that which is conditioned by space, substance, conditions all immediate objects of inner sense or all objects which are primarily temporal. Moreover, it is only here, in the Second Edition, that it is space that is epistemologically, if not metaphysically, permanent.

The second example that Kant gives us here is of the second relational Category. Again he tells us that in order for this Category to be meaningful, it must not only have a corresponding intuition, but that this intuition must always be 'outer', or in space:

...in order to exhibit alteration as the intuition corresponding to the concept of causality, we must take as our example motion, that is alteration in space. Only in this way can we obtain the intuition of alterations, the possibility of which can never be comprehended through any pure understanding.¹⁰⁵

Alteration in space is the true correlate of the Category of causality. This Category is meaningful only in so far as there is an empirical example of such alteration. Further clarifying what he means by the correlate of this Category, Kant tells us that "the intuition required is the intuition of the movement of a point in space." The intuition of alteration is a product of such movement, since "the presence of the point in different locations (as a sequence of opposite determinations) is what alone first yields to us an intuition of alteration."¹⁰⁶

Interestingly, not only must the pure concept of causality have a spatial correlate, but even inner intuitions of alteration cannot even be thought, according to Kant, unless they are represented spatially, and their pure form, time, is spatially determined:

For in order that we may afterwards make inner alterations likewise thinkable, we must represent time (the form of inner sense) figuratively as a line, and the inner alteration through the drawing of this line (motion), and so in this manner by means of outer intuition make comprehensible the successive existence of ourselves in different states. The reason of this all is that all alteration, if it is to be perceived as alteration, presupposes something permanent in intuition, and that in inner

sense no permanent in intuition is to be met with.¹⁰⁷ Thus, the determination of time brings us back to the permanent in outer sense and the 'outer' as a condition of the 'inner'.

Again, in the case of the relational Category of community, space is requisite. As we have already seen in the Second Edition, Kant changed the Principle corresponding to the Category of community to accomodate this new principle of his.¹⁰⁸ However, here we find the justification for this alteration.

As in the case of the other Categories, the concept of community requires a correlate in intuition. Here, the correlate would appear to be an intuited community of individuals, such as is found among "relations of action and reaction."¹⁰⁹ However, in order for there to be such a community there must be some common medium in which they coexist. Otherwise they need not be related to each other in experience. For Leibniz, Kant tells us, this medium is God: "leibniz, in attributing to the substances of the world, as thought through understanding alone, a community, had therefore to resort to the mediating intervention of a deity."¹¹⁰ For Kant himself, however, the postulation of a God was not necessary for this purpose; space suffices:

We can, however, render the possibility of community--of substances as appearances--perfectly comprehensible, if we represent them to ourselves in space, that is, in outer intuition. For this already contains in itself a priori formal outer relations as conditions of the possibility of the real relations of action and reaction, and therefore of the possibility of community.¹¹¹

For Kant, it is only if substances, or things, are in space that they can exist in community with each other. It follows

that it is only things in space which can serve as the correlates of this Category, and this is because space serves as the universal medium which provides the basis for the possibility of their interaction.

Although Kant has already told us that spatial intuitions are necessary for the objective reality of the Categories in general, he singles out the quantitative Categories, telling us that this Principle holds for them. He does not explain this as fully as he does in the case of the relational Categories, but he does tell us that "the possibility of things as quantities, and therefore the objective reality of quantity, can be exhibited only in outer intuition, and that only through the mediation of outer intuition can it be applied also to inner sense."¹¹² This tells us that not only are the quantitative concepts, as in mathematics, for example,¹¹³ are meaningful only in relation to objects in outer intuition, but also that such quantitative notions may only be applied to objects of inner sense if the latter can be represented in spatial terms. The implication is that the inner objects of psychology may be meaningfully correlated with numbers, a prerequisite for their measurability, only if they can be figuratively represented in space. However, whatever the implications here for empirical psychology, we still do find here a confirmation of my view that for Kant, in the Second Edition, only spatial objects, that is only objects which are either in space or can be spatially represented, can be compatible with the Categories, and hence knowable.

The last refutation of idealism of the Second Edition is perhaps the most significant. Here Kant confirms the view that the Categories apply only to spatial objects. This is made explicit here more forcefully than in the Deduction of 1787, and Kant leaves little doubt here that the parameters of human knowledge conforms to the limits of objects as they either appear in space or are bound up with spatial objects. In so far as they are in space they give meaning to the Categories in that they serve as possible human experiences. Moreover, as those, and only those, objects which constitute objects of possible experiences, spatial objects serve as the only meanings for synthetic a priori judgements.

In relation to the Garve-Feder review this refutation of idealism appears not so much to deal primarily with any of the specific criticisms of the review, as it seems to reply to the general charge of subjective idealism. For Kant here, objective human knowledge, the meaningful empirical employment of our Categories, as well as meaningful a priori judgements are possible only through their relation to that which is spatial. Objective knowledge, as opposed to mere subjective representation, is possible by virtue of objects in space and objects which are spatially represented. Space serves as the principle which can be utilized to determine whether a concept is meaningful, and thus whether it properly applies to an object if the object either is in space or can be "bound up with" that which is in space, it may, in principle, serve as an object which is knowable, and which thus supplies meaning to both thought and pure intuition.

Thus far, in dealing with the refutations of idealism formulated by Kant after the Critique of 1781, I have concentrated on showing that we have in these doctrines something new, not found in the First Edition of the Critique. These innovations were seen as expressing an emphasis upon space and outer experience not found earlier. The Garve-Feder review was established as containing a possible explanation for this new Kantian doctrine.

It is apparent that if a refutation of idealism can be found in the First Edition, which contains the same basic innovative doctrines which we exhibited as contained in the Second Edition, this would show that Kant's emphasis upon space in the Second Edition is in fact not at all new. Moreover, this would also show that these refutations of idealism, in the Second Edition, could not reasonably be viewed as a response to the Garve-Feder review.

In the Fourth Paralogism we find what appears to be just such a threat to our argument. It is this very section which Vleeschauwer has in mind when he tells us of the Refutation of Idealism: The refutation of idealism, which demonstrates the necessity of a transcendent existent, is not an absolutely new section, but rather a section which has been moved to a new place."¹¹⁴ If it is indeed the case that the Refutation of Idealism is nothing but an old doctrine moved to a new place it could be argued that the doctrine it contains, which I considered to be significant alterations of the Critical philosophy as put forward in 1781, are not alterations at all. Moreover, if the Fourth Paralogism already

contains the doctrines found in the other refutations of idealism which we have considered, we are left with the same difficulties: namely that the expansion of the role of space in the Second Edition is illusory. That which we would call an expansion, would under these circumstances, be nothing but a restatement of that which appears in the edition of 1781.

It should be noted that even if the doctrines of the refutation of idealism are all already contained in the Fourth Paralogism, their change of location, in the Second Edition, is of significance. The Fourth Paralogism, in the First Edition, is in a relatively obscure section of the Critique. In it Kant's doctrine of outer sense merely serves to combat what he believes to be an erroneous belief. In the Second Edition, by placing his doctrine of outer sense in the Preface, Aesthetic, and Principles, he makes it an integral part of his positive Critical doctrine.

However, although there may be a superficial resemblance between the doctrine of the Fourth Paralogism and the refutations of idealism, they represent essentially different philosophical enterprises. The superficial resemblance resides in the fact that in the Fourth Paralogism Kant does give us a refutation of idealism. Also, in this Paralogism, Kant does represent the spatiality of an object as a criteria for the determination of its empirical reality. He tells us there that "all outer perception, therefore, yields immediate proof of something real in space...."¹¹⁵ Moreover, in the section immediately following the Fourth Paralogism, Kant tells us that "the appearance to outer sense has something fixed and abid-

ing which supplies a substratum as the basis of its transitory determinations....¹¹⁶ We have here a refutation of idealism, the use of space as the determinant of the real, as well as the view that outer sense contains the permanent. Are not all of these doctrines which we claimed to be characteristic of the Second Edition alone? Let us examine these doctrines, as put forward in the Paralogisms, individually.

The Fourth Paralogism does indeed offer us a refutation of idealism. But the type of idealism which Kant here attempts to refute is not that of Berkeley. Kant tells us here that the idealism that he here attempts to combat is the kind which in reference to external objects claims that "we can never, by way of any possible experience, be completely certain of their reality."¹¹⁷ This is the kind of idealism which Kant ascribes to Descartes,¹¹⁸ and thus is not the kind of idealism ascribed to Kant by the Garve-Feder review.

Moreover, even Kant's refutation of Cartesian idealism here, does not proceed along the lines of the arguments of the refutations of idealism found in the Second Edition. There we found that objects of outer experience are immediately determined as actual, and the objects of inner sense are determined as actual only mediately, through being represented in spatial terms. However, here, in the Paralogisms of the First Edition, the arguments do not appear even in an attempt to establish a dependence of inner sense upon outer sense in this respect. In fact Kant says there:

...external things exist as well as I myself, and both, indeed, upon the immediate witness of my self consciousness. The only difference is that the representation of

myself, as the thinking subject, belongs to inner sense only, while the representations which mark extended beings belong to outer sense. In order to arrive at the reality of outer objects I have just as little need to resort to inference as I have in regard to the reality of the object of my inner sense...¹¹⁹

The claim here is that the objects of our knowledge which we represent to ourselves as in space are as actual as the self which is known as an appearance in time. Just as we are immediately conscious of the actuality of ourselves as an appearance, so too we are immediately aware of the actuality of things in space. Knowledge of the self here, is neither derived nor mediate, yet, in the Second Edition, objective experience is determinable for an object of inner sense in so far as the object can be translated in spatial terms.¹²⁰

Certainly, Kant does here, in the Fourth Paralogism, regard the fact that an object is given in space as determinative of its actuality. However, this does not conflict with the doctrine of objectivity as found elsewhere in the First Edition. We have already found that in the Edition of 1781 Kant regarded the temporality of an object as the sole intuitional determinant of its objectivity. But, because, for him, all that is in space is also in time, it is only natural that in the First Edition he considered objects which are given in space as actual. The crucial question here is whether only spatial objects are actual (as objects of knowledge), or whether objects in time alone are also actual.

It is clear however, as we have just seen, that Kant here, in the Fourth Paralogism, regarded some objects which were in time alone as actual, as the appearance of the self,

for example, is said to give immediate evidence of its actuality. He also speaks here of sensation as indicating "a reality in space or in time."¹²¹

In the Second Edition however, it is things in space and time which he regards as objects of actual experience.¹²² In the Paralogisms however, objects of inner sense fall within the realm of possible experience, and apparently without being spatialized:

...the whole of rational psychology, as a science surpassing all powers of human reason, proves abortive, and nothing is left to us but to study our soul under the guidance of experience, and to confine ourselves to those questions which do not go beyond the limits within a content can be provided for them by possible inner experience.¹²³

Here it is possible inner experience which supplies the content of knowledge to objects of inner sense. This confirms my view that spatial objects are not integral to any object of knowledge of the First Edition. Thus, although Kant does give us here a refutation of idealism and does consider the spatiality of an object as a mark of its actuality, this is done with less restrictive limits of possible experience than those of the Second Edition.

It must be admitted that here, in the Paralogisms, Kant does tell us that the permanent in the field of appearance is in outer sense. This would seem to follow from his previous claims, in the First Edition, that the permanent in appearance cannot be either in inner sense nor can it be time itself.¹²⁴ However, although we may here, in the First Edition, have the germ of the Kantian theory of substance, relative to

the Second Edition, we do not yet have this doctrine in its most complete (although nevertheless not satisfactory) form. For it is only in the Second Edition that the permanent itself is identified; as space, and the permanent in appearance is specified as matter in space.¹²⁵

Thus, although in the Paralogisms we do find some elements which resemble Kant's more extended theory of space, as it appears in the Second Edition, this portion of the text is totally consistent with Kant's theory of space of 1781. The dependence of temporal representations upon the spatial is not yet here made clear, and the refutation of idealism found here addresses itself to a problem different than that posed by the Garve-Feder review. Moreover, even the Kantian spatialization of substance, which is found here, is not expressed in its strongest terms, as it is in the Second Edition.

In total, the refutations of idealism contain some of the most explicit statements of Kant's elevation of space in the Second Edition of the Critique. It does not make a conclusive difference whether or not these changes can be shown to be a reaction against the Garve-Feder review. The latter review does, however, serve as a heuristic device which is helpful in explaining these alterations in a systematic manner. But whatever the true motivation behind these changes their significance in relation to the rest of the Critique is rather profound. But prior to examining the implications which the elevation of the role of space, as found in the refutations of idealism, have in relation to the Critical phi-

losophy taken as a whole, it would be helpful to enumerate these alterations. Thus, here in the refutations of idealism, as found in the Second Edition, the alterations which establish the role of space as more significant than in the First, include the following:

1. The actuality of an object of knowledge is determined through its relation to space. If an object is either in space or is represented spatially it is regarded by Kant as an actual object of knowledge.

2. The meaningfulness of the Categories is contingent upon their relation to possible objects of outer empirical experience. Only objects of outer sense, that is objects either in space or represented in spatial terms, may serve as meanings for the Categories. Because a possible experience is always a possible experience of a spatial entity it is only spatial objects which can supply meaning to our pure concepts.

3. An intuition of matter in space is required for the determination of the self in time. In order for the appearance of the self to be known as an actual object of knowledge it must stand in relation to the permanent, which here is a particular spatial entity; matter.

The first two of the above additions, as we shall see, are of major significance within the context of Kant's Critical philosophy. The third, however, is a somewhat confused doctrine,¹²⁶ which is at least to some extent prevalent in the First Edition. We shall therefore concentrate primarily upon the first two of these alterations.

Although we are told by Kant, here in the refutations of idealism, that both the possibility and actuality of an empirical object is determined through its relation to space, there is nothing odd, at least for Kant, in utilizing spatiality as the determinant of both of these characteristics. In fact, because for Kant, in the phenomenal realm, all that is possible is actual,¹²⁷ the use of the same principle for

the determination of both is not merely consistent, but parasimonious as well.

Thus, for Kant, if space determines the possibility of an object, in so far as we can tell, it implies its actuality as well. If a thing which is spatial therefore "agrees with the formal conditions of experience",¹²⁸ or is possible, it follows that within the phenomenal realm it must be "bound up with the material conditions of experience"¹²⁹ and thus be actual. Thus, the spatiality of an object--the fact that it is in space or is represented spatially--determines it as an object for knowledge to which the characteristics and possibility both belong.

The concepts of possibility and actuality, although they are two of the twelve Categories, must occupy a special place in the overall Kantian system. The distinction between that which is actual and that which is illusory would appear to be crucial to any epistemological system dedicated to the attainment of certainty in regard to whether or not we know the objects of metaphysics.¹³⁰ If the distinction between actuality and illusion is exhaustive then we must be able to determine that which is actual as actual. Because space is the determining factor in this respect in the Second Edition, it serves as a tool which is used to distinguish that which is actual from that which is not.

The notion of possibility is even more crucial for Kant than that of actuality in so far as for him, the prime determination of the meaningfulness of a concept resides in whether or not it relates to a possible experience.¹³¹ Without a

corresponding possible experience both pure concepts and pure intuitions would be meaningless, and thus knowledge would not be possible. If synthetic a priori judgements, and hence metaphysics as a science, is to be possible the concepts which they contain must be meaningful. Their meaningfulness, in the Second Edition, resides in their relation to objects which either are in space or bound up with space.

Thus far, in discussing the various changes found in the Aesthetic and Analytic, we have examined these alterations, for the most part, in terms of their respective impact which they have upon the section of the Critique in which each such change is found. Thus, in discussing the charge of scepticism, which was said to lead to the alterations in the Second Edition of the Transcendental Deduction, we did not reinterpret the Aesthetic in the light of these alterations. The alterations which we discussed were in the most part viewed in isolation from each other, as separate entities.

If however, the Critique is a systematic whole we should be able to view all of its elements in their interrelation to each other. Hence, rather than merely viewing the various changes which relate to Kant's doctrine of space in isolation from each other, we shall now view them as a unity in respect to their effect upon the Critical doctrine taken as a whole. Moreover, the significant question which arises at this juncture is that of the relation of the most decisive of Kant's changes in regard to his theory of space; as found in the refutations of idealism, to the other elements of his main epistemological enterprise. This is to ask; if Kant took the

alterations of the refutations of idealism seriously, as an integral element of his system, what significance would this have for his Critical enterprise, not merely in regard to the First Edition, but even in regard to other elements of the Second Edition? It will be seen that the alterations of the role of space, found in the refutations of idealism, when taken together with the rest of the Critical doctrine as found in the Second Edition, helps exhibit the fact that in the Second Edition Kant's Critical doctrine is significantly different than that of the first.

In so far as the Aesthetic deals with the problem of validity or the problem of what is space and time, the elevation of the role of space as found in the refutations of idealism is not very germane to it. We have already examined one respect in which space, in the Second Edition of the Aesthetic plays a more significant role than in the First Edition of the Aesthetic. However, in so far as the Aesthetic deals with the essential characteristics of space and time as pure intuitions it deals primarily with the problem of validity and not the problem of objectivity or meaning, which the most significant of the alterations of the refutations of idealism seem to address themselves to.

However, in the Aesthetic, Kant also concerns himself with the doctrine that space and time are the forms of intuition. For Kant, as we have already seen,¹³² time is the immediate form of the representations of inner sense, while space the immediate form of the representations of outer sense. Kant

adds that since outer representations, in so far as they too are determinations of the mind belong to inner sense, it follows that time is the mediate condition of appearances of outer sense. Thus, in both editions of the Critique, in the Aesthetic, while time is the condition of all appearances, both inner and outer, space conditions only outer appearances.

However, if we return to the doctrine found in the refutations of idealism which states that for an object to be an object of knowledge (possible or actual), it must either be in space or bound up with (Verbunden) with a spatial object, the doctrine of space as found in the Aesthetic appears to be extended. We already know that if an object is in space or is an object of outer sense it is conditioned by space.¹³³ However, the addition here that it is only if an object of inner sense is bound up with an object in space that it may serve as an object of knowledge is quite significant. For Kant, we have thus found that it is only if an object of inner sense is represented through a spatial model that it can be known. This means that it is only if a particular inner appearance is correlated with a spatial object which serves as its matter that it can be known. However, it follows that it is only in so far as such spatial objects are immediately conditioned by space that they can serve as the material basis for inner appearances, and that if the latter, inner appearances, are to be known, they must be objects of knowledge; be mediately conditioned by space.

What the refutations of idealism tell us here is that there is a basic symmetry in the Critique between space and

time which does not become apparent if we look to the Aesthetic alone. In the Aesthetic time is the immediate condition of inner sense, and space the immediate condition of outer sense. Time alone is ubiquitous there in so far as it is also the mediate condition of outer sense. Thus, in the Aesthetic, even in the Second Edition, time, as the condition of appearances, is more extensive than space in that it applies to both inner and outer sense, while space only applies to objects of outer sense. However, in the refutations of idealism we find that space is a mediate condition of the appearances of inner sense, since these appearances, if they are to be known, must be bound up with objects in space. Because the object in space must be conditioned by space, the objects of inner sense which depend upon these outer objects for their cognition, are thus mediate conditioned by space. It follows from these considerations that space and time are equally universal in so far as they are both conditions for the objects of knowledge, whether they be of inner or outer sense.

Thus, what we find here is that when we interpret Kant's doctrine in the Aesthetic in the light of the refutations of idealism, the argument of the Aesthetic, which asserts that only time is a condition for all human knowledge, is altered in a manner so that what is true of time; namely its universality as a condition of appearance and hence knowledge, is true of space as well. Of course Kant did not specifically alter the Aesthetic in this manner in 1787. He did not fully work out the consequences which the refutations of idealism have in regard to other elements of his system. Had he done

so he would have altered the Aesthetic by expanding the limits of space as the form of appearances so that it should condition both inner and outer appearance. But, as we know, he did not. However, if we are to accept the Critique as a unified whole, it is apparent that in 1787, Kant believed space and time, as forms of appearance, to condition both objects of inner as well as of outer sense. Moreover, this can only be properly understood as a doctrine belonging to the Second Edition of the Critique in so far as the refutations of idealism, which make this reinterpretation credible, are found only in the later edition.

We have already seen, in our discussion of the Transcendental Deduction,¹³⁴ that what distinguishes the Deduction of the First Edition from that of the Second is the fact that it is in the first only that time is cited by Kant as the only intuitional condition for objective knowledge, while in the second, space and time are both said to be required. Moreover, in the Second Edition, the Deduction contains the doctrine that it is only those objects which are in space and time which are possible objects of experience, and thus are the objects to which the Categories apply.¹³⁵

This doctrine of Kant's, in the Deduction of 1787, is really explicit in only one particular place.¹³⁶ Its presence there, although unambiguous, could possibly be ignored as a mere Kantian idiosyncrasy. Because of its lack of pervasiveness in the rest of that edition of the Deduction one may argue that it is neither an integral element of the Kantian philosophy in the Second Edition.

The refutations of idealism, especially the General Note on the System of Principles,¹³⁷ reenforces our view that not only does the addition of space as a condition of knowledge represent a conscious attempt on Kant's part to alter the limits of experience, it also represents a significant element of his determination of the notion of a possible experience. As we have seen in this refutation of idealism Kant tells us that only outer intuitions can serve as meanings for the Categories.¹³⁸ It follows that because only objects of possible experience serve as such meanings these objects in space (and time) are such objects,¹³⁹ and hence that it is they that supply the fundamental meaning or content which makes the application of the Categories to experience possible.

Moreover, because the limits of possible experience constitute the limits of the proper application of the Categories to appearance, or the limits of human knowledge, the addition of space as a condition for the determination of an object of knowledge would seem to restrict the understanding from ever granting us knowledge of objects of inner sense. However, in the Deduction of 1787 Kant makes it quite clear that it is not only things in space which are knowable, but also that objects which can be represented spatially may be known.¹⁴⁰ This doctrine is again reaffirmed in the refutations of idealism where we have seen that in order for an object to be known, Kant believes that it must either be in space or bound up with a spatial object.¹⁴¹

Thus, the refutations of idealism tend to reaffirm Kant's expansion of the role which space plays in the Trans-

cendental Deduction of 1787. Moreover, because the refutations of idealism exhibit quite explicitly this new role which space plays in the Deduction of 1787 it leaves little doubt that Kant had intended, in the Deduction of 1787, to expand the role which space plays there in the manner that we have already indicated in the preceding chapter.

The accepted view concerning the alteration of the Deduction of 1787 is that it was motivated by an anonymous review which was previously discussed,¹⁴² which accuses Kant of not properly establishing the limits of human knowledge. Kant's renewed emphasis upon defining the limits of the proper application of reason, in the Deduction of 1787, is viewed as a product of this review. His definition of the limits of reason there depends upon, as we have seen,¹⁴³ upon the introduction of space as a condition necessary for knowledge. Although this new aspect of the Critical doctrine may very well have been motivated by the review of Ulrich's book, it just as well may have been motivated by the Garve-Feder review. In fact the reviews, by both criticizing Kant for his manner of establishing the limits of our knowledge of actual objects,¹⁴⁴ complement each the other's argument. So too, Kant's reply to one also serves in part as a reply to the other. Not only are Kant's reactions to these reviews consistent with each other they also tend to affirm each other, in that they may both be seen as recognizing one unitary problem: the problem of properly defining the limits of human knowledge so that all that is not knowledge remains outside these limits and all that is knowledge remains within them. It is in resolving this

problem that Kant's introduction of space as a condition of all human knowledge appears as a response.

In continuing the reexamination of the Analytic in the light of our findings concerning the refutations of idealism, the next section, in the order of the text, which must be dealt with is that of the Schematism. The Schematism itself offers us very little by way of alteration of the doctrine of the First Edition. There, even in the Second Edition, it is time which serves exclusively as the basis for giving structural coherence to experience. We have already noted that this section of the text, even in the Second Edition, presents a doctrine more consistent with the First Edition of the Critique.

Kant's justification for establishing temporal schemata as conditions for all experience resides in part in his belief in time as the universal form of all appearance. Because "time as the formal condition of the manifold of inner sense" is also the principle "of the connection of all representation...."¹⁴⁵ Since space, in the First Edition, and apparently in certain sections of the Second Edition, is not as universal in its application to appearances, and therefore, at least in the First Edition, in which Kant considers exclusively temporal appearances as cognitive, it cannot serve as a universal condition for all human knowledge.

However, if we keep in mind Kant's expansion of the role of space in the Second Edition to its status as the form of both inner and outer sense it becomes apparent that because the schemata are the formal conditions of all sensibility, a spatial schematism would be at least as appropriate as a

temporal one; or perhaps what would be most appropriate would be a spatio-temporal schematism. This is what, as we have seen, both Paton and Smith suggest.¹⁴⁶ The refutation of idealism, taken together with the Aesthetic, give us the doctrinal justification, or perhaps even point to a systematic imperative, that space be included in the schematism. If the refutations of idealism are to be regarded as an integral element of the Critical doctrine, consistencey demands that the schematism be revamped so as to include space as a structural element necessary to all human knowledge. There is a hint even in the First Edition version of the Schematism as to where space would fit into Kant's doctrine there had he decided to alter it in conformity with his views of 1787. Although Kant tells us that "the image is a product of the empirical faculty of reproductive imagination,"¹⁴⁷ and that this is empirical, he also tells us that "the pure image of all magnitudes (quantorum) for outer sense is space."¹⁴⁸ This inconsistency might be indicative of the fact Kant was groping for a transcendental role for space in the Schematism but had not yet established what this might be. However, in fact, Kant never did establish a significant role for space in the Schematism, although the refutations of idealism taken together with the Aesthetic seem to indicate that he should have, at least in the Second Edition.

In the preceding chapter we discussed a number of alterations which Kant made in the Principles, which appeared in the edition of 1787.¹⁴⁹ In some of these alterations we find that Kant makes space more prominent than in the First Edition. However, these changes are somewhat sporadic in that

Kant does not tell us there that it is only to objects in space which the Principles generally apply to. It is true that the Principle of the Third Analogy¹⁵⁰ and the Axioms of Intuition,¹⁵¹ both, in the Second Edition only, are restricted in their application to spatial objects. Moreover, it is in the Principles that the Refutation of Idealism and the General Note on the System of the Principles are added.¹⁵² Yet, Kant did not totally revamp the Principles so as to totally reflect the significance of the refutations of idealism. In the First Analogy, in a section added in the Second Edition, Kant suggests that it is time which is substance.¹⁵³ Moreover, even in the Second Edition, in the Axioms of intuition, Kant speaks of them as applying to objects in space or time.¹⁵⁴

Generally, in the Principles, those additions (even with the exception of the Refutation of Idealism and the note added at the end of the Postulates) added in the Second Edition, tend to exhibit a greater sense of the importance of space in the Second Edition on Kant's part. The new first paragraph added to the First Analogy in 1787 is a rather puzzling exception to this general rule. However, even with these additions, the Principles were not fully revised so as to reflect the radical change of his position of the First Edition, as can be found in the refutations of idealism.

The Principles serve the function of formulating "by means of universal but sufficient marks the conditions under which objects can be given in harmony with these concepts."¹⁵⁵ In fact the Principles do attempt to establish those characteristics of objects which enable them to be known through

the Categories. But what sort of objects do these Principles apply to? This above quotation seems to indicate that the Principles seem to apply to the same objects as the Categories. In the First Edition, we have seen¹⁵⁶ that the Categories seem to apply to objects in time, whether or not they are in space or spatialized. So too, in the Principles, there is at least one place in the First Edition alone in which it is suggested by Kant that the Principles apply to temporal objects, without regard to their spatiality.¹⁵⁷ In the Second Edition we have seen that reflecting the doctrine of the Transcendental Deduction of 1787, some of the Principles are, in places, said by Kant to apply to objects in both space and time. Yet, this doctrine is not as pervasive as it ought to be, given the doctrine expressed in the refutations of idealism.

If, as Kant suggests, in the note added at the end of the Postulates of Empirical Thought, that the Categories only apply to spatial objects, it follows that the entire doctrine of the Principles concerns only spatial objects. This means that the characteristics ascribed to these objects, if the Categories are to apply to them, are always characteristics ascribed to spatial objects and spatial objects alone.

More specifically, in the Postulates of Empirical Thought an object, it is claimed by Kant, is actual either if it is perceived or if it is connected "with the object of some actual perception, in accordance with the analogies of experience, which define all real connection in experience in general."¹⁵⁸ In the First Edition, Kant tells us that the Analogies apply to objects in time, without regard to their exist-

ence in space as well."¹⁵⁹ In the Second Edition they are said to apply to things in both space and time.¹⁶⁰ Yet, the doctrine of the refutations of idealism is much more straightforward. In it we have found that in order for an object to be determined as actual all that it is recognized is that it be recognized as being spatial.¹⁶¹ This is to say that the refutations of idealism greatly simplify the problem of the determination of the actuality of an object. It is not said that it is necessary that the object be perceived nor be connected with that which is perceived, all that is required is that it be recognized as spatial. This does not necessarily represent a retraction of the doctrine of the determination of that which is actual as found in the Postulates. It is possible, although Kant does not necessarily tell us this, that what he means is that the determination of an object as spatial is equivalent to its being perceived or being known as connected with that which is perceived, and thus actual.

Whatever the case here, had Kant reinterpreted the doctrine of the Principles in the light of the refutations of idealism, not only would it have simplified the postulate concerning the actuality of an object but the postulate concerning its possibility as well. For Kant, in the First Postulate, an object is considered as possible if it "agrees with the formal conditions of experience...."¹⁶² This is a rather odd mode of determining the possibility of an object in that what Kant seeks to find through its establishment are the conditions which make the object amenable to subsumption under the Categories, or which allow the formal conditions of thought

to apply to it. Thus, to say that an object is possible if it conforms to the Categories is like saying that an object conforms to the Categories if it conforms to the Categories.¹⁶²

The determination of an object as possible through its spatiality avoids the above difficulty. Thus, had Kant carried out a total revision of the Principles to accomodate this doctrine of the refutations of idealism he would have avoided begging the question, as the First Postulate does, and would have determined the possibility of an object through either its existence in space or its being bound up with that which is in space. Moreover, this would be no insignificant revision for Kant in view of the fact that the meaningfulness of a concept depends, for him, upon its relation to a possible experience. This would mean that a concept, for Kant, would be meaningful if it has as its correlate a spatial object.

If for Kant, as the refutations of idealism strongly suggest, an object of possible experience is always a spatial intuition, it follows that only spatial intuitions can serve for him as the matter or meanings of synthetic a priori judgements. Kant tells us of synthetic a priori judgements that "they are valid only for objects of possible experience."¹⁶⁴ If by an object of possible experience, Kant, in the Second Edition, means a spatial object, then it follows that synthetic a priori judgements apply only to spatial objects, that is objects which either are in space or are bound up with an object in space.

If, as Kant suggests,¹⁶⁵ the pure sciences of mathematics and physics are essentially constituted by synthetic a

priori judgements it follows that the realm to which they apply, or the universe of objects which render them meaningful, is spatial. This is to say that for Kant, in the Second Edition, pure mathematics and physics apply only to objects in space or objects which are spatially represented, and hence that the parameters of meaning of the pure sciences are determined as including only spatial objects.

Moreover, if the Argument from Analogy is to hold, for Kant, metaphysics as a science, which must resemble the other pure sciences must also be constructed out of synthetic a priori judgements whose application is restricted to spatial objects. This is to say that in the Second Edition, because of the manner in which Kant defines the notion of an object of possible experience, as exclusively spatial, the metaphysics which the Critique is purported to help establish is a metaphysics of spatial objects. Its applicability is restricted to either objects of outer sense (in space) and to objects of inner sense which can be represented through objects of outer sense (in space).

Because, in the First Edition, the true meaning of a concept or intuition may be in time alone, the resultant metaphysics would have broader limits than that of the Second Edition, which would exclude such objects which could not be spatially represented. Hence, the Critical philosophy of the Second Edition is more critical than that of the first in that the limits it imposes upon the expansiveness of applied cognitive thought is narrower and more strictly defined. Kant's redefinition of knowledge in the Second Edition, as solely

spatial, tends to restrict the scope of the applicability of the Categories in a manner more narrow than in the first, and by so doing gives us a more strict criterion through which objects can be determined as cognitive.

NOTES

1. H.J. de Vleeschauwer, La Déduction transcendentale, Vol. II, p. 416.
2. Ibid. pp. 426-427.
3. See ibid. p. 426. For Kant's own reaction as to who was responsible for the negative tone of the review see I. Kant, "Letter to Christian Garve, August 7, 1783," in Kant: Philosophical Correspondence, 1759-99; ed. and trans. A. Zweig (Chicago: University of Chicago Press, 1967), pp. 98-105.
4. Although Kant had always wanted to respond to his critics his friends and students counseled him otherwise. He therefore, with almost mathematical regularity, resisted the execution of such decisions. See H.J. de Vleeschauwer, La Déduction transcendentale, Vol. II, pp. 535-536. Kant seems to have saved his responses to his critics for his published works. Although he does not usually explicitly specify to which criticism he is replying, the changes found not only in the Critique of 1787 but in the Prolegomena also, are to a large extent recognizable as reactions by Kant against the criticisms of his contemporaries.
5. See F. Copleston, A History of Philosophy, Vol. VI, (Maryland: The Newman Press, 1964), p. 180.
6. I. Kant, Prolegomena, p. 122.
7. Ibid. p. 123.
8. See ibid. p. 125.
9. (My translation), Göttingische gelehrte Anzeigen, (Jan. 19, 1782), 40.
10. Ibid., p. 41.
11. Ibid.
12. See Benno Erdmann, Kant's Kritikismus (Leipzig: Gieseck & Devrient, 1787), p. 88.
13. See CPR, A 19=B 33, p. 65.
14. See CPR, A 126, p. 147.
15. (My translation), Göttingische gelehrte Anzeigen, (Jan. 19, 1782), 44.

16. See below pp. 182-183.
17. See above pp. 137-140.
18. See below p. 228.
19. (My translation) Göttingische gelehrte Anzeigen, (Jan. 19, 1782), 44.
20. Ibid., pp. 44-45.
21. See CPR, A 185=B 228, p. 215, and A 381, p. 353.
22. Cf. Göttingische gelehrte Anzeigen, (Jan. 18, 1782), 47-48.
23. In this criticism the reviewer seems to confuse the two different senses in which Kant uses "outer". See CPR, A 373, p. 348.
24. Op. cit., 48.
25. I. Kant, Prolegomena, p. 123
26. See ibid.
27. Ibid.
28. Ibid., p. 124.
29. Ibid., p. 125.
30. Ibid., p. 37.
31. Cf. Göttingische gelehrte Anzeigen, (Jan. 19, 1782), 41.
32. I. Kant, Prolegomena, p. 32.
33. Ibid., p. 34.
34. Ibid., p. 35.
35. See above p. 172.
36. I. Kant, Prolegomena, p. 36.
37. Ibid.
38. See CPR, A 373, p. 348.
39. Cf., I. Kant, Prolegomena, p. 36.
40. See ibid., p. 37.
41. Ibid. Also cf. A 44=B 61-62, pp. 83-84.

42. Ibid., p. 38.
43. See above pp. 148-149.
44. See Göttingische gelehrte Anzeigen, (Jan. 19, 1782), 42-43.
45. I. Kant, Prolegomena, p. 39.
46. See CPR, B 147-149, pp. 162-163.
47. See above p. 226-227.
48. See I. Kant, Prolegomena, p. 65.
49. See above pp. 73-76.
50. See above pp. 150-153.
51. See above pp. 148-150.
52. I. Kant, Prolegomena, p. 65.
53. (Emphasis mine), ibid. p. 54.
54. Ibid. p. 84.
55. See above pp. 190-192.
56. CPR, B xxxix, p. 34.
57. CPR, B xxxvii, p. 33.
58. See N.K. Smith, Commentary, p. 289.
59. (My translation), KrV, B xxxix, p. 33, fn., and cf. CPR, B xl, p. 34.
60. See CPR, B 291, p. 254.
61. CPR, B xxxix-xl, pp. 34-35, fn.
62. See KrV, B xl, p. 33.
63. CPR, B xl-xli, pp. 35-36, fn.
64. See CPR, A 182-184=B 226-228, p. 214.
65. See CPR, B 291, p. 254.
66. See above pp. 154-155.
67. See above pp. 160-161.
68. See CPR, A 20=B 34, pp. 65-66, and A 86=B 118, p. 121.

69. Cf. CPR, B x1, p. 35, fn.
70. I. I. Kant, Prolegomena, p. 28.
71. Ibid. p. 30.
72. Ibid. p. 31.
73. Ibid.
74. See above pp. 75-76.
75. See above pp. 80-89.
76. CPR, B 69, p. 88.
77. See CPR, A 26=B 42, p. 71; and A 31=B 46, pp. 74-75.
78. CPR, B 70, p. 89.
79. Kant believed this to be Berkeley's view. See CPR, B 274, p. 244.
80. See CPR, B 66, p. 87.
81. CPR, B 67, p. 87.
82. See CPR, A 218=B 265-66, p. 239; and cf. A 80=B 106, p. 113.
83. CPR, B 266, p. 239.
84. CPR, B 273, p. 243.
85. CPR, A 226=B 273-74, p. 244.
86. See CPR, B 274-275, p. 244.
87. CPR, B 275, p. 244.
88. CPR, B 275, p. 245.
89. CPR, B 276, p. 245.
90. Ibid.
91. See KrV, B 275, p. 274.
92. See above pp. 148-149.
93. (Emphasis mine) CPR, B 277, p. 246.
94. CPR, B 293, p. 256.
95. CPR, B 278, p. 247.

96. See CPR, B 293, p. 256.
97. CPR, B 288, p. 253.
98. CPR, B 289, p. 253.
99. CPR, B 291, p. 254.
100. Ibid.
101. CPR, B 291, p. 255.
102. Cf. CPR, B 277-278, p. 246.
103. See I. Kant, "Innaugural Dissertation", p. 66.
104. See CPR, A 107-108, p. 136.
105. CPR, B 291, p. 255.
106. CPR, B 292, p. 255.
107. Ibid.
108. See CPR, B 256, p. 233.
109. CPR, B 293, p. 256.
110. CPR, B 293, pp. 255-256.
111. CPR, B 293, p. 256.
112. Ibid.
113. This Kantian doctrine is already hinted at in the First Edition. There, in the Schematism, Kant tells us: "The pure image of all magnitudes (quantorum) for outer sense is space...."
CPR, A 142=B 182, p. 183.
114. H.J. de Vleeschauwer, The Development of Kantian Thought, p. 102.
115. CPR, A 371, p. 347.
116. CPR, A 381, p. 351.
117. CPR, A 368-369, p. 345.
118. See CPR, B 274-275, p. 244.
119. CPR, A 371, p. 347.
120. See N.K. Smith, Commentary, pp. 301-305.
121. (Emphasis mine), CPR, A 374, p. 348.

122. CPR, B 147-148, p. 162.
123. CPR, A 382, p. 353.
124. See CPR, A 107, p. 136, and A 183, p. 214.
125. See above pp. 217-220.
126. See above pp. 218-220.
127. See CPR, A 231=B 283-284, p. 250.
128. CPR, A 218=B 265, p. 239.
129. CPR, A 218=B 266, p. 239.
130. See CPR, B 22, p. 57.
131. See CPR, A 194=B 126-127, pp. 147-148.
132. See CPR, A 34=B 50-51, p. 77.
133. See ibid.
134. See above pp. 148-153.
135. See CPR, B 147-148, p. 162.
136. See ibid.
137. See above pp. 216-223.
138. See above p. 218.
139. See CPR, B 147-148, p. 162.
140. See CPR, B 154-155, p. 165.
141. See above pp. 150-153.
142. See above pp. 140-144.
143. See above pp. 152-153.
144. See above pp. 140-144.
145. CPR, A 138=B 177, p. 181.
146. CPR, A 140=B 179, p. 182.
147. CPR, A 141=B 181, p. 183.
148. CPR, A 142=B 182, p. 183.
149. See above pp. 155-168.

150. See CPR, B 256, p. 233.
151. See CPR, B 262, pp. 197-198.
152. See CPR, B 274-279, pp. 244-247, and B 288-294, pp. 252-256.
153. See CPR, B 224-225, p. 213.
154. See CPR, A 162=B 203, p. 198.
155. CPR, A 136=B 175, pp. 179.
156. See above pp. 137-140.
157. See CPR, A 176-177, p. 208.
158. CPR, A 225=B 272, p. 243.
159. See CPR, A 176-177, p. 208.
160. See CPR, B 219, p. 209.
161. See above 197-199.
162. CPR, A 218=B 265, p. 293.
163. See CPR, A 93-94=B 126-127, pp. 126-127.
164. CPR, B 73, p. 91.
165. See above pp. 23-32.

CHAPTER VI

CONCLUSION

In the preceding chapters evidence has been presented in support of the claim that space plays a more significant role within the Kantian epistemological framework in the Second Edition of the Critique than in the first. The evidence which we have presented consists primarily of direct quotations from the Kantian text understood within the greater context of the Kantian theory of knowledge. To help us understand the meaning of these citations we have included some reference to the contemporary criticisms of his day which Kant may have been motivated to react to.

What hopefully, has been uncovered are a number of different senses in which space comes to the fore in the Second Edition. Not all of the various ways in which Kant chose to emphasize space are of equal import with regard to his projected goals which his Critique was intended to accomplish. However, before venturing an attempted explanation of the significance of these alleged innovations it might be helpful to review them in as concise a manner possible.

We have found that in the Second Edition, for its determination as time, requires space or the permanent. Because time is in a constant flux space must be presupposed, so that this flux may be properly ascribed as a characteristic of time.

This is to say that time, of itself, and not only as an object of knowledge, but as a pure form of intuition, is possible only if space is presupposed. This is because without this presupposition, time, as manifesting a constant flux, cannot be so determined. There is no such thesis in the First Edition of the Critique.

We have also found, primarily in the Second Edition, that for Kant, in order for a part or element of time to be known as an appearance it must be related to an outer, spatial object. This is because in order for us to have knowledge of an appearance which is in a state of flux it must be related to that which is stable within the field of appearance.

We found, moreover, that in the Second Edition, that which is the permanent, through which time itself is determined, is space. Although in the First Edition Kant does refer to the permanent in appearance as being in space, it is only in the second that he specifies what it is., and it is only in the second that the permanent proper is identified with space.

Most significantly, I believe, we have found that in the Second Edition Kant tells us that in order for an object to be known as an appearance it must be either in both space and time or be represented in spatial terms. This is a radical departure from the doctrine of the Transcendental Deduction of the First Edition where time alone is specified as the formal sensible condition required for all objective knowledge.

In terms of the Critical doctrine of the Second Edition this means that an object which is in space is immedi-

ately recognizable as actual only in so far as they can be represented in spatial terms. What Kant means by this doctrine of the spatialization of that which is primarily temporal is not very clear. It could very well be that he meant by this that just as all meaningful concepts must be temporalized so too all meaningful objects of inner intuition must be spatialized. Perhaps Kant means by this that just as there must be a temporal schema for the sensibilization of all objects of inner sense, which include thoughts. It is difficult to know for certain that this is Kant's meaning here, as he is not as clear as he should be on this point.

However, it is clear that while in the First Edition it is sufficient for an object to be determined as cognitive that it comply with the formal condition of time, space was not required. In the Second Edition time does not suffice. The object, to be known as an object of knowledge, must be represented in spatial terms, while in the First Edition this is not a condition for the knowability of objects of inner sense. In the Second Edition an object must be spatial if it is to be known. In the First Edition however, it need only be in time. Thus, the implication is that in the First Edition an object may be an object of knowledge if it is in time but is neither in space nor can be represented in spatial terms. In the Second Edition, however, such an object, for Kant, is not an object of knowledge.

This is to say that in the First Edition that which is exclusively inner may be known while in the Second it may not.

Moreover, although in the Second Edition Kant does not restrict knowability to objects in space alone; objects of inner sense may be objects of knowledge, but only provided that they can be represented in spatial terms. Those objects of inner sense which cannot be spatially represented in the Second Edition, cannot constitute objects of knowledge. Thus, while in the First Edition Kant does not preclude us from knowing the exclusively inner objects of empirical psychology, such as feelings, desires, etc., he does in the second.

The implications of this for Kant's epistemology are quite significant. In so far as the Critique is a critique of pure reason, that is, in so far as it constitutes an attempt at establishing the valid limits within which human reason may grant us objective knowledge,¹ the two editions of the Critique put forward essentially different doctrines. The limits established by the First Edition differ from those of the second. This can be seen from the fact that in the First Edition at least some exclusive objects of inner sense are knowable, while in the second, none can constitute objects of knowledge.

Because of the condition laid down by Kant, in the Second Edition, that any object, if it is to be an object of knowledge must be spatial, those exclusive objects of inner sense, which at least in principle are knowable in the First Edition, can no longer be known in the second. It is in this manner that the limits of valid human knowledge, as put forward in the Second Edition, are narrower than those of the first.

When viewed in conjunction with Kant's aims as put forward in the Second Edition the new emphasis placed upon space and the spatial has a profound effect upon the outcome of his work. In the First Edition, Kant admittedly was concerned with the establishment of the possibility of metaphysics.² He hoped to accomplish this task there through the definition of the limits of reason. The limits of reason were the limits of knowledge. Thus, if synthetic a priori judgements, in the First Edition, were to be valid they must apply to the cognitive realm of objects which are within the sphere of knowledge. Because in the First Edition, objects which are in time and cannot be spatialized are claimed by Kant to be knowable, it follows that for him they must fall within the realm of valid human knowledge. Consequently, it would appear to follow, that non-spatial objects can serve as the meanings for valid synthetic a priori judgements.

For Kant, in the First Edition, metaphysics is constructed out of synthetic a priori judgements. Hence, because the limits of human knowledge are defined by Kant here in the manner in which they are, synthetic a priori propositions may meaningfully refer to objects of inner sense alone. Hence, for Kant, in the First Edition, metaphysics, at least in principle, may deal with the immediate objects of both inner and outer sense. It is thus a science that may draw valid and true conclusions concerning both the realm of the mind as well as the realm of outer sense, or the realm of nature.

In the Second Edition we have found that Kant professes to tackle the problem of synthetic a priori truths in metaphy-

sics through first solving the problem of synthetic a priori truths in pure mathematics and pure physics. From the point of view of the pure intuitions required for the validity of such a priori judgements in the pure sciences, Kant appears to make a stronger case for pure spatial intuition than pure temporal intuition. His use of geometry as the exemplar of the pure sciences and the inconsistencies involved in his view of pure physics leaves the science of space with a greater share of the burden of fulfilling the Argument from Analogy than any science of time.

However, although I do believe that Kant does elevate the role of space in the Second Edition in this respect, the significance of the elevation of space in this regard is overshadowed by its elevation in regard to the problem of meaning. In the Second Edition alone, for a concept, or an intuition, whether pure or empirical, to be meaningful, it must either refer to a thing in space or be representable in spatial terms. Thus, for Kant, in the Second Edition, the pure sciences of mathematics and physics, if they are to be meaningful, that is if they are to apply to the world as we know it, must concern themselves primarily with the objects of outer sense. If they contain pure concepts these concepts must have as their correlates spatial objects, or objects which have been spatialized or are representable in spatial terms. Moreover, as we have seen, even the pure temporal intuitions which such sciences may contain must be spatially representable if they are to be meaningful.

Thus, for Kant, in the Second Edition, the pure sci-

ences apply primarily to the realm of outer experience. Those temporal intuitions and concepts which apply to inner sense must have their objects spatialized if they are to be meaningful. Thus, even if these sciences apply to or concern themselves with objects of inner sense, they do so only mediately, through the proper spatial organization of such objects.

If, in the Second Edition, as the Argument from Analogy suggests, metaphysics is to be like the other pure sciences, it follows that metaphysics must deal primarily with spatial objects. Just as the pure sciences, for Kant, concern themselves primarily with spatial objects so must metaphysics if the Argument from Analogy is to be taken seriously. Thus, while in the First Edition metaphysics could in principle concern itself with the exclusive objects of inner sense, in the second it is restricted to either objects in space or objects representable in space. It would thus appear that the very conclusion which Kant establishes differs in the two Editions, and that this difference is a function of his expansion of the role of space as a determinant of objective knowledge.

Although we have here primarily examined the two editions of the Critique, and to a lesser extent the Prolegomena and "Innaugural Dissertation", finding in these works a successive progression towards a Critical doctrine which is more oriented toward objects in space, there is reason to believe that Kant's movement toward such a position, as we have uncovered it, is symptomatic of a steady progress in that direction beginning with the "Innaugural Dissertation" and end-

ing with the Metaphysical Foundations of Physics.

I believe that this shift is reflected in Kant's views concerning the cognitive status of physics. While in the Metaphysical Foundations of Physics Kant views physics as an unequivocally empirical science,³ in the "Innaugural Dissertati-
 tion" it is a pure science,⁴ and in Kant's works from the period of the First Edition through that of the Second Edition of the Critique it appears to be somewhere in between a pure a priori and an empirical science. This, of course, requires further investigation, and is a fertile field for further study. However, I do believe that it is within the context of a general history of the evolution of Kant's philosophy that my study here can be seen as having the greatest significance, as exposing a decisive turning point in Kant's epistemology and theory of science.

NOTES

1. See CPR, A xi-xii, p. 9, and A 10-13=B 26-29, pp. 58-59.
2. See CPR, xii, p. 9.
3. See Immanuel Kant. Vom Uebergang von den metaphysischen Anfangsgründen der der Naturwissenschaft zur Physik, in Das nachgelassene Werk Immanuel Kant's, Albrecht Krause ed., (Frankfurt: Verlag von Moritz Schauenburg, 1888), p. 52.
4. See Kant, Dissertation, p. 62.

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