

Kant and the Problem of Objectivity

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1979



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## Preface

Most philosophers who have written in the mainstream of Kantian scholarship in the past fifty years or so have turned to the 'Transcendental Analytic' of the CPR for Kant's thoughts on objectivity and its cognates. For many reasons, not the least of which is the extraordinary philosophical quality of this section, the amount of 'philosophical time' afforded it is understandable enough. For it is in this section that Kant presents his solutions to the most important philosophical problems of his time; that these were genuine philosophical problems and not merely topics for idle metaphysical speculation is evidenced by the fact that philosophers today, with great variation and the benefit of sophisticated argumentative skills acquired since the eighteenth century, are still addressing these problems. How is it possible to establish the objective validity of statements? How is it possible to distinguish subjective experience from the objective world of which experience is had? Under what conditions is knowledge possible at all? If the possibility of objective knowledge could not be grounded, to paraphrase Kant, necessarily, then experience (of a common, shared world) and science (of nature) would be indefensible against a sophisticated scepticism such as Hume's. Regardless of how we approach the 'Transcendental Analytic', despite what we read into it or read out of it, its central, structuring argument is unmistakable: grant the initial premise that we do as a matter of fact have

experience; there are certain conditions, p and r, which must be true if experience is to be possible; we do have experience; therefore the conditions p and r are true. This approach to the problem of objective knowledge has led some philosophers to define the problem of objectivity in general as the problem of establishing the objective validity of statements in particular. This, in so far as it goes, is correct but it doesn't go far enough, either for Kant or for someone interested in the general problem situation with respect to the objectivity of knowledge in general and science in particular. Kant's struggle in trying to show that synthetic a priori knowledge is possible should indicate that objectivity is not just a question of demonstrating the truth or falsity of various kinds of statements we make about the world, including the class of synthetic a priori statements. The main thrust of the Kantian notion of the synthetic a priori was to show that objectivity is a function of what is given in intuition and what is provided by thought itself. The logical properties of the synthetic a priori reflect this combination of the empirical with the a priori in so far as no genuinely synthetic a priori statement can be reduced to, or analyzed in terms of, the subject-predicate relation. But the interesting question here is not whether there are statements such as these but whether there can be such statements at all, and if there can be, how there can be. Now Kant's answer to this group of questions is provided

in the form of a theory with respect to the nature of reality, namely, transcendental idealism. This doctrine, combined with a structure of argument which has come to be known as transcendental argument, is used by Kant to show that there are certain concepts and principles which are constitutive of reality without being in any way whatsoever, derived from experience; these concepts and principles are contributed by the mind in the course of the construction of the world of appearances. Thus, synthetic a priori knowledge is possible because and in so far as, the mind imposes its forms on the world. We can guarantee objectivity only if we can guarantee the truth of synthetic a priori judgments and we can guarantee the truth of synthetic a priori judgments by showing that their truth is required for the possibility of experience and that we have ourselves constructed the world of appearances in such a way as to make them true. Now this response begs a lot of questions but the most important one concerns the nature of the relation between language (concepts) and reality, or, quite simply, between thought and reality. Does thought condition, determine or otherwise structure, reality or does reality determine the nature and structure of thought? This essay is an argument to the effect that Kant's ingenious response to this question cannot be true, at least not in its original form, and that we require another metaphysical theory of the nature of reality with which to answer this question, namely, something vaguely resembling Leibnizian

realism. The problem of synthetic a priori knowledge is one possible formulation of the problem of the grounds or foundations of objectivity: do the grounds of objectivity lie in the nature of subjects knowing objects or in the nature of the things known? Do there exist entities in the world which are necessary to the world-order or is the world-order grounded in a transcendental condition? As will be seen, while I reject transcendental idealism and some of its subordinate doctrines, I do not by any means reject Kant's story about the categories, the principles of the understanding and the ideas of reason. Rather, I argue that these require an ontological casting if they are to receive vindication as essential elements of knowledge in general and of science. As epistemic predicates the categories are insufficient to guarantee the possibility of empirical knowledge and a science of nature because something stronger than conceptual necessity is needed to demonstrate the objectivity of concepts. Conceptual necessity or epistemic necessary may be sufficient for showing that a concept has legitimate application but it alone cannot show that the concepts in question are in fact applicable. If the categories are to be applicable to experience then they must be taken to describe features of things and if they describe features of things then Kant's theory of categories can be construed as a formal theory of ontological categories and ontological features. Conjoined with this is the theoretical conviction that

thought and language are ontologically revealing and discriminatory about the sorts of things there are, and, that there must be an isomorphism between conceptual (linguistic) structures and ontological structures. Thus the categories can be understood as being prescriptive of, and anticipatory of, ontology, and not just about the structure of our conceptual framework.

This thesis took root in a dissatisfaction with the way in which the problem of objective knowledge - the problem of objectivity in general - in the context of Kant's theoretical enterprise, had been discussed and understood by those philosophers working in this area. In brief, too little attention has been given to works other than the Critique of Pure Reason, or when it has been given, it is usually under the awesome shadow of the First Critique. It is clear to me now that a complete picture of Kant's theory of objectivity cannot be understood from the First Critique alone; for Kant's philosophy and theory of science and scientific theorizing, tell a rather different story, about things in themselves, the unconditioned, and the conditions necessary and sufficient for objectivity. In order to present a cogent argument in defense of this thesis, it has been necessary to go through a number of Kant's works in some detail and this has meant writing an essay longer than I had expected to write when I first started; indeed, since I began, publications have appeared which touch upon some of the topics I discuss and these naturally suggest

alternative ways of approaching the problems dealt with; but for the most part, I am convinced that it was required to argue at length about the different aspects of the whole problem of objectivity, if my central thesis was to be at all persuasive. While I have no illusions about the extent to which I have answered the central problems of objectivity, I do think that there is more to the problems related to objectivity in the context of Kant's theoretical framework than has previously been generally understood.

In this essay I have tried to work my way through to a general conclusion with respect to metaphysical theories pertaining to the nature of reality and the place of ontology and epistemology within such theories. It hardly needs to be said that a piece of work of this kind, ranging as it does over a wide spectrum of Kant's works, and attempting to address itself to many particular different issues in order to better pronounce on some important issues of a more general sort, is indebted to many authors who have written in or around the subject-area. The fact that I have relegated all references to secondary material to the notes is not meant to hide this debt but to make for an uncluttered text. My intellectual debts are many and cannot be represented by any single school or group of thinkers; I owe much to the work of Buchdahl, Putnam, Sellars and Silber all of whom may perhaps be said to be representative of the philosophical perspective

according to which philosophical problems are properly understood and illuminating only when considered in the context of related problem areas. At any rate, from such as these I have profited greatly. There are many others whose work on Kantian and related problems have enriched my own appreciation of the difficulties involved in an issue such as the problem of objectivity and I try to acknowledge this appreciation whenever appropriate in the notes to the text.

Thanks are due to many who have helped in such a variety of ways in the course of the writing of this thesis. My supervisor, Professor W.H. Walsh, always made generous comments on my work from the very crude drafts of the first chapters to the final draft; his kindness and assistance have been greatly appreciated. To Rosal and Kate Arbuthnot, both of whom have lived as closely to this thesis for the past three or so years, as I have, no word of thanks could suffice for their efforts at making possible a place in which this thesis could be written; their humour was infectious and their affection a blessing, only they know what it has meant to me.

Mrs. L. Berry produced a typescript with diligence and care during a rather extended period and I am most grateful for her efforts.

Finally, my deepest gratitude to those two without whose help this thesis would have been a long way from becoming "objectively real"; their warm concern and constant

References and Abbreviations

support, both practical and otherwise, are a great pleasure to acknowledge; to them - my parents - this effort is dedicated.

... of Judgment, the First Introduction to the Critique of Judgment, and the Inaugural Dissertation. I have followed what appears to be the customary practice of referring to the pages of these works by page numbers. With respect to the Metaphysical Papers and 'On a Discovery' I refer to the original author's page references included in the English translation of the former, by Henry Allison, and of the latter, by Henry Allison. On the Limits of Reason is translated by G. G. Meier.

... the majority of references to the works of Kant are to those found in the collection of translated works edited by Lewis, although there are some references to his other works by Lewis. Other references to Kant's works are given in the text of the above citations and are given with page numbers as they occur in the text and notes.

For the most part, references to works other than those by Kant and Leibniz are given not in the text of the essay but in the notes to the appropriate chapters. This practice has been followed to save space and to avoid cluttering the text with references to other works.

- 171 Critique of Pure Reason
- 172 Critique of Judgment
- 173 Metaphysical Introduction to Natural Science
- 174 Inaugural Dissertation

... Introduction to the Critique of Judgment

... On the Limits of Reason Alone.

... Metaphysical Papers and Letters.

## References and Abbreviations

For the Critique of Pure Reason I have followed the convenient and customary method of referring to the first (1781) and second (1787) editions known as 'A' and 'B'. For the Critique of Judgment, the First Introduction to the Critique of Judgment, and the Inaugural Dissertation, I have likewise followed what appears to be the customary practice of referring to the pages of these works by paragraph or section number. With respect to the Metaphysical Foundations of Natural Science and 'On a Discovery' reference is to the Akademie edition's page references included in the margin of the English translations of the former, by James Ellington, and of the latter, by Henry Allison. For the Religion Within the Limits of Reason Alone I have simply referred to the page number of the English translations by Greene and Hudson.

By far the majority of references to the works of Leibniz are to those found in the collection of translated works edited by L. Loemker, although there are references to P. Weiner's Scribner edition of works by Leibniz as well. Reference to works of Leibniz other than those to be found in the above collections are given, with corresponding abbreviations, as they occur in the text and notes.

For the most part, references to works other than those by Kant and Leibniz are given, not in the text of the essay but in the notes to the separate chapters. This practice has been followed to make for an uncluttered and hopefully, smooth-reading text. Detailed bibliographical information for all works mentioned and otherwise used, in the writing of this essay is provided in the bibliography.

The following is a list of abbreviations used frequently in the text and notes:

CPR	Critique of Pure Reason
CJ	Critique of Judgment
MFNS	Metaphysical Foundations of Natural Science
ID	Inaugural Dissertation
F. Intro.	First Introduction to the Critique of Judgment
Intro.	Introduction to the Critique of Judgment
Religion	Religion Within the Limits of Reason Alone.
L	Leibniz: Philosophical Papers and Letters, edited by L. Loemker.

"But, to explain myself distinctly, before all else it is necessary to consider that the modifications which may be: long naturally or without miracle to a subject, must come to it from the limitations or variations of a real genus, or of a constant and absolute original nature. For it is thus that philosophers distinguish the modes of an absolute being from that being itself; as it is known that size, figure and motion are manifestly limitations and variations of corporeal nature. For it is clear in what way a limited extension gives figures, and that the change which takes place in it is nothing but motion. And every time that we find some quality in a subject, we must believe that if we understood the nature of this subject and of this quality, we should conceive how this quality can result therefrom. Thus, in the order of nature (miracles set aside), it is not optional with God to give to substances indifferently such or such qualities, and he will never give them any but those which shall be natural to them; that is, which can be derived from their nature as explicable modifications. Thus it may be asserted that matter will not naturally have the above mentioned attraction, and will not move of itself in a curved line, because it is not possible to conceive how this takes place there; that is, to explain it mechanically; whereas that which is natural, must be able to become distinctly conceivable if we were admitted into the secrets of things."

(Leibniz in the Preface to the New Essays)

"Indeed it is only on the assumption of differences in nature, just as it is also only under the condition that its objects exhibit homogeneity, that we can have any faculty of understanding whatsoever. For the diversity of that which is comprehended under a concept is precisely what gives occasion for the employment of the concept and the exercise of the understanding.

.....Every concept may be regarded as a point which, as the station for an observer, has its own horizon, that is, a variety of things which can be represented, and, as it were, surveyed from that standpoint. This horizon must be capable of containing an infinite number of points, each of which has its own narrower horizon; that is, every species contains subspecies, according to the principle of specification, and the logical horizon consists exclusively of smaller horizons (subspecies), never of points which possess no extent (individuals). But for different horizons, that is, genera, each of which is determined by its own concept, there can be a common horizon, in reference to which, as from a common centre, they can all be surveyed; and from this higher genus we can proceed until we arrive at the highest of all genera, and so at the universal and true horizon, which is determined from the standpoint of the highest concept, and which comprehends under itself all manifoldness - genera, species, subspecies."

(Kant in the Critique of Pure Reason)

## Introduction

"When he asked himself how we might know anything about the world Kant replied that there were three possible theories. Knowledge might be read off from the world . . . . It might be read into the world by us; this is Kant's own view about the limited synthetic a priori knowledge we possess. Or there might be a pre-established harmony between the world and our cognitive faculties . . . . Kant's own account is promising; at least in a slightly modified form - he has no right to deny that the picture we construct may coincide with the real nature of the world in itself, and his list of the principles of human thinking requires amendment. But it will not cover all the ground. As we saw earlier, constraints internal to his theory require him to admit the existence of things in themselves, with his own mind among them as an active subject of synthesis . . . . And finally we have now seen that Kant's solution leaves it unexplained why the world should be so readily comprehensible to us, and that it affords no confidence that the future will continue to follow those relatively simple laws which we make the basis for our inductive extrapolations. These are not things that can be read into the world, in the construction of the world of appearances; they depend on how the world itself turns out, and therefore on the character of the data we receive in sensory experience." (R. Walker, Kant; p. 174)

Part of Kant's central purpose in the CPR is to demonstrate that the empiricist account of knowledge (knowledge can be read off from the world) and the dogmatic rationalist account of knowledge (there is a harmony between the world and our cognitive faculties) are false, and that his own account is the only defensible one. Both the empiricist and the rationalist Kant had in mind as his key opponents were Locke and Leibniz and both of these philosophers were realists; that is to say, from the perspective of ontology both Leibniz and Locke thought that objective knowledge of the world was grounded in certain kinds of entities in the world even (as they were both

prepared to acknowledge) if knowledge of such entities was inaccessible to us. Kant has often been portrayed as being primarily interested in knowledge and questions pertaining to the features which any comprehensible world must possess if it is to be a world for us at all. Yet, Kant spends a good part of CPR arguing against the claims of Leibniz and Locke, that is, Kant seems to think that he is obliged to perform the negative task of refuting any theory according to which knowledge of the world is rooted in objects in the world rather than in our thinking about the world. The fact is that it is not enough for Kant to argue that the categories and principles are constitutive of experience (objectivity) for this implies the correlative thesis that the world is a world of appearances and not things in themselves and in order to properly defend this claim Kant must show that the claims of Leibniz are false. In a word, Kant is obliged to demonstrate the falsity of Leibnizian realism (in Ch. IV I provide some detail with respect to the Kant-Leibniz debate).

Kant's own theory is of course, transcendental idealism, which I define in the first chapter as the thesis the central claim of which is that objectivity is tied to, and rooted in, the nature of the knowing and thinking subject. It is the subject's contribution to the overall cognitive situation which makes for objective knowledge and the order of things in the world is an order that we, as knowing subjects, have put there. This is an astonish-

claim to make when one looks at its consequences for ontology which I do in Ch. I; but it is astonishing not because the subject is alleged to make a contribution to the 'construction' of the objective world for this claim is one which has prima facie plausibility. What, in my view, lends extravagance to transcendental idealism is the implied thesis that those features of the world or of experience which are contributed to the cognitive situation by the subject, exist only for subjects knowing objects, which is to say, that the world is really ultimately (transcendentally) ideal. One can see why Kant might have felt obliged to refute the claims of a theory according to which knowing subjects were neutral with respect to those features of objects which made the world and objects in the world, knowable. Kant's answer to the question under what conditions knowledge is possible, is to refer to the possibility of establishing synthetic a priori knowledge and certain 'necessary' structural truths about the world, while Leibniz's response (although Leibniz paid such scant attention to epistemology that it is highly improbable he would even have raised such a query) would be that knowledge is possible because the world consists ultimately of the sorts of entities which make it knowable. It is true that Leibniz could also have said that knowledge is possible because there is a pre-established harmony between the world and our cognitive faculties; this may even be defensible but I shall, for the purposes of this essay, disregard this claim of Leibnizian realism on the ground that it is associated with the idealist strain in Leibnizianism

and this I reject (as shall be shown later). Kant's thesis to the effect that the world is a world of appearances and that we know things in the world according to their appearances implies that we do not know things (as Leibniz would have it) in accordance with the way they really are; it follows from this that Kant's doctrine of the thing in itself and the metaphysics of transcendental idealism in general ought not to be excised (as Strawson and others suggest) from Kant's theoretical programme without due consideration of their function within the context of this problem. It is clear that Kant's whole programme was designed to steer a safe passage between scepticism and dogmatism and this could only be achieved if transcendental idealism has both an ontological and an epistemological interpretation. The thesis that the world is a world of appearances is an ontological thesis; the thesis that we know things in accordance with their appearances is an epistemological thesis and together they form the core of Kant's critical enterprise. To avoid one for the other (usually ontology for epistemology) can only lead to a failure to confront the problem of how objective knowledge is possible, and if it is possible, whether the conditions effecting its possibility are realized. This, as I see it, is the central problem of the foundations of objectivity. Is it objects or our thinking about objects that determines what Kant calls the 'order of the world'? To argue that it is our thinking about things that is the

source of the world-order is equivalent to arguing that the grounds of objectivity lie in the nature of knowing subjects, that appearances are connected by rules which the "connecting faculty prescribes" alone. (B164) In Ch. I, I attempt to detail this argument by examining the claims of transcendental idealism and the justification required to make good these claims. If the relation between thought and reality is anything like Kant and those who follow him, maintain it is, then, discoveries concerning the nature of thought are very likely to tell us something about the nature of reality. Why, after all, is it that facts about the world and about the nature of things can be had from our conceptual schemes? Kant's explanation, as we shall see, is to ground the relation between thought and reality in the nature of the thinking subject, by means of transcendental necessity. And we shall see that this answer presents Kant with serious ontological problems.

The purpose of Ch. I is to provide an interpretation of transcendental idealism with respect to the problem of objectivity. The central thesis of transcendental idealism is that the foundations of objectivity lie in the nature of the subject; it is this claim which creates problems for Kant's system.

My aim in Ch. II and in Ch. III is to demonstrate in some detail the specific ontological problems which arise as a result of Kant's theory of objectivity. If objectivity is defined in terms of the nature of subject-

diversity than our ontology shall be limited to and by, the forms of the knowing subject. This amounts to permanently locating our ontological perspective within the domain of the knowable created by the conditions of human subjectivity. I shall be concerned to show that there are at least two kinds of entities which cannot be accounted for by the ontology of transcendental idealism, namely, moral agents (persons) endowed with the power of spontaneity and living things or organisms. The latter as discussed in the Critique of Judgment, is the subject of Ch. III. The argument in these two chapters is that Kant's struggles with the problem of freedom in his moral philosophy, and with teleology with respect to living things, show that Kant's theory cannot account for ontological diversity. Since the form of human subjectivity determines the ontological horizon within which objects can be known, only those objects satisfying the requirements spelled out by the categories of CPR will qualify as possible objects of experience. Those kinds of things falling outside the framework specified and legislated by the categorial framework of CPR are consequently legislated out of possible experience. Any metaphysical theory of reality (which is how I understand both transcendental idealism and Leibnizian realism) which has these implications must be considered unacceptable. In Ch. V I attempt to reinforce this argument against the claims of transcendental idealism with a separate argument designed to show that Kant's argument for

the transcendently ideal nature of the matter of appearance in the 'Second Antinomy' fails to establish that matter is mere appearance.

If the claims of transcendental idealism are rejected then we must look for an alternative theory of the nature of reality - from the perspective of philosophical theory - with which to account for objectivity in such a way as to allow for ontological diversity. In Part Two of this essay, and in Ch. IV in particular, I present a case for adopting something vaguely resembling Leibnizian realism. To begin with, in Ch. IV I argue that the real debate between Leibniz and Kant, that is, between some form of Leibnizian realism and Kantian idealism, is an ontological one. Leibniz, like Locke, maintained that the foundations of the world-order lie in insensible entities. Locke located such grounds in the spatial configuration of things whereas Leibniz accorded unconditioned reality to forces as the centers of activity. Because Kant thought that Locke could not show the connection between the insensible essences of things and their manifest properties, Kant assumed that the grounds of the world-order could not be located in matter or anything pertaining to matter. This connection must always remain opaque, to our discursive intellects at least. The problem then is to find some source of the known order of the world which would not be indiscernible and Kant's solution here constitutes the heart of the critical philosophy: to locate the grounds of

the world-order, the source of the order of appearances, in the transcendental unity of apperception. We are thus provided with a justification of our knowledge of appearances. But, first of all, Leibniz does have an account of the connection between appearances and their origin or source, namely, substantial entities whose living forces constitute their being and the being of all that is. Secondly, Kant's own account (as we would now expect from transcendental idealism) fails to show that there is something other than mind which we come to know through the categories and principles, for if the transcendental unity of apperception or its functional equivalent is the source of appearances, then, what is the force of the claim that we possess knowledge of an objective world? As Leibnizian realism does provide an account of how substantial entities ground phenomena, and, as I reject the often suggested claim to the effect that substantial entities, entelechies or monads, are no more than entities in a phenomenalist world of fleeting perceptions, the Leibnizian theory would seem to be the more promising to use as a basis for the construction of a possible ontology. Also, I try to show in this chapter that Kant's claim to the effect that Leibniz blurred the distinction between sensibility and understanding is, at best, inconclusive, and that these epistemological differences can be seen to disguise an underlying ontological debate.

To accept a Leibnizian account of the grounds of

appearances is to accept that there exist in the world entities which are the source of the world-order, and that such entities must a fortiori, be unconditioned. In Ch.V my purpose is to demonstrate that by coupling this Leibnizian account of the grounds of objectivity as lying in unconditioned entities, with the derivation of the legitimacy of the unconditioned within the domain of science, a derivation effected by Kant's account of the formulation of the ideas of reason in CPR, it is possible to argue that (1) science presupposes the existence of things in themselves for its possibility and (2) science must have the unconditioned as its goal because the unconditioned is the source of the physical necessity which binds together our empirical laws and our empirical theories into a system. And as Kant has a theory according to which systematic unity with respect to laws of nature and empirical theories is the criterion of empirical truth in science, we arrive at the conclusion that the possibility of a science of nature depends on there existing some unconditioned entity in the world which is necessary to the order of the world. If we accept transcendental idealism, then we must admit that a complete science of nature is impossible for the unconditioned can never enter into real causal interaction with the conditioned. We also see that the truth of transcendental idealism seems to depend more on the fact that knowledge of the unconditioned is impossible than on the correlative ontological claim that unconditioned entities

are the condition of the concept of an object. The process of

are necessary, or may be necessary to the world-order. Kant thought that unconditioned entities could not enter into real interaction with conditioned entities for to do so they (unconditioned) would become conditioned. This is always the argument that Kant offers with respect to the unconditioned and it derives from his conviction that unconditioned entities could not exist within the world but only outside the natural order of things. There is no reason, however, to accept this position especially if we can show that Kant's argument in the 'Second Antinomy' to the effect that unconditioned entities (simples) cannot be met with in experience (and by implication, can have no ontological significance as well) fails to prove indirectly the truth of transcendental idealism with respect to the matter of experience. Indeed, as we shall see in the final chapter, Kant's postulated forces of attraction and repulsion are unconditioned, and if transcendental idealism is false, Kant's attempts to characterize these fundamental forces as transcendently ideal fail.

Throughout the various chapters I will have indicated that Kant's categories are the specifications for the concept of an object in general, that is, for the concept of an object operative at the most basic and minimal level of experience. As such the categories describe the minimal and necessary features which any object must possess. This alone is insufficient to guarantee the objectivity of the categorial framework for we have as yet only a partial specification of the concept of an object. The process of

specifying the concept of an object, filling it in, as it were, is equivalent to discovering whether there exists those features of the world which can ground objectivity, i.e. to complete the specification of the concept of an object. And if transcendental idealism is false, this means developing an ontology based on the unconditioned, thereby providing an account of the grounds of objectivity which does not rely on showing a concept's objective validity by means of transcendental necessity. In the final chapter I make an attempt at outlining in a very tentative fashion, the basis for such an ontology in terms of the unconditioned forces of attraction and repulsion postulated by Kant in the MFNS. If the categories can receive complete specification only by being filled out at the empirical level, and if this amounts to showing that the objectivity of the categorial framework can only be established by our knowledge of nature in particular, then we are entitled to construe the categories as ontologically necessary. As Heidegger has said, the categories are really 'anticipations' of objects, specifying in advance the ontological structure of the world. This of course makes perfect sense for a metaphysical theory of the nature of reality which takes the unconditioned as the ground of objectivity; for such an ontology would be based on the unconditioned, in this case, forces, and the function of a categorial system within such a theory of ontology could only be to prescribe what such an ontology would be like.

According to Kant's epistemology, all knowledge is necessarily knowledge of appearances and appearances are phenomenal and conditioned while the real is noumenal and unconditioned. If, as I have argued, science has knowledge of the unconditioned as its goal, and the unconditioned is always unknown and noumenal, it follows that science is the continuous search for the unknown. In this final chapter my task is to complete this argument in so far as is possible and in outline only, by suggesting that Kant's own conception of forces as the fundamental constituents of matter is a plausible candidate, from the philosophical perspective, for the unconditioned. The unconditionally real (i.e. Leibnizian) are forces understood in terms of intensive magnitudes; only the Real, as Kant says in the Anticipations of Perception, has intensive magnitude and only the real as such has Being. As we shall see, intensive magnitudes resist classification as either primary or secondary properties; primary or secondary properties cannot be classified as the real for the real is itself (as that which possesses being) the ground of the manifest properties possessed by observable things. Forces as the unconditioned can be described as monad-like in so far as forces (and their point centers of influence) are not in space and time (in Kant's sense of 'in' where something must be observable or constructible or picturable) while they condition everything that is in space and time. Forces do not, however, share that feature of Leibniz's

original conception of monads according to which substances do not enter into real causal relations with one another; forces, as the parts of matter, are unconditioned, but not in such a way as to make causal relations among substances impossible. Nor, of course, are forces 'reducible' to series of changing perceptions in each monad; on this idealist reading monads are incapable of producing transeunt forces which can be said to actually cause changes in the states of the entities existing outside the entities producing the force in question. It is not crucial to my interpretation of forces as the fundamental 'stuff' of the world that they be characterized as monads; it is simply an appropriate description of forces as a kind of entity in view of the unconditionally real ontological status of monads in their original Leibnizian form.

A possible ontology based on the unconditioned as here conceived, must incorporate both a theory of reality which takes up the perspective of knowledge and a theory of reality from which the object (physical world and the laws pertaining to it) is viewed from the perspective of being, or, from the perspective of the object. This brief sketch then, provides some idea of the kind of ontology required to complement the structural truths with respect to the world specified by the categories, principles and ideas, an account which can be supplied not by transcendental idealism but by Leibnizian realism.





Is Kant successful in CPR in showing that the theories of Locke and Leibniz, the two realists he was most concerned to refute, are false? Accepting that transcendental idealism is Kant's general programme for demonstrating the falsity of these theories, I shall attempt to answer this question in the negative by arguing that transcendental idealism, as a theory of (the foundations of) objectivity, cannot account for the ontological diversity - the different kinds of entities which there are - in the world. This is the task of the first three chapters.

2. The ultimate goal of the First Critique is to demonstrate the possibility of objective knowledge, to spell out the conditions which provide for objective knowledge in general and a science of nature in particular. In a sentence, Kant's approach is to specify the structure, or nature of, human knowledge by attempting to show what general features the world must possess, any world must possess, if it is to be comprehensible. That this is Kant's central purpose in the First Critique is commonly recognised in the literature. There is, however, a second and correlative aim in the First Critique, namely, to refute the claims of transcendental realism the most important proponent of which was Leibniz. The defining thesis of transcendental realism is that there exists within the world entities which are, to use Kant's term, unconditioned, or, to appropriate the main thesis to Kant's problem situation,

that the world itself as a totality exists as an absolute or unconditioned totality. Given Kant's aim to explain the nature of objectivity and the possibility of objective knowledge through the categories, why did he think it so urgent to demonstrate that the question of unconditioned entities or unconditioned totalities, the problem of their existence, was inscrutable to human understanding and that theories (transcendental realism) which attached explanatory roles to such entities with respect to some aspect of the known world, were false? Surely Kant, in the 'Dialectic' of CPR, was not simply performing an historical service in exposing the dialectical error of all preceding meta-physical thought, transcendental realism included. I suggest that there is a genuine problem here, a conflict between two competing theories of the nature of objectivity, transcendental realism (Leibnizian realism) and transcendental idealism. The defining thesis of transcendental idealism can be straightforwardly put as follows: the foundations of objectivity lie in the nature of the knowing subject and it is the subject's contribution to the overall cognitive situation (in the form of the categories) which secures the possibility of objective judgments. If we define the transcendental realist position relative to the question of the foundations of objectivity, it can, I think, be put as follows: the foundations of objectivity lie in the nature of the object known and the objective validity of judgments is secured, ultimately, by there being

certain kinds of entities possessing certain kinds of properties.

If the claim that the foundations of the objective world-order lies in the nature of the subject is (one of) the central claim(s) of transcendental idealism, then to argue, as Kant does, that the known world is transcendently ideal, is just to maintain that the objectivity of objects is ultimately a function of knowing subjects, i.e. that the known world is ultimately (= transcendently) ideal. For those conditions of experience which make objectivity possible are contributed by the subject and to describe these categorial features as transcendently ideal is to seem to argue for, or to beg the conclusion that, without contributing subjects, these objectivity features would not exist. Transcendental realism and in particular, Leibnizian realism, provide for a theory of the nature of objectivity which is a direct challenge to Kant's; for if the nature of objectivity is such that the foundations of the latter are to be sought not in the knowing subject but in objects known, then those general characteristics and features which make knowledge of objects possible are to be sought in the objects themselves. And while knowledge of the features which objects possess is obviously dependent on there existing knowing subjects, the possibility of knowledge is not.

Thus, Kant's question concerning the possibility of objective knowledge can be regarded as providing an

interpretative framework for both transcendental idealism and transcendental realism. The transcendental realist wants to argue that the possibility of objective knowledge can be explained only by reference to the nature of the things known, i.e. by comprehension of those properties which make a thing the sort of thing it is. It follows from this that questions about the grounds of objectivity are questions about the real nature of things, the basic 'stuff' of the world, whether this be conceived as atoms, corpuscles or monads. It is not necessary that the transcendental realist believes knowledge of the fundamental constituents of the world to be possible in order to think that it is the real nature of things which explains their manifest properties. In fact, both a transcendental idealist such as Kant and transcendental realists like Locke and Leibniz, thought that knowledge in accordance with a thing's nature or essence was not possible for finite intellects like ours. Consider however, the conclusions drawn from this by each of them. Leibniz claims the fact that we cannot know the true nature of things implies a cautionary epistemological attitude towards things as we do know them and therefore we get Leibniz's very provisional-sounding description of phenomena as 'bene fundata'. Leibniz's tone about our knowledge of phenomena throughout his career is provisional, not sceptical or even semi-sceptical. The fact that we cannot claim knowledge of things according to their natures does not imply that what

we do know of things, their manifest properties, is not to be accounted for by reference to their real natures. There is always the lingering suspicion that for Leibniz the day might come when such knowledge would indeed be possible, a suspicion prompted no doubt by Leibniz's intense preoccupation with dynamics and his formulation of a force theory of substantial entities at the physical level. At the metaphysical level, these substantial entities composed of 'vis viva' become monads, but even here, where Leibniz moves, as Buchdahl has said, with an almost reckless abandon, we can read him (Leibniz) as arguing that, since the real grounds of things is not manifest we shall have to characterize our theorizing with respect to such grounds as ideal (i.e. we will always seek for a knowledge of the real natures of things but will never attain it. And this is consistency, not anti-realism.

Locke, without the metaphysical grandeur of Leibniz, argues in just this way as well. For Locke the grounds of the world are to be found in the insensible (atomic, monadic) parts of things implying a limitation on what is knowable for rational beings. The real essence of a thing, that which makes a thing the sort of thing it is, is insensible; more precisely, it is the configurations of the insensible parts of things which constitutes their real essence. As with Leibniz, so with Locke, we have the physical and the metaphysical overlapping, for Locke writing against the background of Newton's dominating influence,

the insensible parts of things are really atoms. Committed as Locke was to an atomist cosmology, he could yet see no way in which the insensible could be shown to be the ground of the sensible; thus, knowledge of grounds became for Locke as well, ideal knowledge. In Bk. III of the Essay Locke states: "The other and more rational opinion is of those who look on all natural things to have a real, but unknown, constitution of their insensible parts, from which flow those sensible qualities which serve to distinguish them one from another, according as we have occasion to rank them into sorts, under common denominations." Bk. (III, CH.3 Sec. 17).

Both Locke and Leibniz are agreed that the lack of complete knowledge of the essence or nature of objects implies a lack of knowledge about the grounds of objectivity. Here, Kant's transcendental idealism stands out in striking contrast. Kant also wishes to deny the possibility of a knowledge of essences or natures because he thinks such knowledge necessarily involves things-in-themselves; however, unlike his two predecessors, Kant does not think that a lack of such knowledge involves or entails, a lack of knowledge of the grounds of objectivity. Knowledge of the grounds of objectivity, on Kant's account, is not knowledge of the real nature of things or their properties but a knowledge of those features of things which have their origin in the knowing subject and are essential only in the sense that any world which is to be

comprehensible to us, must possess them. And as usual with Kant, this move is achieved by altering the terms of the problem, viz. we no longer talk of knowledge of objects but of the possibility of knowledge of objects. Thus, questions pertaining to the foundations of objectivity are questions involving the possibility of transcendental knowledge. Knowledge of the foundations of objectivity becomes, for Kant, transcendental knowledge.

3. To deny the possibility of knowing things in accordance with their real natures while maintaining that this need not entail even a partial scepticism towards our knowledge of the foundations of objectivity, does not, initially at least, seem a very promising position. For, if questions about the foundations of objectivity are questions about how, ultimately, objective knowledge is possible and what conditions have to be met for it to be possible, then surely we are entitled to demand some explanation of whether the requirements for objective knowledge are satisfied and, if so, how they are. Leibniz and Locke, when faced with this demand, can (I am not saying they would) offer an explanation in terms of the nature of the basic constituents of the world, substantial entities or atoms. Not only does Kant think that such knowledge of the nature of things is not possible, he thinks that human knowledge does not concern, or is not of, things at all. That is, Kant wants to argue that what knowledge we

do have, however incomplete, however partial, does not involve things as they really are. Locke and Leibniz, even though they did not think complete knowledge was possible, did not on that account deny that what knowledge we did have could be explained in terms of the nature of things. For Kant is forced to admit that ultimately we cannot talk of knowledge of things at all, only of appearances; this is a consequence of transcendental idealism. According to transcendental idealism, knowledge of things in themselves is, in principle, ruled out, thereby making even partial knowledge of things impossible. It is all or nothing and thus Kant's insistence that our knowledge is knowledge of appearances, not things in themselves. Consequently, Kant's answer to the question concerning the grounds of objectivity could be that the foundations of objectivity lie in the nature of appearances; but this is equivalent to saying that the foundations of objectivity lie in the knowing subject for the 'nature' of appearances is just those features of the world contributed by the knowing subject and which make for the possibility of an objective world in the first place. Ultimately, knowledge is knowledge of appearances since the features which any comprehensible world must possess are contributed by the knowing subject. Thus, the grounds of objectivity lie in the nature of the knowing subject. The epistemology of transcendental idealism has the effect of fully committing Kant to the thesis that we really only

have knowledge of appearances, not things in themselves; Kant appeals to our common sense intuitions to mitigate the force of the epistemological commitment to this thesis, by pointing to the empirically real aspect of the everyday world and its objects. But the appeal must be judged a failure for once the question of the foundations of appearances is raised, the distinction between the empirically real and the transcendently ideal becomes irrelevant. Consider: Questions of the foundations of objectivity are questions of how, ultimately, objective knowledge is possible and Kant's answer to this is that ultimately such knowledge is transcendental, i.e. can only be judged objectively valid if the essential, necessary requirements for establishing such validity reside in the nature of the knowing subject. Since knowledge of the foundations of objectivity is transcendental knowledge and since transcendental knowledge is true of or applicable to, the world considered from the perspective of transcendental idealism only, within empirical reality there can be neither essential or necessary knowledge, nor essential or necessary existents. The world of science belongs to empirical reality and thus laws of nature, general or particular, are for Kant empirical; it must be said though that Kant is indecisive, to say the least, about the status of laws of nature, e.g. Newton's laws, which are described as being both a priori and a posteriori. The point can, in effect, be put as follows: the strengths of the principles guiding

and structuring Kant's critical project derive from his central thesis of transcendental idealism and related thesis, e.g. that minds constitute the known world. Outside the context of transcendental idealism these thesis are quite ineffective and their limitations are quickly exposed. The problem which is rumbling beneath all of this is Kant's mishandling of questions pertaining to ontology. Kant exploits to the full his insights into the transcendently ideal nature of the known world, i.e. the world considered from the perspective of judgment or knowledge but because he does not really want to say that the world is, i.e. from the perspective of the object or from the perspective of ontology, transcendently ideal (but because of his commitment to the epistemology of transcendental idealism cannot say that he does not want to say this) we are offered next best, the empirically real (rather than ultimately real) nature of the world. This severing of ontological and epistemological locutions is a feature of Kant's work from CPR on and its artificial sounding note can be heard once the cracks in Kant's theory of objectivity begin to appear.

4. This separation between questions ontological and epistemological is one which some recent Kant commentators have inherited. We need only witness the jettisoning of Kant's doctrine concerning things in themselves from consideration of his work in general and in particular,

when considering the significance of his theory of transcendental idealism. Now, if my contention that at the core of Kant's whole programme there lies the problem of (the foundations of) objectivity, is correct or, at least tenable, then the tendency to deliberately ignore or as Strawson says, excise, the metaphysics of transcendental idealism, is a mistake. At least it is a mistake if one believes that the problem of objectivity as explicated is of genuine significance and that the overall theoretical interests of realists like Locke and Leibniz demonstrate the centrality of this problem. Kant wants to argue that our knowledge of the world is not dependent upon, or derived from, things in themselves as against realists like Locke and Leibniz for whom the nature of knowledge is derived from the nature of things (=things in themselves). Thus Kant's thesis that we know appearances only and not things in themselves means that he must provide some account of the possibility of such knowledge apart from things in themselves or without consideration of the natures of different types of objects. In other words, to the question, 'What is the origin of the objectivity of objects?', Kant has one answer and Leibniz and Locke have another. To refuse to recognize the significance of Kant's doctrine of things in themselves (even if one thinks this simply involves Kant's denial of their existence or efficacy in knowledge) is to refuse to acknowledge the central philosophical significance of this question and

and the problem with which Kant struggled vis a' vis the Leibnizians and the Lockeans.

5. According to Kant, the world is empirically real only within the context of transcendental idealism. This basic doctrine of Kant's is most explicit in the 'Fourth Paralogism' of CPR. Here Kant criticizes idealism understood not as the denial of the existence of external objects but as the expression of uncertainty regarding their reality. It turns out that Kant is presenting a criticism of representationalist theories of perception, or more specifically, the 'veil of perception' doctrine; objects are perceived, not directly but indirectly through perceptions from which their (the objects') existence is inferred. Immediate knowledge of external objects is impossible since one's perceptions, as it were, are placed between one and the external objects which are their source. As such, perceptions are the link with the reality of external objects and the barrier preventing immediate contact with external reality. This is one of the particular problems which transcendental idealism is designed to avoid; Kant thinks that, if the problem of perception is constructed in this way by the idealist, then scepticism is inescapable, indeed, it's logically demanded. The crucial difficulty, Kant says, is that the idealist locates reality in externality, viz. the first assumption is that the reality of external objects lies outside the

subject's power of representation, and this is a mistake; for us (for beings with the powers and limitations of human cognition), reality is representational. As Kant states, "...representation and intuition presuppose space, and reality in space, being the reality of a mere representation, is nothing other than perception itself. The real of outer appearances is therefore real in perception only, and can be real in no other way." (A376) The success of Kant's argument against idealism rests on showing that the having of perceptions of events entails the truth of the proposition that something happens in space and presumably, Kant believes that the idealist would grant that he experiences perceptions. Once it is recognized that the mere having of perceptions presupposes space (for perceptions are events of a kind and events take time and happen in space) there are no grounds remaining for distinguishing real from ideal perceptions. Whatever reality is in itself, it can only be known or, can only present itself to us in space through perception. Accepting that externality must be (re) presented in space through perception, what is (re) presented is, and can only be, the real. One has the suspicion here, where Kant is at his most phenomenalist, that he is really asking how anything other than what is presented in perception could seriously be considered as candidates for the real; for appearances are representational and external objects are appearances (A370) or external objects are just a "species of representations" (ibid), therefore, external objects are essentially

representational. Kant's purported refutation of the suggestion that we cannot be certain of the existence of the external world is achieved by exploiting the distinction between things in themselves and appearances. If the world of external objects was a world of things in themselves there would be no legitimate way of inferring its existence; it is because the world is a world of appearances, i.e. a product of the powers of human cognition, that we can be certain of its existence. We impose those features of the world which make it knowable in the first place, such as the causal argument of the Second Analogy. Thus the argument of the Fourth Paralogism is supposed to guarantee our faith in the existence of the external world. There is however, another theme or intimation of a theme, running through the Fourth Paralogism, viz. the attempt to establish the reality of the material element of perception. But what is the material element of perception? Is it not simply the external objects as represented in space and time? The answers throw up the strong realist flavour of the Fourth Paralogism. The material element of perception is not the external objects represented in space and time but the matter of sensation; "It is sensation ... that indicates a reality in space or in time ..." (A374) External objects qua appearances do not cause sensations, only physical objects or parts thereof are capable of causing bodily sensation. The real in space which causes sensation is

the physical matter of external objects and it is this physical matter (= the material element) which makes possible sensible intuition, as Kant points out: "... perception is that whereby the material required to enable us to think objects of sensible intuition must first be given." (A374; emphasis mine) Elsewhere, in the 'Anticipations of Perception', it is the real which corresponds to sensations "that represents that something the very concept of which includes being ..." (A175 = B217; cf. also A143 = B183). Being, not existence, corresponds to sensation in the world but this argument shall be pursued further on in the context of Kant's theory of matter; here my purpose is to draw attention to the realist element in Kant's thought, especially prominent where Kant is trying to use transcendental idealism to refute those doubting the certainty of the existence of external objects. There is a strain here which the empirically real/transcendentally ideal distinction cannot accommodate. If, from the point of view of judgment, we can answer the sceptic's doubts about the existence of the external world by showing that the external world is not completely independent from the knowing subject, i.e. by demonstrating the truth of transcendental idealism, then, from the perspective of the object, we must surely be entitled to expect that the fact that the world does not have complete autonomy from the knowing subject - a fact entailed by, or implicit in, transcendental idealism - should have consequences for

ontology. If the fact - if it is a fact - that the world is a world of appearances, is effectively neutral with respect to the kind(s) of entities (and their natures) there are in the world, that is, with respect to ontology, then what is its significance? Actually Kant's theory that the world is a world of appearances is not so insignificant but my point still holds. Kant's theory of the empirically real/transcendentally ideal can be expressed as follows: because our world is a world of appearances we can be certain that there corresponds "to our outer intuitions something real in space". The real, however, corresponds to sensation, and recalling the 'Anticipations', is a measure of the degree of being in the world, or, as the case may be, complete non-being. It is the real in space which for Kant is the ultimate cause of sensation; the real possesses, as it were, a degree of being which can be measured or approximated by us through the strength of the sensation which is its effect. The presence of this degree of being in an object is called its 'intensive magnitude'. I shall be discussing intensive magnitudes in Ch.VI ; here, I want to note that if the real in space which corresponds to our outer intuitions (A375) is, or can be shown to be, the real which in "the pure concept of understanding .... corresponds to sensation" (A143 = B182) and as such belongs to the realm of being, then it is not merely empirically real; it is ultimately real, part of what there is and no attempt to transcendently idealize the real can succeed

unless we want to conflate the realm of being and the realm of knowledge.

Two points need to be made here. First, Kant recognizes that the real pertains to being not knowledge and that without the real or the postulation of something (forces) as the real, there would be nothing describable as actual or inactual. Kant expresses what amounts to the same thing in the 'Schematism':

"Reality, in the pure concept of understanding, is that which corresponds to a sensation in general; it is that, therefore, the concept of which in itself points to being (in time). Negation is that the concept of which represents not-being (in time). The opposition of these two thus rests upon the distinction of one and the same time as filled and as empty." (A143 = B182)"

Reality (being) and negation (non-being) represent respectively, time filled and time empty, the former where something is, the latter, where there is nothing. Time filled is not represented by what is knowable but by that in which there is something to be known. As we might expect, Kant does not want to have to say that the real belonging to things and which corresponds to sensation is the ultimately real, i.e. that which determines the thinghood of a thing; even if the real is what determines the being of a thing in time, time itself is but a form of intuition" ... and so of objects as appearances, that in the objects which correspond to sensation is not the transcendental matter of all objects

as things in themselves (thinghood, reality)." (ibid) But why should we not regard this last statement as one of Kant's many token disclaimers with respect to things in themselves as what is in principle unknowable (and therefore, unsayable)? We shall not be able to accept it in any case for it is a straightforward statement to the effect that the real which determines the thinghood of things and presumably, therefore, all that exists, is in us, the perceiving subjects, for time is the form of inner sense. Nor can Kant accept this for it is a mockery of his outer sense doctrine and leaves him with a theory to the effect that the world is really an auto-affection of the soul. Thus, if we reject Kant's token disclaimer, not because it is a token disclaimer but because its consequences are clearly unacceptable, then we can regard the relation between the real in objects and sensation at its face value, i.e. without the trappings of transcendental idealism and the empirical/transcendental distinction that it entails.

The second point I want to make is that there is in CPR the intimation that the real in space, that corresponding to sensation, is indispensable to there being anything to be known (by means of the categories) at all. We have seen that the real in space and time, whatever it is, is what fills space and time and both in CPR and the Meta-physical Foundations of Natural Science (=MFNS), matter is what fills space. Matter, however, is also the real corresponding to sensation; thus has Kant left clues to the

discovery of what he cannot say directly because of transcendental idealism, viz. that the real is (perhaps) some property (microproperty) of matter. This makes perfect sense even within the context of Kant's theory of sensibility for sensible intuition is empirical in so far as it is affected by the actual through sensation, in space and time (B147). The empirical effects of the actual in space and time are the various qualities of sensation, e.g. colours, tastes but Kant makes it clear that the real in space is not a secondary property or reducible to a secondary property, if anything, the real is what underlies such properties: "The quality of sensation, as for instance in colours, taste, etc., is always merely empirical, and cannot be represented a priori. But the real, which corresponds to sensations in general, as opposed to negation = 0, represents only that something the very concept of which includes being...." (A175 = B217). And the real has being which is represented (by affection) through sensation. Thus, if anything at all can be postulated as the real it will not be captured in statements about secondary qualities or statements about experiencing colours, tastes, etc. because Kant does not think secondary properties belong to objects or are properties of objects. This makes perfect sense for something postulated as being that without which nothing would be actual; it itself is not empirical and therefore not expressible with empirical concepts and in empirical statements. That the (ultimately) real is not empirical or observable fits the conception of

such entity as viewed from the perspective of modern physics, with the exception of quantum physics. It also fits the vaguely Leibnizian characterization of such an entity as the fundamentally real constituent of the universe, once the idealist overtures of Leibniz's metaphysics are rejected. It is this type of entity which might satisfy the complete requirements of a theory of the foundations of objectivity. In MFNS, Kant presents a force theory of matter which can provide a physical basis for such an attempted reconstruction. In its original Kantian form it won't do because of the framework of transcendental idealism within which it is cast and transcendental idealism is, I am arguing, riddled with difficulties over the foundations of objectivity. Thus, something else, as a general philosophical underpinning and structure, some alternative theory is required. It is this requirement that I believe a theory in the tradition of Leibnizian realism, with the account of the foundations of objectivity that it entails, can satisfy.

6. Kant's argument against idealism amounts to a formulation of transcendental idealism: externality must be (re) presented in space through perception; all candidates for the real must therefore be (re) presented in space through perception (since, literally, there is no other way for anything to be for human cognition); therefore, we have no option but to accept that which is in fact (re) presented

in space through perception, as the real. Since however, space is the form of outer sense or, alternatively, space is really, 'in us', we can be as certain of the existence of external objects as we are of the changing states of inner sense I (= the objects of inner sense). The objects existing in space, with spatial configurations, are species of our representations in that they are a kind of representing, to wit, they are a kind of representing in the only mode in which an object can be an object for us. It would seem then, on this account, with respect to our knowledge of external objects, we know them as empirically real, but with respect to the objects simpliciter, they are not really external, at least we can't say they are, for nothing can be said to exist outside space, i.e. outside our forms of perception. This is what it means to describe objects as transcendently ideal. The epistemological thesis of empirical realism is implied by the ontological thesis of transcendental idealism: that we know objects as empirically real is a consequence of our interpreting them as transcendently ideal. If we choose to reject this ontological interpretation of the world by ignoring the metaphysics of transcendental idealism then the strongest theoretical defence for the claims of empirical realism as an epistemological thesis is no longer available. In Kant's philosophy, accepting that transcendental idealism is the central controlling element therein, ontology is logically prior to epistemology. Ontology pertains to the nature

and being of things in contrast to questions regarding our knowledge of things; a fully fledged or complete theory of transcendental idealism must address itself to questions concerning ontology. In order to strengthen this contention still further, I offer the following brief argument.

Following Sellars 2, I shall refer to empirical objects as representeds, rather than the usual 'representations'. Within Kant's theoretical framework, the knowable (=what it is possible to know) is structurally defined a priori by the categories and the forms of sensibility; it is because the limits of human cognition are determined on a priori grounds (residing in the nature of the knowing subject) that other possible modes of cognition of objects, modes of knowing possessed by beings whose constitutions differ (in varying degrees perhaps) from ours, cannot be discounted. For experience could conceivably produce beings for whom the same objects were perceived in a different mode; indeed, our own human perceptual apparatus has been altered within the context of experimental psychology, to effectively create a mode of cognition so abnormal as to make a normally recognizable perception unidentifiable to the perceiver. The point is that, because Kant's argument for the limits of human cognition rest on a priori grounds, it is vulnerable to the exigencies of experience and the de facto indeterminacy of future conditions. Thus, on the basis of Kant's arguments we cannot claim to have exhausted the possible modes of

knowing things but it is this conclusion that Kant tries to avoid by describing our knowledge of the world as a knowledge of representeds or, in his own terminology, knowledge of what is 'in us'. Kant's refusal to recognize, other than in a token fashion, other possible modes of cognition can perhaps be explained by his belief that the argument's transcendental status depended on its obtaining with universality and necessity, and to acknowledge, even as possible, other forms of cognition of objects, would seriously mitigate, if not destroy, the force of these claims. In any case, the transcendentially ideal status of the known is a result of Kant's technique of deriving their knowability from the conditions of the possibility of experience. The strength of the tie between the knowability of things and the conditions for the possibility of experience is reflected in the represented feature which things possess in the Kantian world. Kant's expressions 'in us' and 'outside us' are, as he himself states, dangerously ambiguous; however, on the basis of a close reading of the 'Fourth Paralogism', it is possible to avoid the pitfalls of the ambiguity by distinguishing sharply between the transcendental and empirical uses of these expressions. In its empirical use, 'outside us' refers to "things which are to be found in space" (A373) where 'space' is understood as that which bodies occupy; but in the Kantian framework material things are ultimately representations in space and time and the latter are

'in us' qua forms of representation, ergo, material things are really the contents of the forms of representations in us. The empirical use of 'outside us' is seen to be balanced and always kept within the uniquely Kantian perspective of ultimate idealism, by the transcendental sense of 'in us'. The latter, however, has its correlative empirical sense in which it refers to the states of representing both the material things of the world and the individual's own sensual affections (sensations, emotions). Since these states are of their own nature, represented, we are entitled to inquire as to their correlates in what has (a fortiori) not been represented, i.e. what is 'outside us' in the transcendental sense of not being representable. This set of definitions has a somewhat artificial or contrived ring when paraded forth outside their functional context in CPR; their significance however must not be lost for they are integral to the meaning of transcendental idealism and the ambiguity which surrounds them is simply a measure of difficulties at the core of transcendental idealism. Consider the following: The empirical sense of 'in us', as has been appreciated in the literature 3, represents Kant at his most phenomenalist. What hasn't been so clearly recognized is the extent to which the phenomenalist element is exploited to produce what is, effectively, the double meaning of 'in us', at the transcendental level and the empirical level. I cannot present a detailed defence of this claim but I think these

passages from the 'Fourth Paralogism' evidence a marked inability on the part of transcendental idealism to deal with the ontological problems confronting it.

"We can indeed admit that something, which may be (in the transcendental sense) outside us, is the cause of our outer intuitions, but this is not the object of which we are here thinking in the representations of matter and of corporeal things; for these are mere appearances, that is, mere kinds of representations, which are never to be met with save in us..." (A373)

Again, we find a token recognition of the ontological requirement of the (in principle) unrepresentable as a cause of the representable, followed immediately by a statement of the essentially representational nature of matter and corporeal things, i.e. phenomenalism of sorts, which Kant thinks makes the ontological requirement redundant as appearances obtain their being, as it were, through being in us. They are not just known as appearances, they are appearances.

"But it is not of this that we are here speaking, but of the empirical object, which is called an external object if it is represented in space, and an inner object if it is represented only in its time-relations. Neither space nor time, however, is to be found save in us. The expression outside us is thus unavoidably (Neither space nor time, however, is to be found save in us. The expression outside us is thus unavoidably ambiguous in meaning, sometimes signifying what as thing in itself exists apart from us, and sometimes what belongs solely to outer appearance." (A373)

Kant gives the impression here that the ambiguity of 'outside us' is somehow naturally involved in any philosophical

use of the expression, whereas in fact it is imported into the context of the discussion, to disguise it seems, Kant's ambivalence with respect to the ontological status and role of the thing in itself. If Kant was to eliminate the thing in itself completely, then he would be left with what would look very much like a theory of the auto-affection of the soul, i.e. that the known world was a product of the activity of the mind. Nor can he fully condone use of the thing in itself for to do so would entail at least a partial reification of the thing in itself, investing it with properties and powers required to meet its explanatory role as an ontological type, to wit, a type in which the known world could be ontologically grounded. Unfortunately, Kant thought that such an ontological type had to be located outside the world as the cause of the world and the grounds of the world-order; there is no reason however, why such an ontological type could not exist within the world as an unconditioned entity, possessing properties which would serve to explain existing laws of science (that is, explain why the laws of nature have the explanatory power they do have) and all other known objects in the world. The unconditioned, so conceived, would itself be unexplained because nothing exists in terms of which it could be explained at that stage in the progress of science. If a more basic, fundamental entity is discovered then it becomes the unconditioned explainer. So the particular candidate might and can change to meet the vicissitudes of discovery. Nor

need this type of entity be supersensible as Kant also seemed to think for we know there need be nothing supersensible about microphysical objects.

From this reading of the 'Fourth Paralogism', Kant seems to fall into phenomenalism as a consequence of his defence of the claim that we can be as certain of the existence of the external world as we are of our own mental states. He thus comes to adumbrate what seems to be an ontological thesis pertaining to the physical world, i.e. material things are complexes of spatial and temporal representations in individual minds. Now, for anyone who maintains this theory of objects coupled with the insistence that objects are empirically real, 'outside us' would be ambiguous indeed. Even though Kant believes that the real world is a world of physical objects, transcendental idealism obliges him to argue that the real can only be revealed, as it were, through perception and is therefore a represented real. For Kant, this claim is equivalent to the claim that we know appearances only and not things in themselves. But this claim, as Kant himself recognized, is at best a partial truth for the efficacy of the realm of things in themselves is required if man's moral nature, grounded in his unconditioned power of spontaneity, is to be explained and established as objectively real. Furthermore, while Kant recognized this fact, his attempt to explain it and accommodate its implications into his philosophy as a whole, failed abysmally. Kant postulated that man as

moral being exists in the timeless world of noumena where events can occur without causal antecedents, i.e. freely; man also exists, however, as a natural being in the phenomenal world possessing those features specified by the categories, most notably, that nothing happens without a causal antecedent and all events are in time. The noumenal world is completely undetermined while the phenomenal world is determined to the extent that it is totally predictable in principle. Man's freedom and man's determinism do not have to be reconciled because they belong to different worlds, worlds which, moreover, do not interact. As I shall be discussing in the following chapter, to seriously propose that there is no interaction between these two worlds is equivalent to affirming that they are superfluous to one another; and this fails completely to account for man's moral experience. One begins to understand how narrow are the ontological horizons of the world prescribed by transcendental idealism.

7. The central argument used by Kant to defeat the claims of transcendental realism is, in brief, that space, time and material things are representations in individual minds, and that reality is constituted by such representations. One of the difficulties of transcendental realism, Kant believed, is that it requires one to explain how ideas (of objects) in the mind come to represent veridically the absolutely independent objects in the world;

how, that is, can we be certain that our representations are isomorphic with the independent reality they are supposed to represent, without presupposing the truth of the theoretical framework of transcendental realism being argued for? (Yet another option, after a fashion, is to ask how we can translate mental state statements into physical object statements without presupposing that one set is reducible to another.)

This is one of the problems that transcendental idealism is designed to avoid as Kant argues that we really do have direct access to the empirically real nature of objects; the material world exists 'in' (= 'in us') our representations, not outside them, as we project forms of representation (space and time) on external objects. As empirically real, these forms are features of the world but ultimately, they are grounded in the nature of the subject. Kant states:

"...our doctrine (transcendental idealism) thus removes all difficulty in the way of accepting the existence of matter on the unaided testimony of our mere self-consciousness, or of declaring it to be thereby proved in the same manner as the existence of myself as thinking being is proved. There can be no question that I am conscious of my representations; these representations and I myself, who have the representations, therefore exist. External objects (bodies), however, are mere appearances, and are therefore nothing but a species of my representations, the objects of which are something only through these representations. Apart from them they are nothing... in both cases (representations

of myself and extended beings) alike the objects are nothing but representations, the immediate perception of which is at the same time a sufficient proof of their reality." (A370 - A371)

This passage is indicative of Kant's argument throughout the CPR to the effect that experience of material things and of one's mental states is possible only within representations, i.e. representations whose essential features have been derived from the nature of the subject. It is the defining predicates of human subjectivity which ground the possibility of knowledge. As the foundations of human knowledge reside in the transcendental unity of apperception and not in the nature of things known, Kant can make do with a world of "appearances as representations" by accounting for the objectivity of appearances in terms of the defining predicates of human subjectivity, space, time and the categories. It is this transcendental twist, so to speak, to Locke's theory of objectivity, according to which ideas in the mind are ultimately shown to be objectively valid by the discovery of the nature of the object they represented, that provides transcendental idealism with its credibility as a theory of objectivity. Kant seems to have thought that what I have called the transcendental twist represented a solution to the problem of demonstrating the possibility of objective knowledge. However, as we have already glimpsed, it seems that Kant has promised more for transcendental idealism than it can produce.

all types introduced by the appearance-reality distinction can be defended without the trappings of the

Let us concede for the moment that material things are "sensible representations" or, in the idiom I have adopted, representables in the minds of individuals. Is the question: 'What can be said (known) about the correlates of these representables?' a legitimate question in the present context? My answer is that the question has a defensible and an indefensible, version. If 'correlate' is meant to refer to a reality of which the representings are the appearance and which is purported to have some unspecifiable causal connection with the world of appearances, then I must say that the question leads straight into the realm of unsupported dogma. For we are in effect being asked to entertain the chance possibility of there being two worlds, one a world of observable, law-governed appearances, the other a world of non-observables about whose natures we can at best hypothesize. There is however a less incredible interpretation of the question. Representations, insofar as the material world exists or has its being in them, can be conceived as having correlates. These could be typified as: (1) what is constituted in the representation; (2) what is, as a matter of fact, not constituted in the representation but could be, e.g. assuming the contents of some representations to be material objects, some property of material objects not yet discovered and thus not known to exist but may be in the future. What this suggests is that the different ontological types introduced by the appearance-reality distinction can be defended without the trappings of the

two-world theory. Justification for countenancing ontological types (kinds) should be derived not only from epistemological considerations with respect to the conditions of knowledge; if different kinds of entities exist then the concepts required to express the different natures of these entities would be expected to have their origin in the kinds of entities they express. As it stands, Kant's distinction between the way that a thing appears and the way that a thing really is apart from our representing of it, provides for the possibility that the thing as represented is non-isomorphic with the thing as it exists simpliciter, since the latter as an ontological type, is disengaged from the realm of knowledge. If, however, we restore ontological respectability, so to speak, to the concept of thing in itself (= thing as it exists simpliciter) by arguing that it has a semantical function to serve, i.e. there exists types of entities which require just such a semantics, then it can be vindicated. I cannot in this essay pursue the question of how semantics and ontology are related, in anything like the detail it requires, but I shall in Ch. 3 indicate just how transcendental idealism doesn't possess the ontological diversity required for science and teleology, precisely because its semantics licenses only one kind of entity.

The non-isomorphism which seems to be implicit in Kant's original appearance-reality distinction is what lends plausibility to the world-behind-the-scenes inter-

pretation of the thing-in-itself. To offer a description of an object as existing simpliciter allows for the possibility that a thing, a property, which at a given time is unknown to us, may yet be discovered. Kant's interpretation of the appearance-reality distinction fails to allow for this possibility, for things in themselves are in principle not knowable. Anything not representable under the conditions of space, time and the categories, is eternally unknowable; this is a structural truth of Kant's system and it cannot be modified to allow for the recognition of new discovery and changing scientific knowledge. I shall be presenting an argument in Ch. , following Peter Krausser, to the effect that Kant's theory in CPR implies the necessity of postulating unknowable things in themselves if scientific inquiry is to be possible.

It will become apparant as this essay proceeds, that Kant's concept of the thing in itself can, indeed, must be vindicated if anything of Kant's theory of objectivity, in its original form, is to be salvaged. This will involve a rejection of transcendental idealism, at least in its original Kantian form and the endorsement of a realism the historical precedent for which is Leibniz.

8. The problem of correlating representations with something which can be described as existing simpliciter worried Kant as late as the writing of the first edition CPR. At 104(A), referring to the "object of

representations", Kant says:

"We have stated above that appearances are themselves nothing but sensible representations, which, as such and in themselves, must not be taken as objects capable of existing outside our power of representation. What, then, is to be understood when we speak of an object corresponding to and consequently also distinct from, our knowledge?"

Kant put this very same question to Marcus Herz in the famous 1772 letter where Kant claimed that the problem of the relation between knowledge and its object was the key to the solution of metaphysics. There the question was: "What is the ground of the relation of that in us which we call representation to the object?"<sup>4</sup> which exemplifies the general philosophical problem of the "transcendental object". By the time Kant wrote the first edition 'Deduction' he had arrived at a genuinely new solution to the problem. The ground of the relation between representations and their objects resides neither in the representations nor in the things represented but in the representing through concepts by the subject. The subject projects conceptual necessity upon representations thereby contributing those features of experience which justify the objectivity of appearances. It is the thought of the concept of an object in general which corresponds to our representations and which conceptually "binds" them into a necessary unity; it is through the concept of an object that the subject effects the transition from judgments about

one's representations to judgments about the world, where the extended world exists only in representations. This is the difference between statements like, 'I feel cold' or 'I have a sensation of coldness' and statements like, 'There is something causing my cold sensation'. Now Kant and those who have followed him in thinking that conceptual necessity is sufficient to demonstrate the objectivity of categorial concepts, regard the difference between these two kinds of statements as one of degree of objectivity. A perceptual report about my own state ('I feel cold') is usually understood as a description of how I am being sensuously affected without any assumption that others are being similarly affected. Such a report is subjectively true, true in that it accurately describes the way that I feel, and subjective because it is descriptive of my state only. Now if perceptual reports are to obtain a full compliment of objectivity, i.e. be regarded as objectively true, it is sufficient for those thinking that objectivity can be established by conceptual necessity, that a number of perceptual reports agree. Thus, if everyone in a room is cold, we can safely judge the room to be cold. This kind of objectivity is based on intersubjective agreement, rather than on there actually being something in the world which causally corresponds to commonly experienced sensations. What, on the model of conceptual necessity, Kant is obliged to say is this: When I am being sensuously affected in some way, in order to obtain cognitive

apprehension of the experience, I must conceptualize it in a causal order that fixes it in time and space. This is the function of the concept of an object in general. That there is something in time and space that corresponds to the way in which I must represent the experience to myself, i.e. whether or not there is an object =X, is unknown. Unfortunately, this account of the objectivity of appearances raises as many problems as it solves. First of all, if Kant was convinced that intentional or conceptual necessity was sufficient to explain the objectivity of appearances, why did he remain agnostic with respect to the existence of the object = X corresponding to appearances? If intentional necessity really provides an adequate account of objectivity then presumably it does so independently of the question of the existence of the object = X. What Kant should have said was that even if the object = X was known to correspond to our representations, this was not the ground of objectivity, as only intentional necessity can provide such a ground for the relation between the known and the knower. But Kant does not argue in this way; instead, he argues to the effect that a defence of intentional necessity entails a denial of de re or real necessity on the sole basis that we can never know the real nature of things. For there is no reason, if we accept that knowledge is distinct from being, that our forms of judgment could not originate in the knowing subject, while the data of knowledge - what is known -

has its source in the real nature of things. Kant, of course, recognizes only intentional necessity. This creates the strong suspicion that underlying Kant's transcendental idealism is the belief that the foundations of objectivity is to be found in things in themselves, but as we can never have knowledge of things in themselves and want to avoid scepticism, we shall make the grounds of objectivity conditions of the possibility of knowledge; thus the transcendental unity of apperception and intentional necessity as the way of objectifying the categorical concepts which are specifications of it.

The second problem involved with trying to explain objectivity in terms of conceptual necessity only is that no independent source of appearances can be postulated. If something over and above appearances is postulated as the source of appearances, other than the knowing subject, then conceptual necessity cannot be the sole explanation of objectivity; if appearances are ultimately grounded in the nature of the knowing subject (as a species of representations) then how is Kant to explain the existence of something other than mind, i.e. matter. If there is anything at all to be known (and presumably Kant does think there is otherwise why postulate conditions for knowledge) it cannot have its origin in the nature of the knowing subject, for then, all knowledge would really be a form of self-knowledge; the only world to be known is the world of the self. Actually, Kant does come very near to this

kind of position at times especially when trying to explain his theory of synthesis but that is another problem.

Kant is far from offering a satisfactory solution to his old problem of explaining the "ground of the relation of representations in us to the object". Since Kant denies that knowledge of objects is based on the constituting predicates of the objects (for that would be equivalent to having knowledge of things in themselves) while at the same time maintaining that objective knowledge is possible, he must provide an alternative account of the grounds of such knowledge. If the grounds of our knowledge of things lie not in the things known then they must lie in the knower. Leibniz thought that a complete knowledge of the nature of things was not possible for discursive intellects but he did not therefore deny that what knowledge we did possess was derived from things. Kant is led to deny all knowledge of things simpliciter because he cannot see how a complete knowledge of the order of things in the world grounded in the nature of things, is possible. Thus, the knowing subject becomes the source of the order of things in the world. But surely if this procedure is to be even prima facie acceptable, Kant must show definitively that we can never know any of the basic, defining properties of things. Once this had been shown, the shift from a world of things to a world of appearances which is the most significant consequence of Kant's scepticism with respect to our knowledge of things, would seem more plausible.

Kant never sets out a direct argument to the effect that we cannot know anything of the nature of things. Once again, it is not sufficient that Kant argues for the claims of transcendental idealism for the truth of the latter presupposes the falsity of a theory like Leibniz's realism, or a modern brand of realism for that matter.

9. The tendency in recent Kant scholarship has been to play down the role of the transcendental object = X. Kemp Smith treats the notion of transcendental object with what almost amounts to scholarly contempt 5. He regards it as no more than an unfortunate remnant of Kant's pre-Critical days, a contention which is now highly disputable since the transcendental object is discussed by Kant in the Opus Postumum. I suspect that Kant's permanent interest in the notion of a transcendental object reflects his worries that the CPR's official doctrine that the world is a world of appearances - ultimately, cannot support even a mind-matter ontology. We glimpsed in the last section the problem which arises as a result of Kant's excessive dependence on conceptual necessity as a means of proving a concept's objective validity. The transcendental object's presence in Kant's later writings could be an indication that he was coming to some such conclusion himself. However this may be, I want to present an argument to the effect that a certain interpretation of the concept of the transcendental object underlines the requirement for the adoption of an

ontological perspective of Kant's theory of objectivity, or, that the metaphysics of transcendental idealism is essential to Kant's whole programme.

First, a preliminary remark about the text of CPR. When I first examined the 'Transcendental Deduction' in A and B I felt convinced that, despite the fact that there was no mention of the term 'transcendental object' in the B Deduction, each version contained its own theory of the transcendental object. While I still think this is a defensible view, it is hardly possible to argue that the entire text of the B Deduction bears out the interpretation of the transcendental object I believe can be offered. Therefore, rather than structure my argument around the contention that each version of the Deduction provides us with a theory of the transcendental object, in any reading of the two texts, I have decided not to anchor my interpretation in this strong claim. The purpose of my argument is, of course, not affected.

Kant's approach to the issue of objectivity, in particular, his concern with the criteria of 'objecthood' and objective knowledge, is quite different in the A Deduction from what it is in the B Deduction. In the A Deduction, Kant stresses the necessity of the unity of consciousness, the requirement that diverse experiences be held together in a single consciousness. Kant's explanation of the connectibility of representations in consciousness is shrouded in a psychologistic idiom which creates the regrettable impression that Kant is making claims about how our minds actually assimilate their material

in constructing 'our' world. While I do think, and argue for the contention, that transcendental idealism obliges Kant to accept that the subject is the sole creator of world-order, it is not to be understood in a literal sense. Kant's faculty talk is not essential to any of the arguments which he advances in spelling out the roles of imagination and understanding. We can eliminate the faculty talk and substitute it with specific descriptions of the mind's capacities which we can defend, as Kant ultimately does, with transcendental arguments of the form: 'The mind must have these capacities if experience is to be possible'. That Kant chose to describe the mind's operations in terms which were fashionable at the time he was writing seems not to be a very penetrating or effective criticism of his overall estimate of the mind's place in the order of things.

The understanding brings the "raw material" of intuition, which has been synthesized in apprehension and reproduced in imagination, under concepts, an activity Kant thinks is similar to recognizing an experience and then proceeding to identify it (A98 - A104). The mind must engage itself with the raw material of sensible intuition to synthesize, or, effect, a unitary objective world; the mind is really introducing order in the world, imposing its own necessity on the world where there exists no natural necessity. This briefly is the account provided in the A Deduction.

In the B Deduction the emphasis is placed on the role of judgment in determining (conceptually) the objective world. The B Deduction is generally regarded as a successful attempt on Kant's part in eliminating the shortcomings of the A Deduction; the psychologistic language is minimal, and instead we are provided with a logical account of the conditions for a possible experience. Kant links experience, making judgments and applying the categories, together in an argument which has the following form: All experience involves judgment, without the making of judgments we would have chaos instead of ordered experiences; the metaphysical deduction has shown, moreover, that the forms of judgment (and the only possible forms of judgment at that) are the forms according to which we classify (=unify) objects; the categories are the conceptual equivalent of the forms of judgment and it is by means of the categories that the "raw material" is subsumed (in 12 possible ways) under concepts. Thus, the categories are necessary conditions for the possibility of experience. Kant's aim in the B Deduction remains what it was in the A Deduction, i.e. to show that the categories are specifications of the concept of an object in general, or, as Kant defines judgment in MFNS, "...precisely determined definition of a judgment in general (as an act by which given representations first become cognitions of an object)".<sup>6</sup>

Both the A Deduction and the B Deduction have as

their central aim the establishment of the possibility of objective knowledge. In the A Deduction Kant's strategy is to argue that if we are to acquire knowledge of objects, then our representations must be referred to a 'something' which is the transcendental object, or, that they must be thought only as something in general = X' (A104). Now to say that our representations must be referred to a something in general = X is equivalent to saying that they must be brought under the concept of something in general = X if experience is to be possible; and this is the function of a category. Hence, the transcendental object is functionally equivalent to the category of an object in general and as Kant's categories are specifications of the concept of an object in general, the transcendental object as something which must be thought, becomes quite superfluous 7. In the B Deduction in which Kant was trying to present a simpler and clearer exposition of his argument, the transcendental object is not mentioned. It is through the transcendental object and its categorial determinations that necessity - and therefore objectivity - is conferred upon representations; as such, the transcendental object is a pure concept the mere thought of which is sufficient to unite in consciousness the diverse predicates (= the manifold) of a particular representation, e.g. three sides of a triangle. The transcendental object is then, a conceptual item in Kant's theoretical framework, a framework within which objectivity is established by means of

epistemic or transcendental necessity; all knowledge for Kant rests on a transcendental condition, viz. the transcendental unity of consciousness:

"Thus we think a triangle as an object, in that we are conscious of the combination of three straight lines according to a rule by which such an intuition can always be represented. This unity of rule determines all the manifold, and limits it to conditions which make unity of apperception possible. The concept of this unity is the representation of the object = X ..... All necessity, without exception, is grounded in a transcendental condition. There must, therefore, be a transcendental ground of the unity of consciousness in the synthesis of the manifold of all our intuitions, and consequently also of the concepts of objects in general..... a ground without which it would be impossible to think any object for our intuitions; for this object is no more than that something, the concept of which expresses such a necessity of synthesis." (A106)

It is from the perspective of knowledge of the object, i.e. the object considered solely from the point of view of its cognitive apprehension, that transcendental necessity can effectively demonstrate objective validity. But this, surely, is not the only perspective, nor is it at all obvious that the objectivity of objects, so to speak, can be established from this perspective without consideration of the perspective of the object itself - the object simpliciter. Kant's claim that all necessity is transcendental amounts to the claim that no consideration need be given to the object of knowledge in establishing the objective validity of judgments; but, how, in that case,

can Kant provide an account of the objects of knowledge themselves, or, what it is our judgments are about? The fact is that not only does Kant's framework, the explanatory framework of transcendental idealism, seem unable to provide for such an account, Kant does not think it is necessary. This is because Kant thought transcendental idealism was true, a fact which underlines my contention that transcendental idealism is the center of Kant's system; if transcendental idealism is untenable however, then Kant's method of demonstrating the objective validity of concepts is deprived of its essential support, i.e. that the foundations of the known world lie in the nature of the subject, recalling that for Kant: (1) the known world = the world, and (2) all knowledge (= necessity) rests on a transcendental condition, which is equivalent to saying that (3) knowledge is grounded in the nature of the subject.

The analysis of the transcendental object which I have given tells only half the story, for Kant does use the term 'transcendental object' when referring to something corresponding to our representations of objects and 'the something' is not a concept but a putative object corresponding to appearances, lying outside our powers of representation. This notion of the transcendental object - according to which the transcendental object is provided with an ontological sense - may indeed be a survival from Kant's pre-critical days but that it is does not explain

why Kant still discusses it in the CPR and in his later writings. Furthermore, Kant's discussion of this sense of transcendental object shows that he knew exactly what he was doing - considering the legitimacy of a notion which his entire theoretical framework rules out. May it not be the case that there was a real tension in Kant's thought, a tension which finds expression in the ambivalent attitude towards the question of the source of appearances (in a transcendental condition or the real corresponding to appearances). Perhaps, that is, Kant himself suspected that the truth of transcendental idealism - the center of his theoretical framework - depends ultimately on the claim, expressed throughout Kant's work, concerning our lack of knowledge of the world as it really is, rather than on any claim to the effect that the unconditionally real is not (if only we could know) the real grounds of objective knowledge. This is the fundamental structural truth about the world from the theoretical perspective of transcendental idealism and it is also, I am arguing, its basic flaw. If unconditioned entities or powers can be shown to be necessary to account for the foundations of objectivity, then transcendental idealism is refuted. In the next chapter, I shall argue that the power of spontaneity must, according to Kant's moral philosophy, be such an unconditioned power. Furthermore, spontaneity is not only the source of practical reason, or reason as manifested in moral behaviour; it is the source of theoretical reason as well (there is only one

reason, as Kant said). Thus, the unconditioned lies at heart of Kant's philosophy. The power of spontaneity is the ontological foundation of reason and freedom, and thus the source of human creativity - through which man interacts with and alters the course of, the natural world. But the power of spontaneity is not the ontological foundation of the physical world or as Kant is wont to call it, the world of matter. Once again, Kant is not permitted to postulate a real ground for the order of things in the world of matter because any such ground would conflict with the thesis of transcendental idealism that the ground of the known world is the transcendental unity of apperception (the structural core of subjectivity). I believe and shall argue in the closing chapters of this essay that it is necessary to postulate a type of entity which is ontologically unconditioned in order to complete any defensible theory of objectivity. Paradoxically, Kant provides the materials for the preliminary sketch for such an argument; in MFNS, the two forces of repulsion and attraction postulated as the basic constituents of matter, cannot be described from the perspective of conditionedness - they are unconditioned and Kant's sole reason for not regarding them as such is his commitment to transcendental idealism. If the latter theory is false, or at least, untenable, then there exists no reason why an explanation of objectivity which legitimizes the unconditioned as an ontological type, should not be accepted.

The above was a digression which I thought appropriate to insert at this point in the discussion in order to supply at least initial support for what I have said and will now say, concerning the transcendental object.

The intuition lying behind transcendental idealism is, I believe, that human beings are limited to a perspectival grasp of reality because of the constitutional limitations of their perceptual and conceptual powers. Hence, any theory of reality must account for this fundamental truth about us, by recognizing that the world, the only world for us, is a world of appearances. Our theories of the nature of reality, scientific and metaphysical, will therefore reflect our perspectival grasping of reality as well as the actual nature of reality apart from our grasping of it (actually, on a strict interpretation of transcendental idealism, it is doubtful if even a glimpse of reality is possible). Now the weakness in a structured intuition of this sort is the unargued for assumption that it makes, i.e. the real ground of appearances, although unknown, cannot manifest itself through the known. In other words, the falsity of the Leibnizian intuition that the fundamental constituents of the universe, although unknowable, are no less fundamental for that, is not entailed by any of the claims of transcendental idealism. If the Leibnizian position is interpreted as an argument to the effect that whatever kind of entity is discovered to be the basic stuff of the universe, it is to be regarded as the basic

'stuff' until something more fundamental than it is discovered, then, we can construe the unconditioned, e.g. atoms, monads, point centers of influence, as knowable; point centers of influence (say) are ontologically unconditioned and there exists nothing more fundamental in terms of which they can be explained while they explain the being of everything that is. The following passage from CPR reveals Kant's thinking about his own theory to be based on such a grasp of knowledge and being:

"The absolutely inward (nature) of matter, as it would have to be conceived by pure understanding, is nothing but a phantom; for matter is not among the objects of pure understanding, and the transcendental object which may be the ground of this appearance that we call matter is a mere something of which we should not understand what it is, even if someone were in a position to tell us. For we can understand only that which brings with it, in intuition, something corresponding to our words. If by the complaints - that we have no insight whatsoever into the inner (nature) of things - it be meant that we cannot conceive by pure understanding what the things which appear to us may be in themselves, they are entirely illegitimate and unreasonable. For what is demanded is that we should be able to know things, and therefore intuit them, without senses, and therefore that we should have a faculty of knowledge altogether different from the human.....Through observation and analysis of appearances we penetrate to nature's inner recesses .... But with all this knowledge, and even if the whole of nature were revealed to us, we should still never be able to answer those transcendental questions which go beyond nature. The reason of this is that it is not given to us to observe our own mind with any other intuition than that of inner sense; and that it is precisely in the mind that the secret of the source of our sensibility is located. The relation of sensibility to an object and what the transground of this (objective) unity may be, are matters so deeply concealed that we, who after all know even ourselves only through inner sense and therefore

as appearance, can never be justified in treating sensibility as being a suitable instrument of investigation for discovering anything save always still other appearances - eager as we yet are to explore their non-sensible cause." (A277-A278 = B333-B334)

The divorce between the realms of knowledge and being is an outcome of transcendental idealism and the result of this separation is a positive scepticism with respect to our knowledge of the world, we can only have knowledge of appearances, not things in themselves. So the transcendental object is interpreted as an ideal object of knowledge rather than a real object. By distinguishing the existence of objects 'in' representations from their existence simpliciter, Kant in effect creates two autonomous realms, knowledge and being. In the section entitled 'Transition to the Transcendental Deduction of the Categories', Kant states that there are only two theories of the relation between representations and objects:

"There are two possible ways in which synthetic representations and their objects can establish connections, obtain necessary relation to one another, and, as it were, meet one another. Either the object alone must make the representation possible, or the representation alone must make the object possible. In the former case, this relation is only empirical and the representation is never possible a priori. This is true of appearances, as regards that in them which belongs to sensation. In the latter case, representation in itself does not produce its object insofar as existence is concerned, for we are not here speaking of causality by means of the will. None the less the representation is a priori determinant of the object, if it be the case that only through the representation is it possible to know anything as an object." (A92 = B124-125)



Either our representations are as they are because their objects are (concepts conform to objects) or, the representations or something about the representations determine the kind of object it is possible for there to be represented (objects conform to concepts). If it is true that the knowledge we have of objects is limited to and by concepts (representations) then it follows a fortiori that concepts determine what is to count as objects. This relation, as Kant admits, is an epistemological one, having no bearing on the existence of objects. Kant would argue that this simply means the only knowledge it is possible to have a priori is knowledge with respect to the structural or formal characteristics of objects, i.e. the defining features of objects. And that is equivalent to the claim that we can only know objects as we represent them, not as they exist simpliciter. Now two separate claims are implied by this: (1) A priori knowledge of the existence of objects is impossible for discursive intellects such as ours; humans do not possess intellectual intuition. (2) Knowledge of objects as existing outside our representations is not possible; we can never know objects as existing simpliciter. Constrained by a theory of objects according to which objects are interpreted as ultimately (transcendentally), a species of representations, Kant can make no dogmatic or positive claims about things existing outside our representations. But representations are not self-objectifying, so to speak, that is, they cannot them-

selfes provide explanatory grounds for their objectivity; Kant re-interprets the dogmatic claim with respect to things simpliciter in terms which are neither dogmatic nor sceptical, by postulating a putative object = X, a something which must be thought as the object of representations. The thought of the putative object = X confers necessity upon our representations, and provides the constraint which is the criterion for distinguishing subjective from objective representations. Again, the necessity is epistemic, required solely for the cognitive apprehension of "objects", thereby disengaging the whole question of the existence of a transcendental object corresponding to our representations from the general problem of determining the objectivity of objects. Nothing more 'concrete' than a putative object is required to guarantee objectivity so long as conceptual necessity remains the essential criterion thereof. The existential status of the transcendental object is bracketed, or neutralised, with respect to the problem of establishing the objectivity of representations, a de-ontologizing slide legitimized by the correlative ontological bracketing of objects as existing simpliciter. Kant's thesis that phenomenal or empirical objects exist only in representations requires the postulation of an ontologically neutral kind of object - the transcendental object. Kant can only neutralise questions pertaining to the ontological status of the transcendental object, he cannot and does not, claim that such questions can be answered only negatively. Here, at this juncture,

we can see clearly the tension in Kant's thought created by the workings of two different tendencies, the phenomenalist and the realist. Kant's phenomenism underlies his epistemological thesis that conceptual necessity is the essential criterion of objectivity while his realism seems to be aligned with the ontological thesis that objects may (=transcendentally) exist simpliciter from the perspective of the possibility of knowledge, i.e. by talking only about our representations and bracketing the world of material things (while acknowledging their physical appearance) into the representations.

The spectre of the thought of the transcendental object is lurking in the pages of the 'Analytic' when it is not explicitly discussed. In the A Deduction Kant had said that the unity which the thought of the transcendental object made necessary amongst representations is logically equivalent to the formal unity of consciousness, or in plain verse, to knowing the object: "...the unity which the object makes necessary can be nothing else than the formal unity of consciousness in the synthesis of the manifold of representations. It is only when we have thus produced synthetic unity in the manifold of intuition that we are in a position to say that we know the object."

(A105: emphasis mine) In the B Deduction the concept of an object in general becomes the format for the categories, the latter being specifications of the concept of the transcendental object = X. Instead of anchoring the

categorial specifications to representations in the way that the transcendental object brought unity to the representations in the A Deduction, Kant drops the phenomenalist idiom altogether and replaces it with a definition of the concepts of objects in general in terms of the possibility of experience. This has been regarded as the core of Kant's critical philosophy, its truly original center. But how successful is it? Consider: Are not the conditions of possible experience provided in the B Deduction equivalent to the conditions, in the A Deduction's phenomenalist language, which function as criteria for objecthood - that the object exist in our representations (= being in space and time and subject to pure concepts)? In other words, is it not the case that, in Kant's theoretical programme, to be an object possessing features which any comprehensible object must have, is just to be an object existing in representations? Witness how the replacement of the appropriate words in this B Deduction passage produces the A Deduction account: "Our conclusion therefore is 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." (B147 = B148) And the suggested rewording: 'the pure concepts, as yielding knowledge of things existing simpliciter, have no kind of application, save only in regard to things as they exist in representations'. The point of this exercise is to show that Kant's attempt in the B Deduction to provide a logical account of the

possibility of experience presupposes the fundamental question of the foundations of objectivity no less than the apparently pre-critical A Deduction does. Kant himself intimates this when he states: "How they (the categories) make experience possible and what are the principles of the possibility of experience that they supply in their application to appearances..." (B167) In this same passage we find a restatement of the possible relations between objects and their representations (discussed a few pages back); the terms 'objects' and 'representations' are now replaced by the terms 'experience' and 'concepts' respectively confirming that the argument has been recast in terms of the central guiding notion of the possibility of experience: "There are only two ways in which we can account for a necessary agreement of experience with the concepts of its objects: either experience makes these concepts possible or these concepts make experience possible...there remains therefore only the second supposition....namely, that the categories contain, on the side of the understanding, the grounds of the possibility of all experience in general." (B166-B167) (last emphasis mine).

It may be considered arguable that Kant's logical account of the conditions for a possible experience is embedded in the context of the grounds of objectivity; it has been argued, for example, that the B Deduction argument concerns judgments, not representations or even concepts.

And the conditions required for the possibility of making judgments can be derived from the single assumption of an intersubjective world - the world of experience, the real domain of judgments. Notions such as the world as it exists in representings and the world as it exists simpliciter are nothing but metaphysical fancies. There is only one world, the common, intersubjective world of experience. This argument has much to recommend it, but it leaves unexplained the fundamental problem which any theory of a priori concepts must address itself to, viz. the relation between the a priori concepts and experience. A system of a priori concepts in terms of which objectivity is defined, whether it be in the form of the 'unity of representations' or 'judgments of experience', must provide for an explanation of the relation between what is a priori (thought) and what is not (reality). This is the problem of the foundations of objectivity and it is a problem which lies at the heart of Kant's philosophy. In this section I have tried to show, by concentrating on Kant's treatment of the transcendental object, that both the so-called psychologistic account of the A Deduction and the logical account of the B Deduction, represent two attempts at resolving that problem. Kant's notion of the transcendental object acquires the function of a fulcrum, so to speak, of the basically Kantian contrast between material things as existing in representings and material things as existing simpliciter. Although the contrast assumes different formal

expression - the idiom of phenomenalism and the idiom of judgment - it is a contrast which is sustained throughout Kant's struggle with the whole issue of objectivity. The notion of the transcendental object is an important one, Kemp Smith's disparaging comments notwithstanding. In CPR Kant claims to have provided an account of the world of everyday experience - the empirically real world - which is both undogmatic and unsceptical. He does so by arguing that the world of our experience is the world which fits out categorial framework; Kant doesn't argue for this directly; he just assumes its truth since nothing could ever be experienced which didn't agree with our categorial framework. And if nothing could ever be experienced which didn't agree with our categorial framework, then we need not distinguish the world as we experience it and the world. It is cognitive nonsense to talk of two such worlds when our categorial framework provides for the possibility of just this one world. Thus does Kant build into his complex argument the compulsion that the world as we come to know it through judgment is actually the world as its exists simpliciter. His arguments based on conceptual necessity lend strong support to this ploy. Only the notion of the transcendental object provides the clue to this, for it could be interpreted as follows: for the purposes of knowledge, the formal predicates of the world of our experience can be shown to be tied to our modes of experiencing - hence transcendental necessity; from the

perspective of things themselves, something not tied to our mode of experiencing, that is, something which is the source of the things themselves, must be postulated. This something is the transcendental object which from the point of view of knowledge can only be regarded as a concept.

10. The arguments of the preceding sections were meant to expose the precise nature of the problem which, I contend, lies at the heart of Kant's philosophical enterprise. In closing this chapter, I want to lend some plausibility to this claim by placing the problem as it relates to Kant's system in the context of a more general philosophical problem.

The fundamental problem of transcendental idealism is that, while it provides an account of the possibility of knowledge of things, it lacks the explanatory power to provide an account of the possibility of things. According to Kant's version of transcendental idealism anything which satisfies the conditions of the knowability of an object is a possible object. Of all possible objects those are actual which are given in intuition or are connected with what is given in intuition. But, if an object must satisfy certain a priori conditions to be knowable, then, there must be one or more characteristics about the object in virtue of which the object satisfies the requisite conditions. Recent Kant interpretation has tended to play down the ontological implications of

transcendental idealism in favour of more analytic enterprises. Thus, textual materials from CPR which are essential building blocks for a reconstructed theory of objectivity have been exercised from the general discussion of Kant's theory of experience as unworthy of serious philosophical consideration. Such an approach is inadequate for understanding the complexities of the Kantian theory of experience. As I understand it, the central, controlling position of this theory is the emphasis it places on the co-operation between thought about objects and the objects thought about in what we know as experience, or, to underline the active mode of thought, in what is cognized as experience, what is taken to be the common world of objective fact including the world of science. The necessities found in experience thus conceived are, according to the analytic interpretation, necessities which are conceptual; which is to say that they apply to our thinking about the world and the objects in it. Intuitional material (= the given) conforms to the structure of thought which is determined and specified by the categorial necessities. And it is at this juncture that there arises some questions which need to be asked in a non-cursory fashion: How is it that what is given in intuition is so amenable to, so conveniently fits, the specifications (= the categories) of the thought structure? I am not asking the rather spurious question as to how or why what is given in intuition can be thought at all, but why the given meets

the specifications prescribed. The overall significance of this question can be grasped when we consider that, within the context of Kant's theoretical framework, only one kind of object actually does meet the specifications laid down by the categories. This is the kind of object which falls under the predicate 'is a material object' and since the objects falling under this predicate exhaust that class of objects satisfying the conditions for possible objects of experience, only material objects are possible objects of experience. Living organisms, moral agents and fundamental entities postulated by science, are eliminated as possible objects of experience.

The question which I have raised is part of a broader philosophical problem with respect to the nature of thought and reality, a problem which some thinkers have demoted to the stockpile of pseudo philosophical problems. Do the categorial concepts which we employ in thinking about reality determine reality or are our basic categorial concepts, if not wholly determined by reality, set in motion by it? Is reality, in other words, a catalyst for our conceptual specifications? Let us imagine the natural world to be occupied by entities radically different in kind from those we know; what grounds would there be for supposing that we would possess a set of categorial concepts which would enable us to understand this world? If one replies (as I would) that no such grounds could be given, then, it would be difficult

the necessities can be understood as aspects of our forms

to avoid the conclusion that, were our subsequent experience in this changed world to prove quite different from our experience in this world, it would not be because of any change in our categorial concepts but because of the changed world. The point of this little thought experiment is this. Does language reflect the world of objective reality or does language as semantics and as a cultural and social force determine what we are to classify as the facts? In Kantian terminology: Is thought constitutive or merely regulative? Kant's whole critical programme can be viewed as a long involved story of how what we can know is limited by what we think. The knowable must fall within the bounds of the thinkable. Kant argues that the necessities involved in our experience are the necessities in our concepts of things, i.e. in the way that we think about things. This being the case we should want to know why these concepts involved necessity and in particular, whence this necessity is derived. If it is true that garden variety objects like tables and chairs must be thought as spatial and temporal particulars, then we must inquire whether this necessity in our thinking about things is due to the things thought about or whether it belongs to, or derived from, the nature of thought itself. Kant's answer is that the necessities are part of the structure of thought, or more precisely, part of the structure of the thinking subject, and insofar as we must conceptualize things in just this way if they are to be comprehensible, the necessities can be understood as aspects of our forms

of representation. The world must be like this because this is what our concepts are like.

The claim that the world appears to us as our concepts entitle us to represent it, is a claim about the grounds of objectivity, that the grounds of objectivity are found in thought about objects and not in the objects themselves. I am arguing that this separation of the nature of objects from our thought about them requires an explanation for it entails, as I have already mentioned, the claim that the realm of knowledge is disengaged from the realm of being. If transcendental idealism is considered as an epistemological thesis only, then its explanatory power falls short of this problem.

A transcendental realist, i.e. someone who asserts that the necessities involved in experience are in the world or in material things as existing simpliciter does have an explanatory thesis with respect to the relation between knowledge and its object, to wit, that the necessities which seem to characterize our thinking about objects are not conceptual in origin. A modern transcendental realist identifies necessities in our experience with the physical properties of material things and provides an analysis of the physical nature of objects in terms of dispositional properties of objects. Without certain physical properties material objects would not be what they are; their essences define their natures. What is Kant's answer to this requirement? Interpreters who see

I have the impression that Kant in a wholly analytic light have no answer to this problem. Their position seems to be this. The nature of things insofar as this can be discovered at all, is determined by the nature of our concepts. There is a very strong link between how things are and how we think and speak about things, so strong in fact, that if our categorial concepts were different then things would not appear to us as they do. But this only poses the further problem of why it is that facts about the world and about the nature of things (even if these are only structural) can be had from what we know of our conceptual scheme. Why should our categorial concepts specify the objects to which they are applicable? And this seems to be Kant's own question, 'How is a priori knowledge possible?' We want to know what it is about our conceptual structure which gives it this constitutive power. How are the minimum conditions for knowledge laid down by the categories met, if they are met? If the relation between thought and reality is anything like Kant and those who follow him maintain it is, then discoveries concerning the nature of thought are very likely to tell us something about the nature of reality. I am not alone in thinking that the relation is problematic and that Kant's answer is unsatisfactory as it stands. Humbert Schwyzer, in an article concerned with some comparisons between the metaphysics of Kant and Wittgenstein, notes but does not follow up, the failure of so-called conceptual analysts to come to grips with this problem:

"However, I have the impression that, by and large, those contemporary analytic philosophers other than Wittgenstein who find the appeal to how we speak relevant and important, do not in any clear way at least, see themselves as Copernican Revolutionaries;.... They too often regard their work simply as "conceptual analysis" and, I fear, conveniently put aside any question as to the relation of concepts to objects, of thought to reality."

Towards the end of Part I of Bounds of Sense, Strawson addresses himself to just this question. There he asks whether or not the basic Kantian formulation that our conception of experience and its limits is determined "by our capacities", is a feasible one. If the answer is that it is not, then what alternative explanation can be offered? It would seem that Strawson's answer is that the question itself is gratuitous: "To this I can only reply that I see no reason why any such high doctrine should be necessary here.... There is nothing here to demand, or permit, an explanation such as Kant's."

Kant's explanation, which we have seen is essential to his whole critical programme, is to ground the relation between thought and reality in the nature of the thinking subject and by means of transcendental necessity - hence what I shall call the theory of transcendental objectivity. This, at least, is the explanation provided by the CPR; as we shall see shortly, Kant's conception of moral agency, his very conception of freedom and reason, and his conception of living organisms, reduce his theory of objectivity to at best a partial truth.

Freedom and Reason: Ontology

Chapter II

"Reason, in Kant's philosophy, is essentially free; freedom is essentially rational; and both consist ultimately in spontaneity."<sup>1</sup>

The purpose of Chapter I is to provide an interpretation of transcendental idealism with respect to the problem of objectivity. The central thesis of transcendental idealism is that the foundations of objectivity lie in the nature of the subject; it is this claim which creates problems for Kant's system. If objectivity is defined in terms of the nature of subjectivity then our ontology shall be limited to and by, the forms of the knowing subject. This amounts to permanently locating our ontological perspective within the domain of the knowable created by the conditions of human subjectivity.

In this chapter I want to show a specific ontological problem which arises as a result of Kant's theory of objectivity. Both in this chapter and the following one I shall be concerned to show that there are at least two kinds of entities which cannot be accounted for by transcendental idealism, namely, moral agents endowed with the power of spontaneity and living things or organisms. The latter, as discussed by Kant in the Critique of Judgment, is the subject of Chapter III.

Kant's distinction between the noumenal and the phenomenal is usually regarded as being essential to his moral philosophy. Whereas reason in its theoretical employment is governed by the category of causality in the

world of phenomena, reason in its practical mode must allow for the possibility of a freely acting self who stands outside the sequence of conditioned events. Unfortunately, Kant's attempt to provide a theoretical account of how reason can manifest itself as both conditioned and free makes a mockery of our actual moral experience. John Silber, whose writings on Kant's moral philosophy I follow in this chapter, has argued persuasively that Kant's moral philosophy would have to be deemed a failure if it could not explain the simplest of moral experiences.<sup>2</sup> I should emphasize at this point that it is not part of my purpose to pursue the intricacies of Kant's moral and ethical doctrines but to develop an argument to the effect that Kant's conceptions of freedom and rationality require a genuine ontological underpinning.

It is often said that freedom is necessary for the possibility of moral obligation. This is true for obligation presupposes responsibility and responsibility presupposes freedom. In accounting for the experience of moral obligation, that is, of a person in the noumenal realm being tempted by his self in the natural world, Kant argues that the moral self as it exists in the noumenal realm is timeless and therefore not affected by the series of prior causally conditioned events while regarding it as the timeless cause of the self's action in the natural world. (cf. A550=B578 - A553=B581) The noumenal agency of the self somehow brings about the series of causally conditioned

events without actually interfering with them. Nothing in the natural world is changed by the noumenal free causes and since our moral decisions belong to the free noumenal realm, they are thus rendered superfluous with respect to events in the phenomenal world. However, essential to the very conception of human action is the idea that through action we can and do change the course of events in the natural world, interfering with the natural order of things to create a series of events which would otherwise not have occurred. Kant's conception of the interaction of the self as existing in the noumenal realm and the self in the phenomenal realm thus totally fails to account for our moral experience. Furthermore, by designating the noumenal realm as the proper domain of moral volition and then making the noumenal timeless, Kant makes nonsense of what is apparently the most obvious and significant aspect of moral experience, its temporality. We are tempted by desires which are either resisted or succumbed to in time; decisions are taken by the power of the will, and the subsequent satisfaction or guilt felt, in time. "The pilgrim's and the rake's progress are, as the word "progress" indicates, thoroughly temporal adventures."<sup>3</sup>

Kant's bifurcation of the realm of being into the phenomenal and the noumenal arises from the theoretical requirement of resolving the problem of freedom and determinism in the 'Third Antinomy'. Kant's "solution" would

place him, I should think, in the camp of the compatibilists. The freedom of human action is compatible with the in principle determinism of human behaviour in the phenomenal world; freedom, Kant thought, is itself a kind of causality, a causality of the will which is uncaused or has no antecedent determinants. Insofar as freedom gives rise to action, man is free; but human action must be expressed in the phenomenal world in which it is regarded as an effect of the free causality of the will and thus describable in the language of determinism as are all events in the phenomenal world. To place the free causality of the will in the noumenal realm is equivalent to making all decisions, acts of volition, excruciating moral dilemmas timeless wonders of parallel worlds whose interaction Kant does not postulate. Where the noumenal ends, the phenomenal begins; Kant cannot allow for the possibility of interaction between an uncaused cause and a caused cause because of his commitment to the deterministic world of CPR. The interaction that Kant supposes he has postulated is no more than formal or epistemological which is just to say that there is no real interaction between ontologically distinct realms. But as we have seen this is what is required if the facts of moral experience are to be explained. To have the power to act is to have the power to interfere with, to alter the natural world in some way. This power separates us from the natural world in kind; to act is to witness the genuine interaction of one ontological realm with another.

The 'Third Antinomy' simply exposes the problem of reconciling freedom in the noumenal realm with determinism in the phenomenal realm, but offers no explanation. How is it possible that one and the same event can be the effect of a free cause and a causally conditioned event at the same time? A.C. Ewing has noted the almost Pickwickian nature of Kant's supposed solution:

"What is easier to say than that the self as thing-in-itself or noumenon is free, and as phenomenon determined by natural causality in all its actions. At first sight, at any rate, this solution seems to come perilously near to being what Mr. Sidgwick described the solution of the third antinomy as tending to become, that is, an explanation by saying that 'we may also suppose an unknown relation to an unknown entity, which is not a phenomenon, which might afford the required explanation if we only knew it.'<sup>4</sup>

What is really damaging to Kant's solution in the 'Third Antinomy' is that even if we accepted the thesis that the noumenal and the phenomenal worlds existed independently of each other but nonetheless harmoniously so that freely willed decisions and causally conditioned events always agree, the degree to which this thesis is out of touch with our actual experience and fails to account for that experience, ultimately requires us to reject it. This objection also holds good against another interpretation of the phenomena-noumena problem, viz. that it is possible to construct different conceptual frameworks within which to explain events, with different principles used to explain those events in each framework, thereby preserving

the meaning of actions originating in the noumenal realm and events taking effect in the phenomenal realm. Davidson advances this kind of Kantian solution; he states "...We explain a man's free actions (by) accounts of intentional behaviour (which) operate in a conceptual framework removed from the direct reach of physical law by describing both cause and effect, reason and action, as aspects of a portrait of a human agent."5 But recourse to different contexts of meaning can at most explain the possibility of providing different descriptions of human action or physical events, that is, it is an attempt to show that freedom and determinism are compatible and that the idea of imputing different levels of meaning to one and the same event is an idea which has cognitive content. What needs explaining however, is the real compatibility of the noumenal with the phenomenal in light of our moral experience; the whole point is that the real possibility of, say, the experience of moral obligation (which Kant, incidentally, called the one fact of pure reason) rests on the genuine, and not merely conceptual, coming together of ontologically distinct worlds. It is worth quoting Ewing once again here for he is most perceptive in discerning the failure of Kant's solution:

"It is because he makes a mechanical or quasi-mechanical causality universal among phenomena that he has to separate the noumenal from the phenomenal so completely, as the timeless from the temporal. The awkwardness and obscurity of Kant's solution comes, no doubt, partly

from the difficulties of the subject, but also from the fact that, because he supposed the only kind of necessity to be quasi-mechanical, he regarded himself as having proved in the Transcendental Analytic not only necessity but also 'natural' (quasi-mechanical) necessity to be universally valid among phenomena and was consequently only able to secure freedom in another, non-temporal sphere, totally alien to the world in which we live."6

I must add here that, though Ewing is right, he may be so for the wrong reasons. For Kant does try to argue the case for providing a purely teleological explanation of phenomena, in the 'Dialectic' of CPR and the CoJ. What Kant really seems to be seeking an explanation for is the grounds of the whole world-order, grounds which he realizes must lie in the unconditioned and Kant always conceived of the unconditioned as necessarily supersensible and often theological in nature. He argues that reason is disposed to follow through the entire series of conditioned things until it reaches the unconditioned (and ideal) source of all conditioned things which is then hypostatized as the real (=ontological) ground of the world-order (from which all systematic unity is derived). It is true that Kant regards this "purposive unity" of things as a "merely" regulative principle of reason, by which Kant means that it has no objective validity, but it is also true, as I try to show in Ch. 5, that this is the ultimate explanation of the order of the world and that the explanation expressed through the doctrine of transcendental idealism is

contingently true, i.e. its truth comes to depend not on the falsity of any explanation based on knowledge of the unconditioned, but, on our failure to attain to that knowledge. If Kant's objections to the concept of the unconditioned and his objections to ascribing explanatory power to such a concept, can be shown to be a result of some of his own mistaken notions - such as, the unconditioned is supersensible, or noumenal - then, it might become a fully respectable philosophical concept.

Since the experience of moral obligation presupposes the freedom to act (freedom of the Willkür), and freedom is the expression of man's ultimate spontaneity through the actions of the Willkür, the fact that moral experience is temporal and phenomenal, establishes once and for all man's involvement in the noumenal and phenomenal orders at the same time. The fact of moral obligation demands the recognition of the objective reality of more than one kind of ontological entity.

2. Kant's conception of freedom is the key structuring idea of his theory of personality. As such, freedom is seen to be much more than a formal requirement for the possibility of moral action which pure rational beings must possess. Freedom defined as a rational requirement for action only, as Kant realized, loses all meaning. It is only for beings who are both rational and sensible, that is, beings who have to choose to either actualize their

power of free-willing or to deny that power by acting as if their desires or inclinations were the sole determinants of their action, that freedom can be a reality rather than a mere illusion of itself. Through the moral law (the 'ought' indelibly carved in the heart of every human being) we become aware of our power to act in defiance of our desires, or, in spite of them, to act as we think we ought. This does not mean, as moral philosophers commenting on Kant's work have so mistakeably understood it to mean, that desires and inclinations have no motivational influence upon human action; it is an assertion of our freedom to decide for ourselves, to determine ourselves what desires or inclinations shall effect us. In effect, Kant argues that those effects which determine one's behaviour are themselves ultimately determined by one's self and not merely through one's self conceived as determined by its own nature. This is the essence of Kant's conception of transcendental freedom, the freedom to act independently of all antecedent conditions including the determining conditions of one's own nature. And freedom thus conceived is the expression of absolute spontaneity, the power, with respect to action, to choose, even if it is only to choose which effects will determine one's behaviour. It is the power, in the context of Kant's theory of the will, of the Willkür to choose between alternatives.

To act as transcendently free beings is to realize the power of spontaneity which we possess ("There is in man

a power of self-determination..."). (A534=B562) It is in virtue of a man's capacity for genuinely free (=unconditioned) action that he is able to secure for himself the knowledge that he is distinct from mechanistic and deterministic life forms. And assuming this to be the case, that power in individuals which is the source of their freedom might be expected to be the distinguishing feature of their natures. Indeed, Kant regards spontaneity as that possession of the mind which entitles us to call ourselves intelligences (B158n). Spontaneity is the defining ontological feature of the self serving even as the root of synthesis, that "blind but indispensable function of the soul...." (A78=B103). Synthesis, an apparently inscrutable power ascribed to the imagination, is the mode of expression for the self's spontaneity at the level of judgment or theoretical reason; "But if this manifold is to be known, the spontaneity of our thought requires that it be gone through in a certain way, taken up, and connected. This act I name synthesis." (A77=B102) (First emphasis mine). Kant's failure to provide an epistemological basis for the power of synthesis, that is, his failure to offer a categorial explanation of its presence in thought (the 'act' of thought) is equivalent to Kant's failure, rendered legitimate within the context of transcendental idealism, to account for our awareness of ourselves as original, spontaneous beings. To provide such an account, would be to purport to explain an unconditioned

power, manifestly conflicting with the requirements of categorial-conditioned knowledge. Paradoxically, an explanation of the dynamics of reason in producing categorially-conditioned knowledge cannot be secured unless the requirements of categorially-determined knowledge are ignored. Spontaneity cannot be left unexplained, for it is the ontological foundation of both reason and freedom; reason, in both its theoretical and practical aspects would be inconceivable without spontaneity. To demonstrate this, I shall consider Kant's conception of the two basic ways that transcendental freedom can be expressed, namely, heteronomously and autonomously.<sup>7</sup>

Heteronomous action is an actualization of our transcendental freedom no less than autonomous action. To act heteronomously is to choose to act according to those desires or inclinations which are strongest. Although the individual has himself proposed his object of volition and determined it in the act of selecting it as the material or content of his volitional object, in heteronomous action the individual chooses to act as if this were not the case, i.e. as if he were compelled to act in accordance with his strongest desires. As Silber says: "He thinks of himself passively as if he were determined by laws other than those of his own choosing; he acts as if he were determined by the same laws of nature that determine the behaviour of animals."<sup>8</sup> There can be no denying that to regard one's self as subject to a law governing the behaviour of animals is to choose to

regard one's self as such; thus, one freely decides to adopt a heteronomous expression of transcendental freedom. However, when one freely decides to act heteronomously, one is freely taking a decision to regard oneself as unfree, unable to act independent of desires and wants, thus freely choosing to act as if one were not free at all. In the very act through which one's radical independence from external conditions is affirmed, one chooses to act as if one possessed no such independence at all. Every heteronomous act represents a loss - an abnegation - of one's freedom.

Of course, if heteronomous action was the only mode of realizing transcendental freedom then the latter would be no more than an illusion. The power to act autonomously, i.e. to act against the flow of desires and wants and thereby establish one's independence from them, must be a real possibility. In acting autonomously, one expresses the unconditionedness of one's nature as a free and rational being, for one positively wills to act in accordance with a maxim that can rationally be a maxim for all willing beings such as oneself. To base one's action on a universal maxim such as this is not only to affirm one's independence from external conditions, it is to express as well one's essential rationality. To act on the basis of a universal maxim is the one and only way of asserting one's independence from external conditions; but to act in accordance with such universality one must first determine maxims

expressing it and such maxims can be determined only by the use of reason. Nor does action based upon universal maxims imply that an individual is no longer subject to the influence of desires or wants; desires and wants and inclinations are still part of the object of volition which willing involves, only the determination of the desires and wants is based on the universal maxim, in willing an object on the basis of a universal maxim one freely chooses those desires and wants that will motivationally influence one. Likewise, one uses reason to determine maxims leading to heteronomous action; such maxims are based on inclinations and desires but nonetheless involve the use of reason in their formulation. Heteronomy and autonomy can thus be seen to be the two expressions of transcendental freedom and of the rationality of those possessing that freedom. Both reason and freedom are involved in action, either heteronomously and irrationally when one chooses to act against one's fundamental nature, or autonomously and rationally when one chooses to affirm one's nature (by the will's transcendence of desires and inclinations in the determination of universal maxims).

Now, if heteronomous actions are no less an expression of the freedom of one's nature than are autonomous actions, and both involve the participation of reason in the adoption of maxims (to act solely from impulse would require the total eclipse of our rationality by our animality), then, heteronomy and autonomy represent the

two possible modes of expressing reason and freedom. Furthermore, actions involving the use of reason such as judging, creating, appreciating artistic works, are actions which express our essential spontaneity, the power of the mind to create, judge and appreciate artistic works. Reason, therefore, is itself free, that is, properly expresses our power of spontaneity, and freedom, is itself rational. Ultimately, both are expressions of our fundamental natures the ontological core of which is spontaneity; freedom and reason are, through heteronomy and autonomy, spontaneity, supplying the structure and form for the latter's expression

3. To provide some support for our claim that freedom and reason are grounded in spontaneity and that reason is free and freedom is rational, we need only turn to the Foundations of the Metaphysics of Morals (=Foundations) where Kant argues that validity with respect to judgments presupposes the essential freedom of thought much as the experience of moral responsibility does. If reason in its theoretical aspect is not free from causal conditioning then all grounds for deciding valid and invalid lines of reasoning would disappear. For, reason, if completely causally determined in its theoretical functions, could only follow the course of reasoning it was determined to take. We would thus be causally 'forced' to think in this way, indeed, we would not properly be thinking at all.

To think is just to create one's thoughts and arguments, or imaginings, and then to determine their validity against a standard. To formulate arguments the conclusions of which do not agree with the law of non-contradiction, leaves one susceptible to the charge of irrationality; on the basis that one was causally determined to formulate regularly arguments with conclusions not meeting the minimal standards of rationality set out by the law of non-contradiction, one would, at worst, be thought to have been programmed irrationally. Thinking is thus seen to be thoroughly free; our very conception of reason would be impossible without the supposition of its freedom. The creative nature of reason in its multifarious forms depends not simply on a freedom from external constraints, but more importantly, on a freedom for spontaneous creative thought. In the Foundations Kant states: "... all laws which are inseparably bound up with freedom hold for it (being who cannot act but under the idea of freedom -- JD) just as if its will were proved free in itself by theoretical philosophy. .... Now, we cannot conceive of a reason which consciously responds to a bidding from the outside with respect to its judgments, for then the subject would attribute the determination of its power of judgment not to reason but to an impulse. Reason must regard itself as the author of its principles, independently of foreign influences...." (par. 448) In the final analysis, theoretical and practical reason are merely different applica-

itions of one and the same reason the essential freedom of which is rooted in spontaneity. Just as in morality, the freedom to choose or not to choose is a presupposition of moral responsibility with respect to action, so in thought, the capacity to think freely is a necessary condition for regarding persons as responsible for what they think and therefore, as rational beings. In Kant's philosophy, freedom and reason are the two interlocking modes of expression of man's nature, and both are rooted in the power of spontaneity.

It is at this point that the implications of Kant's theory that both freedom and reason are grounded in spontaneity become apparent. Spontaneity is the very essence of man's nature; it is what makes man the sort of being he is. Freedom and reason, as the two modes for expressing that spontaneity, are thus the fundamental manifestations of man's nature, that is, they are the form or structure which spontaneity requires. Freedom and reason, however, are themselves expressible only through action and / or judgment, that is, through heteronomy and autonomy. Kant's conception of heteronomous and autonomous action supplies spontaneity with a structure that is derived from, and is expressive of, man's fundamental nature. And this is exactly what Kant must provide for his argument would seem to imply that there is an ontological core to man's nature, and if there is an ontological core to our nature, then, there surely must be some specified way in which our

natures ought to be expressed; in order to retain and strengthen the freedom and reason we possess, therefore, we must affirm both by acting freely and rationally, and correspondingly, to fail or refuse to express our freedom and rationality in the ways it is possible for us to do so, is equivalent to denying what we are, leading to, through time, the destruction of our personalities. The most important normative principle introduced by Kant as a specification of how we must act or will, is the moral law. Far from being a purely rational requirement for action, the moral law is shown to be integrated into the nature of the human personality itself. According to Kant's moral theory freedom and the moral law mutually imply one another. The moral law is the ratio cognoscendi of freedom and freedom is the ratio essendi of the moral law. Autonomous action is action done in accordance with the moral law, thereby making the moral law a prescription for self-fulfillment since it is through autonomy that one realizes one's potential as a free being. However, because the moral law is shown to be implied by freedom and thus a structural component of our free and rational nature, it is also open to one to choose to reject the unconditional moral law in heteronomous action. In so doing, one goes a step further in the destruction of one's personality while at the same time expressing one's free nature; one cannot escape one's transcendental freedom even in the course of denying it - to do so one would not be human,

not possess a free and rational nature. The most one can do is refuse the moral law, the law of our nature, and as this is equivalent to self-denial, there inevitably follows a diminishment of our freedom and rationality. Autonomous action is the means for the fulfillment of our nature, in and through autonomy we actualize our potential as free and rational beings; likewise, heteronomous action represents a denial of the means for the fulfillment of our natures and a rejection of its law, and continual denial leads to a personality which is starved, whose essential powers are dissipated over a period of time.

What Kant's theory of personality, as I have described it, implies, is that since freedom and rationality express the law of our nature, anything less than the complete expression of our nature in autonomous action must, to greater and lesser degrees, involve the self-destruction, by gradual loss, of our personalities. A pattern of continuous heteronomous action would lead to the complete abnegation of our powers of freedom and reason. In fact, Kant attempts to provide, in Religion Within the Limits of Reason Alone (= Religion), an account of the effects on personality of the failure to act autonomously, or, the effects of a continuous series of heteronomous actions on the personality. Here, Kant offers a partial analysis of the will in terms of a theory of dispositions, so that, for the first time in Kant's writings, he can account for an enduring moral self that is affected through time by its

disposition towards good and evil action. In developing his conception of the will as a dispositional being, rather than a mere rational capacity exhausted in a single action, Kant provides the beginnings of a complete moral theory based on the ontological grounding of freedom and reason in spontaneity.

In order to comprehend the implications of Kant's theory of the will as I have described it, for a Kantian theory of being, I want to refer to a discussion by Hintikka of the concept of a self-defeating action. 8A It is quite clear that the various kinds of self-defeating actions identified by Hintikka with respect to the Cartesian cogito are logically equivalent to the Kantian notion of self-destroying heteronomous actions. Briefly, Hintikka's analysis is a defense of the view that persons, as thinking beings, are susceptible to certain kinds of effects as a result of their ontological natures. Even within the context of epistemological or logical theories of the structure of action, persons ought not to be considered as ontologically neutral entities. Descartes' argument to the effect that cogito, ergo sum, if denied, involves not simply a suspension of thought and all that implies, but the destruction of one's very nature, i.e. man as thinking substance. The denial that my thinking and my being are essentially connected is an "existentially self-defeating performance". As Hintikka says:

".....(Descartes) his ceasing to think would not only mean ceasing to be aware of his own existence; it would put an end to the particular way in which his existence was found to manifest itself. To change the metaphor, ceasing to think would not be like closing one's eyes, but like putting out the lamp. For this reason, thinking was for Descartes something that could not be disentangled from his existence; it was the very essence of his nature."

For Kant, not thinking as such, but freedom and rationality - the prior conditions for thought - are the essential "manifestations" of man's nature. And as our free natures are actualized in action, action must, given Kant's argument, be rationally structured with respect to the ontological ground of spontaneity. Hence, heteronomous action over time is destructive of man's nature.

By placing heteronomy and autonomy within the context of a theory of dispositions Kant can provide for the development of the personality in conjunction with the development of the moral life. Although Kant's own final solution to the problems arising because of his conception of freedom - such as the problem of forgiveness as discussed by Silber 9 - is inadequate and demands changes in his conception of freedom as he originally formulated it, this leaves unaffected Kant's characterization of freedom and reason as expressive modes of our nature - spontaneity. The advantages of ascribing a dispositional nature to Willkür are obvious. Most important, Kant can give an explanation of good and evil, and variations anywhere

between these two, as moral predicates of human agents. On the grounds that one's moral nature is exhausted in a single action, any reasonable evaluation of one's moral worth is rendered impossible. Kant's actual presentation of his theory of the will in the Religion is meant to explain the intimate relationship of our transcendental freedom, the moral law - the law of our nature - and the fulfillment or gradual loss of personality. For the purposes of providing an analysis of the will in moral conflict, Kant separates the will into two parts: the Willkür, the power to choose between alternatives, and the Wille, the normative aspect of the will - the moral law - which presents the Willkür with the conditions for its self-fulfillment by acting autonomously and rationally. When presented with the moral law by the Wille, the Willkür chooses either to act in accordance with the condition for its own fulfillment or against that condition and suffer the consequent diminution of that very power which it actualizes in order to make the choice it is confronted with. By choosing to act in accordance with the condition for its fulfillment and actualize its free nature autonomously, the will, through the choice of the Willkür, becomes rational, and reason, which is here represented by the Wille, as the rational structure of its nature, becomes practical. The normative structure supplied by Wille, is adopted freely by Willkür. Even though the Willkür is free to choose to accept or reject the incentive of Wille

in the form of the moral law as the norm of action, the very possibility of the functioning of Willkür depends on a minimal consideration of the law presented to it by Wille. Again, without the necessity to consider the choice it ought to make in order to actualize its free nature, the very concept of a free nature would be nonsense; if there is a freedom for then there must be a freedom against. Thus Kant: "In seeking, therefore, the ground of the morally-evil in man, (we find that) sensuous nature comprises too little, for when the incentives which can spring from freedom are taken away, man is reduced to a merely animal being."

(Religion, p.30) It is the interdependence of man's freedom and rationality which underlies the requirement that Wille supply an incentive for Willkür; no incentive would imply pure freedom, i.e. there would be nothing to be free from, and such a concept of freedom is completely non-rational. In other words, Kant's argument amounts to a claim that there is one and only one rational pattern for human action; as I have said, accepting that the power of spontaneity is the ground of action, then, human action is structured as is this spontaneous power. The structure of spontaneity is freedom and reason, including as these do, the choice to either destroy or preserve that structure with respect to man's nature; and to preserve that structure, i.e. to act in such a way that our actions will not be self-defeating, we must act in accordance with this pattern of action. In fact, Kant's argument proceeds

characterized by struggle and conflict.

from an analysis of the will into Willkür and Wille to those conditions necessary for the successful functioning of the will, and, lastly, to the postulation of the moral law as the condition for the self-preserving functioning of the will. Kant again: "To conceive of oneself as a freely acting being and yet as exempt from the law which is appropriate to such a being (the moral law) would be tantamount to conceiving a cause operating without any laws whatsoever (for determination according to natural laws is excluded by the fact of freedom); this is a self-contradiction." (Religion, p.30) Kant conceives of an evil disposition in a person as a Willkür which continually chooses to reject or act against the incentive provided by the Wille.<sup>10</sup> Such a destructive pattern of action leads to the inevitable and at least, in principle, total loss of freedom; in such a person, no personality to speak of would be left, his nature would be that of an animal.

Kant's conception of morality, his notion of men as moral beings, can now be comprehended as derived from his theory of freedom and reason according to which they are interdependent and essential predicates of man's being. As supplying the structure of spontaneity, freedom and reason are the expressive modes of our natures as finite beings; by grounding freedom and reason in spontaneity and thus effecting their ontological interdependence, Kant can at least formulate the beginnings of an account of our real moral experience, an experience which is primarily characterized by struggle and conflict.

4. If, as I have been arguing, freedom and reason in Kant's philosophy are rooted in the power of spontaneity, then an ontological interpretation must be provided for the reciprocal activities of reason and freedom. For reason, both theoretical and practical, i.e. with respect to judgment and with respect to action, is dynamic and not merely logical. Kant recognized these two aspects of reason as early as The Inaugural Dissertation (= ID) 11 where he clearly distinguishes between the logical and real use of reason. Spontaneity, "the mind's power of producing representations from itself" (A51 = B75), is the ontological ground for the creative and dynamic use of reason in understanding, imagination, artistic appreciation, and morality. Kant leaves the epistemological status of spontaneity as a power rooted in human subjectivity, ambiguous, but this is what we would expect. Kant's elaborate defense of his conception of reason and freedom comes to depend on the existence of a real source in terms of which Kant can provide at least a prima facie plausible account of the structure and powers he has attributed to these two essential predicates of man's nature. Spontaneity may be inscrutable but it is no less real for that. Unfortunately for Kant, he is not allowed to simply grant that spontaneity is cognitively opaque but existentially real. Aside from the highly counter-intuitive flavour of characterizing something as manifesting itself as real while at the same time remaining inscrutable (that is,

entirely unknowable) to our cognitive capacities Kant is committed to remaining, at best, neutral with respect to the reality of anything lying outside the causal categorial framework. Spontaneity, as the source of the unconditional law of our nature and the source of the freedom essential to thought, is unconditioned. Accepting that Kant's model for causal order is the conception of a conditioned series, and that anything not causally ordered in this way becomes theoretically incomprehensible with respect to its reality, then, Kant's theoretical framework, controlled as it is by the epistemology of transcendental idealism, cannot authorize the recognition of the reality of spontaneity. Furthermore, when we lay these two 'facts' of Kant's system side by side, namely, that the world is a world of appearances (the thesis of transcendental idealism argued for in Ch. I) and the power of spontaneity which is the source of the form of the world of appearances, must it not be admitted that there is at least one thing in the world, or somehow effectively engaged with the world, which is other than appearance? Silber, without detailing the problem, hints at the central problem raised by the power of spontaneity as the unconditioned source of appearances for Kant's system when he says: "Only the desire to avoid needless conflict ... prevents my saying that spontaneity is the ontological foundation of both rationality and freedom in Kant's philosophy." 12 The conflict, however, is hardly needless; it represents a problem central to Kant's whole

enterprise, viz. the problem which arises because Kant's world, his ontological horizon, is determined by the forms of human subjectivity. Anything not shown to be thus determined, cannot be shown to be objectively real. Kant's problem of ontological diversity as evidenced in his failure to account for spontaneity parallels the problem of establishing the objectively real. Since Kant believes there to be only one objectively valid categorial framework, he can only recognize as objectively real, whatever fits, or is authorized by, that framework. In light of this, it becomes understandable why Silber should think that the conception of spontaneity as ontological ground, can be incorporated into Kant's system without resulting in profound change. Silber maintains, at least appears to maintain, that the account of the categories provided in the CPR ought not to be regarded as Kant's last word on how nature and experience are made comprehensible to us. 13 In fact, Silber suggests that we replace this conception of nature with the conception offered by Kant in CoJ, namely, nature understood according to the principle of finality. Briefly, the advantage in this is that our categories would not be constitutive of nature but simply regulative, i.e. standards guiding our inquiry into nature; and, of course, we would have different defining regulative categories for the different frameworks, moral, teleological and scientific. Once the constitutivity of the categories is redefined as merely regulative in effect, nothing stands in the way of

compatible diverse frameworks within which to explain different kinds of objects. Silber states that the principle of finality is regulative and not, like the categories, constitutive; furthermore, the principle of finality is a completely objective principle for it is, as Kant makes clear in CoJ, necessary for our knowledge of living things and the acquisition of scientific knowledge. According to Silber, "Finality, ... is a regulative, reflective principle when used at the behest of science. And as a reflective principle it does not conflict with either a reflective or even a determinate employment of the idea of freedom; both principles may be used to interpret the same account." 14 Silber's suggestion amounts to a rejection of the radical distinction between the constitutive and the regulative, thus allowing for the use of different sets of principles with which to understand different kinds of objects, e.g. living things, men as moral agents; there seems to me, however, to be one basic difficulty with this kind of suggested re-interpretation of Kant's original theory. It is true that the central defect in Kant's theory of experience is that the categories alone determine what is to be regarded as the objectively real but the remedy is not to reject the concept of 'constitution' completely. Without the idea of the constitution of nature in general by the categories, as presented in CPR, how are we to distinguish between differently constituted sets of objects or kinds of things at all? We

could not say that there were parts of experience that are really different from one another because different kinds of things are involved. The world of moral experience is different from the world of material objects not merely because the principles we use in explaining each world are different; rather, they are different fundamentally because the things in each realm are differently 'constituted'. To reject Kant's account in CPR of the categories completely would be to lose the concept of constitution as well and as objective validity is possible only through the constituting work of the categories, objective knowledge with respect to any realm of experience would be impossible. The realms of moral experience and living things are differently constituted from the realm of material objects to which the categories are applicable; this is entailed by the fact that the categories are not constitutive of realms other than what Kant calls 'nature'.

Kant's problem then is this: Only the categorial framework of CPR is objectively valid and only the kind of thing constituted within this categorial framework is objectively real. Spontaneity, the unconditioned ground of reason and freedom, is an ontological type different from that legitimized by the categories - thus, the ontological kind to which the source or ground of reason and freedom belongs, is rendered illegitimate. Neither the world of moral experience nor, as we shall see in the next chapter, the world of living things, can receive author-

ization as ontological types different from the type constituted by the categories. Either an object is of the kind defined by the predicate 'is a material thing', or it is not objectively real.

5. By way of offering support for my argument that Kant's ontology lacks the diversity required to account for the different kinds of entities there are in the world, I want to conclude this chapter by briefly discussing an interpretation of Kant's metaphysics which is sympathetic to the position I am assuming in this essay. This is the interpretation offered by Heidegger in his writings on Kant. 15 According to Heidegger, Kant's CPR is fundamentally a work in ontology. Heidegger does not deny that Kant is concerned with discovering the conditions of the possibility of experience, or, the conditions of the possibility of knowledge, but he does deny that the establishment of objectively valid knowledge was Kant's ultimate concern. On the contrary, Kant was interested in the conditions for the possibility of knowledge because he realized that it was only by comprehending the finitude of human knowledge - in what that finitude consists - that metaphysics, which for Heidegger is always concerned with the realm of being, can be firmly established. For Heidegger, the importance of thought (= reason) in Kant's metaphysics, merely evidences Kant's central insight that our way of asking about the thing is essential to the

discovery of what things can be for us; thus, Heidegger states:

"But how can it be explained that in spite of the fundamental and authoritative significance of intuition in human knowledge Kant himself places the main problem of the analysis of knowledge into the discussion of thought? The reason is as simple as it is obvious. Precisely because Kant - contrary to rational metaphysics, which put the essence of knowledge into pure reason and into mere conceptual thought - posits intuition as the supporting fundamental moment of human knowledge, thought must now be deprived of its former presumed superiority and exclusive validity. But the Critique could not be content with the negative task of disputing the presumption of conceptual thought. It had first and foremost to define and ground anew the essence of thought. The extended discussion... of concept and judgment is the clearest proof that from now on intuition will remain the authority without which thought is nothing." 16

Heidegger's thesis centers around the claim that intuition is the defining characteristic of human finitude and as such, is the controlling contributory element in knowledge; it is through intuition that the object, i.e. what is to be re-presented, is first given and given for that which represents (= the subject). 17 But the "givenness of the given" (What is a Thing, p. 217) is made comprehensible to us through the principles of the understanding which effect the forming of the standing-against of the object for human pre-senting (Vor-stellen). Briefly, Heidegger seems to mean that the objects of knowledge do not hover in a limbo, they must encounter us from somewhere, a

suggestion Heidegger makes plausible by referring to Kant's term for object, namely, Gegenstand (gegen = against). What encounters us in this way is determined by the principles as an object, or, as something which is constant, something which has a stand. It would be out of place to detail here Heidegger's analysis; in any case, a condensed version of his position will suffice to allow me to make my point with clarity. Heidegger has grasped that any theory which grounds the objectivity of objects in the nature of subjectivity can only do so by making those features of objects of knowledge which are universal, characteristics, and essential characteristics at that, of the knowing subject. That this is Heidegger's position can be seen from his closing remark to What is a Thing?, (p.244) that "The question 'What is a thing?' is the question 'Who is man?'. Kant's claims about intuition and understanding and their role in knowledge, are since they are claims about our cognitive faculties, claims with respect to the nature of man. Space and time as the forms of intuition for knowing subjects and the principles of understanding, are also of course, minimal conditions for the possibility of experience, or, the conditions for the possibility of knowledge of objects; therefore, epistemological questions pertaining to the cognitive and intuitive constitution of man as finite knower are at the same time ontological questions involving the nature of things. Kant's manner of asking about the thing thus leads ultimately

to ontology: the being of man as finite knower.

The most significant aspect of Heidegger's reading of Kant, at least from the perspective of this essay, is that Heidegger effectively provides an ontological casting of the 'Analytic' of CPR, an ontological reading that is anchored in his theory of the time-structure of the transcendental imagination. The principles of the understanding become conditions of the possibility of objects of experience as well as conditions of the possibility of experience. Although Kant himself says as much at A158 = B197 of CPR, he fails to show how this is possible within the context of an epistemological reading of CPR. For what the claim amounts to is this: the epistemological features of predicates of the knowing subject are likewise (= at the same time - Heidegger) ontological predicates. Those categorial features which objects must possess if they are to be knowable are the defining predicates of the finite knowing subject. Again, it makes sense to ground knowledge in the nature of subjectivity only if the essential defining predicates of the knower are, or form, the horizon within which objects can be known; and this is the position Heidegger wishes to advance (in his own way). He states: "...the act of orientation which lets something take up a position opposite to...forms as such the horizon of objectivity in general. The going beyond to ..., which in finite knowledge is necessary in advance and at every moment, is

accordingly a constant ex-position to ... (Ekstasis).

But this essential ex-position to ... in its position forms and pro-poses to itself a horizon." 18 For Heidegger, Kant's categories and principles of the understanding as well as space and time as forms of intuition, are the grounds of objectivity in the sense that they prepare or anticipate the horizon within which finite knowers can comprehend things as things. In What is a Thing?

Heidegger provides an interpretation of the principles of understanding according to which they are conditions of the possibility of things in that they define the onto-logical horizon of objectivity. The principles express "only the highest principle, but in such a way that in their belonging together they explicitly cite all that which belongs to the full content of the nature of experience and the nature of an object." 19 This interpretation of Heidegger's regarding man's finitude and objectivity draws out and makes explicit what is already present in Kant's work, especially the CPR. Kant's doctrine of sensibility characterizes man as finite knower while the hegemony of the categories, as we have seen, implies that the criteria for objective knowledge, for the objectively real, can only be satisfied within the framework specified by the categories. Heidegger simply exploits Kant's original position that, by grounding all knowledge in the nature of subjectivity, objectivity is limited to and by, the forms of the knowing subject.

Heidegger's programme then can be seen as an attempt to show that either we accept the ontological implications of Kant's position (transcendental idealism) or accept that Kant fails to explain how the categories and the principles lay the ground for the objectivity of objects, or, the thingness of things. The connection between man's finitude and objectivity is problematic for Kant since he must show how the principles define the ontological horizon of objects; in both What is a Thing? and Kant and The Problem of Metaphysics Heidegger tries to explain this problem of Kant's. The following passage from the latter work is one of the clearer explications of the nature of the problem and what is required to resolve it:

"A finite cognitive being is able to relate itself to an essent which it itself is not and which it has not created, only if this essent can by itself come forward to be met. However, in order that this essent can be encountered as the essent that it is, it must be recognized in advance as essent, i.e. with respect to the structure of its Being. But this implies that ontological knowledge, which in this circumstance is always pre-ontological, is the condition of the possibility that an essent as such can, in general, become an object for a finite being. All finite beings must have this basic ability which can be described as a turning toward... which lets something become an object.

In this primordial act of orientation, the finite being first pro-poses to itself a free space within which something can correspond to it. To hold oneself in advance in such a free-space and to form it originally is nothing other than transcendence which marks all finite comportment with regard to the essent. If the possibility of ontological knowledge is based upon the pure

synthesis, and if it is ontological knowledge which makes the act of objectification possible, then the pure synthesis must manifest itself as that which organizes and supports the unified totality of the intrinsic, essential structure of transcendence. Through the elucidation of the structure of the pure synthesis the inmost essence of the finitude of reason is revealed." (Kant and the Problem of Metaphysics, pp. 74-75)

The "turning towards" and "recognizing in advance" are Heidegger's explanation of Kant's assertion that we, as finite beings, possess a capacity for receiving representations, i.e. intuition; for Heidegger, it is not sufficient to simply state that intuition is the defining mark of human finitude. What requires explanation is how this is possible if our structure as finite beings is not in some way already 'tuned' to the ontological structure of what is intuited. Heidegger's answer is that we define the horizon within which things can be known but this means that our essential predicates as knowers are ontological, not epistemic only. It is this ontological structure which Heidegger goes on to describe as belonging to the transcendental imagination.

If Kant does, as I have been arguing, locate the source of objectivity in the nature of the knowing subject, then Heidegger is at least correct in suggesting that an ontological characterization of the structure of subjectivity is required. Is this not a minimal requirement if subjectivity is to ground objectivity?

Heidegger's interpretation of Kant's metaphysics highlights the central problem of Kant's theory of object-

ivity: if the foundations of objectivity do not lie in the nature of the object, then they must be located in the nature of the subject; but a theory of objectivity which locates the grounds of objectivity in the subject can only explain how this is possible by making the epis-  
temic predicates of the knowing subject, ontological pre-  
dicates. As our discussion of Kant's transcendental idealism makes clear, the effect of grounding objectivity in subjectivity is that the ontological horizon within which objects can be known as objects, is defined by the forms of subjectivity, and this leads to the further pro-  
blem with respect to the ontology of Kant's world - the problem of the last section - that Kant's ontology is insufficient as an account of the multiplicity of kinds of entities in the world. To support this argument, I shall consider Kant's notion of living organisms within the context of the principle of teleology. Living organisms fall outside the realm of things constituted by the categories; the question therefore arises - What kind of ontological status are we to accord to living things?

# Teleology and Living Things: Ontology

## Chapter III

"But where a thing is recognized to be a product of nature, then something more is required .... if, despite its being such a product, we are yet to estimate it as an end, and, consequently, as a physical end .... I would say that a thing exists as a physical end if it is (though in a double sense) both cause and effect of itself." (CJ: No. 64)

1. If the overall argument of Ch. II is correct then the hegemony accorded to the theoretical framework of the categories of CPR does not allow for the possibility of moral experience as we know it. Since the only objectively valid theoretical framework seems to be that defined by the categories, anything not falling within this framework, or whose possibility cannot be demonstrated therein, must be located outside the realm of knowledge proper; thus, persons as agents are not really a part of the world of material things and their apparent interaction with the world of material things must remain unexplained. Persons are in some sense, however weak, 'outside' the world of material things which is objectively grounded - persons, according to this account, belong to the world of noumena. I want to strengthen this argument by examining in this chapter another area of Kant's philosophy - his analysis of teleological judgment with respect to living things - with an aim to showing that here too we witness Kant's inability to countenance entities which fall, or seem to fall, within an explanatory framework (at the most general level of explanation) that differs

from that defined by the categories of CPR, where, as we have seen, the failure to legitimize a framework other than that of CPR amounts to a failure to provide an account of how certain kinds of things, persons, living things, belong in the world rather than outside it.

The forms of explanation used to understand biological and organic phenomena differ from those used to understand and explain ordinary physical phenomena. Now that we have a fully-fledged science of living things - biology, the explanatory power of which extends even to the cellular micro-structure responsible for the transmission and change, through time, of biological forms themselves (the study of DNA in genetics, the child of biology), there is no longer the requirement to justify the use of a substantially different set of explanatory principles guiding the study of organic phenomena than that used to explain material and physical phenomena. The laws of matter in motion may be applicable to biological phenomena but they do not provide an exhaustive explanation of them, which is why Kant thinks a teleological framework is necessary for the comprehension of living things. The growth of the acorn into the oak is governed by the laws of matter in motion no less than inorganic phenomena are but in the case of the former what requires explanation is the apparent order which seems to be a built-in feature of the development of organisms. Organisms would be unproblematic if it were possible to

attribute intentions to them; in that case, organisms would, like ourselves, have goals, adopt ends and in general, be describable as goal-oriented beings. Because, however, we do not normally predicate intentionality of organisms, their apparent goal-directed activity is problematic and is not, Kant believes, made any less so by mechanical explanation. Kant thinks, or seems to think, that there are features of the organic world which are not describable within the mechanic framework of CPR; because living organisms possess qualities other than those possessed by physical things, we require a different set of concepts or principles in order to comprehend them, in order to investigate the realm of living things. However, although Kant thinks that living entities require a different set of concepts for their comprehension and explanation - expressed in Kant's suggestion that we regard living things as if they were ends of nature, i.e. as if they had been designed (by a maker of organisms?) - he does not think that this entitles us to say that living organisms are differently constituted than physical entities; in a word, Kant does not attach any ontological significance to the claim that organic phenomena require their own concepts for their comprehension. But if we are not entitled to draw conclusions about the features and properties of living things from the concepts we use to understand and explain them, then what does the alleged difference between living things and material things amount

to? Kant's response is that the only difference between the objects of the realms of material things and organisms is that different concepts and principles are required for the explanation of the objects within each realm. I shall argue that Kant cannot consistently maintain this position with respect to the difference between the objects of the realm legislated by the categories of CPR and the objects whose understanding requires a teleological framework, that is, I shall argue that the distinction between the two realms is a distinction between kinds of entities. Kant's reason for refusing to grant ontological significance to the distinction between the two realms, is of course, that he is committed to saying that the only categorial framework which is objectively valid is that legislated by the categories of CPR and to interpret the teleological principles as constitutive of living organisms and biological phenomena in general, rather than regulative of our investigation into them, would be equivalent to destroying the exclusivity of the categories with respect to the constitutivity of the objective realm. But if biological phenomena require teleological principles for their explanation, while material things do not, then surely there is some distinguishing ontological feature which they possess and that requires such a framework.

2. Kant thought that teleology was a problem because the framework of teleological explanation clashes with

the mechanistic framework of CPR; while mechanical laws might go part of the way towards explaining living organisms, such laws are in principle incapable of providing a complete explanatory framework for vital entities because, in a word, they cannot explain life itself. Furthermore, from the point of view of human knowledge and its attendant cognitive limitations, teleological principles are necessary for the explanation of organisms, i.e. we must regard organized beings as physical ends (CJ: No. 77). But this implies, as Kant realizes, that things regarded as physical ends are contingent with respect to the system of mechanical laws and that the universe itself, within the framework of mechanism, is contingent (CJ: No. 75). The necessity accorded to teleological principles with respect to organisms amounts to recognition on Kant's part of the different logic structuring our inquiry into nature of living things than that guiding our construction of mechanical systems of explanation. And what is this but a recognition that no one set of concepts or explanatory principles is sufficient to explain the diversity in kinds of things there are in the world to be understood? To extend the class of teleological concepts to all living organisms, all life-forms - non-human animals, plants - is to acknowledge the existence of a class of objects in the world with which we become familiar as we begin to understand how to use and improve upon, that particular class of concepts. In other words, while it is

true that the employment of a certain set of concepts in a particular language, at a given time and in a given place, could have been quite different assuming certain circumstantial changes, this only shows that no one set of concepts is 'necessary', i.e. another could have done the job. And what is important here is not that classes of concepts are not necessary but that this use of concepts and language is conventional, i.e. that such conventional methods for dealing with different kinds of situations objects, events, in the world, exist. The fact that we possess a set of teleological concepts and principles at all is evidence of a certain kind of object in the world the existence of which seems to demand such concepts for their comprehension; the fact that the set of legitimate teleological concepts is not fixed, that the very form of teleological explanation changes (witness the recent literature on the nature of teleological explanation) as the logic of teleological statements and descriptions is sharpened shows only that some explanatory systems are more or less successful than others. It does not alter the fact that some kind of teleological explanation is required to account for a certain sort of object, or class of objects, in the world. What I want to say here is that explanations are embedded in the world, so to speak, not because any one system of explanation is necessary or universal but because there exists in the world the class of objects which require

some explanatory framework; the existence of more than one class or kind of thing in the world requires that more than one system of explanation (concepts, principles) be used.

When we look at Kant's argument for the requirement that we have one set of concepts for living things and another set for ordinary physical things, we find that he says that the requirement is the result of the peculiar nature of our cognitive faculties: "By the peculiar constitution of my cognitive faculties the only way I can judge of the possibility of those things and of their production is by conceiving for that purpose a cause working designedly .... (this) is a subjective principle for the use merely of the reflective judgment, of which it is, consequently, a maxim that reason prescribes." (CJ: No. 75) The necessity involved with the application of teleological judgments is due ultimately to the requirements of our cognitive capacities rather than anything pertaining to the specific nature of organic phenomena. Whereas the fact that living organisms cannot be subsumed under the explanatory framework of mechanism suggests that living organisms are different in kind from ordinary physical things, Kant seems more concerned to demonstrate that the most we are entitled to assume is that the difference in explanation forms is a conceptual necessity - a requirement of our cognitive constitution. There is no ontological problem here

between entities of different kinds but a problem with respect to judgment. And this can be seen quite clearly for Kant leaves little doubt that he believes we must use teleological explanations because of the limitations of our human, all too human, perspective (= judgment). In the course of a discussion of the possibility of there arising a Newton who might effect a reduction of even the simplest organism, like a blade of grass, to purely mechanical principles (which, incidentally, Kant considers impossible), Kant suggests that the real reason for denying objective validity to teleological judgment is that we could never attain the perspective required for such knowledge, i.e. the perspective of a higher being who possessed intellectual intuition and for whom the intrinsic nature of organisms was apparent (ibid; 75). 1 Even more definite is Kant's discussion of the peculiarity of human understanding that makes the conception of a physical end possible for us, in No. 77 (ibid) where he says: "The difference turns, therefore, on a peculiarity of our (human) understanding relative to our power of judgment in reflecting on things in nature. But, if that is the case, then we must have here an underlying idea of a possible understanding different from the human ... the statement does not deny that a superhuman understanding may be able to discover the source of the possibility of such natural products even in the mechanism of nature ...". If we could overcome the disadvantages of our perspective,

then the requirement for more than one set of concepts would not have to be met. This response of Kant's is hardly surprising for (as Kant himself acknowledges in the same paragraph from which the above quote was taken) he has shown that, with respect to ontological questions, there are two methods he uses to deal with them; (1) Ontological problems are really problems of perspective, or, problems associated with objects or kinds of objects can only be dealt with from the perspective of knowledge of those objects or kinds; (2) Because Kant is committed to both conceptual necessity as the only means of showing the objective validity of a concept and to the thesis that the world is a world of appearances, ontological questions, i.e. questions pertaining to 'the nature of...' are always considered to have the supersensible as their proper domain, where the supersensible is anything other than the world of appearances. But if Kant thinks that recourse to the concept of the supersensible, in any of its Kantian forms, in the present context, is an explanation or even partial explanation - and presumably he does - for regarding teleological principles as maxims devoid of objective status, he is surely mistaken. First of all, any appeal to the concept of the supersensible, by Kant's own arguments elsewhere, is at best speculative even if, as in the present case, it is to show not that a concept or principle is objective, but merely subjective and regulative; if arguments depending on the conception

of the supersensible are ineffective for proving the objective validity of concepts then they are just as ineffective for proving the subjectivity, or, non-objective status, of concepts. However, there is a more telling argument against Kant's use of the concept of the supersensible in teleological contexts, viz: if different sets of principles are required to provide order and systematic unity to nature because there is genuinely more than one kind of entity to be organized, is there any reason for believing that this heterogeneity in nature and in the principles structuring our inquiries into nature, would be any different viewed from the perspective of the supersensible substrate of nature? Kant thinks that the teleological and mechanical modes of explanation required to account for living things and brute matter, can be referred to a common principle which is the source of both and which therefore, would assure us that the conflict between the two divergent modes of explanation (of one and the same natural phenomenon) is only apparent; the common principle being the conception of the supersensible substrate of nature. Kant states:

"...it is then to be presumed that we may confidently study natural laws on lines following both principles (mechanism and teleology - JD) ... without being disturbed by the apparent conflict that arises between the principles upon which our estimate of the product is formed. For we are at least assured of the possibility of both being reconciled, even objectively, in a single principle, inasmuch as they deal with phenomena, and these presuppose a supersensible ground." (CJ; No. 78)

Kant is proposing this as a resolution of the antinomic conflict between mechanism and teleology as explanation-forms but the attempt is a failure. There is no reason to assume that the supersensible ground of nature is uniform and homogeneous, either in its constituent entities or in its organization, when nature as phenomenon reveals heterogeneity in both. If anything, the opposite assumption would be safer having at least the merit of preserving a structural isomorphism between nature and its supersensible ground. There is no - even tentative - theoretical justification for the assumption that the real ground of nature, i.e. how things really are, is organized according to homogeneous principles and that its constituent entities are all of the same kind. One suspects that perhaps Kant is being pulled by the theological overtones associated with the conception of a supersensible ground into thinking that a divine intuitive intelligence would perceive uniformity and homogeneity in nature because antinomic conflict could hardly be said to exist for such a being; but even here, what objection would a god have to a nature consisting of a variety of kinds of entities and organized (therefore) by different sets of principles?

I have jumped to Kant's discussion of the supersensible in the context of resolving the alleged antinomy between mechanism and teleology because it exposes the real nature of Kant's problem. Rather than argue that

the antinomy is resolved in a supersensible ground - the conception of which Kant tokenly acknowledges to be indeterminate (ibid;No. 78) - we need only admit that there are a variety of organizing principles used in the investigation of nature and that nature is differentiated into kinds of entities. This option is not open to Kant; it is worth repeating that Kant's difficulty here as in his moral philosophy, is that if he recognizes the teleological framework for vital entities, the exclusivity or theoretical hegemony of the categorial framework (= the causal, mechanistic framework) of CPR would be destroyed. The result is that Kant's system cannot accommodate living things as a legitimate (objectively real) kind of entity in the world.

3. On of the central, defining issues in recent discussions of the nature of teleological explanation is whether teleology itself describes objective features of the world or teleological attitudes projected on to the world. 2 If teleological descriptions are to be regarded as true or false then it must be possible to find truth-conditions which would justify the predication of a truth value to them; however, teleological descriptions, e.g. 'The spider is weaving its web in order to catch the fly', might be merely interpretative, reflecting not an actual state of affairs in the world but the conceptualizing of the observer(s). We use teleological connectives such as

'in order to' as if animals, plants and other forms of natural life could really have purposes and intentions, whereas in fact the meaning of such teleological descriptions is analogical, i.e. it depends upon those teleological descriptions whose meaning is literal, e.g. 'The fisherman made his net in order to catch fish'. We can understand this statement to be literal because it allegedly reports an objective fact, i.e. that the fisherman did have the intention of catching fish and thought a net would be a good way of so doing. We can't suppose the same to be true of the spider, at least not with any considerable degree of certainty or confidence; teleological descriptions of animal life, other than human, are therefore to be understood as metaphorical primarily because it does not seem possible to establish truth-conditions which would allow us to demonstrate the truth or falsity of teleological descriptions or statements referring to natural life-forms. Those who regard teleological descriptions as literal, even though they acknowledge that teleological descriptions of organisms is problematic, hold that there are actual states of affairs or properties belonging to objects, that serve to establish the truth of teleological statements - it is a straightforward case of reference to something - a property, situation, state of affairs - whatever, in the world. The opposite camp, those who believe teleological statements to be essentially analogical, especially those referring to organisms, have been called proponents of 'projectionism';<sup>3</sup>

not surprisingly, Kant is regarded as one of the forerunners in this group. Kant's basic conviction with respect to teleological statements is that principles of teleology which underlie them are not constitutive of organic life but regulative only, in other words, teleological statements are not to be mistaken as descriptive of features of objective reality. Kant uses his distinction between reflective and determinant judgment to achieve this result, but, as I shall be arguing shortly, I do not think he succeeds here. For the moment, I want to sketch a defense of the literal view of teleological descriptions given above, against the objections of projectionism. I do not want to have to commit myself to this literal view with respect to teleology generally for the simple reason that I do not pretend to be familiar with the range of issues involved but it is evident that some such view as the literal view would be implied by the realist reading of this essay.

Kant's statement to the effect that we must regard living things as if they were designed, as if they were organized beings with physical ends, is equivalent to the statement that living things seem to have an intended function. When he states that "Organisms are ... the only beings in nature that, considered in their separate existence and apart from any relation to other things, cannot be thought possible except as ends of nature" (ibid; No. 65), Kant is recognizing the fact that it seems we cannot but think of organisms as things whose natural functions

or activities are essential to what they are and the carrying out of designated functions has all the characteristics of a being sufficiently organized as to be able to have ends, in this case, physical ends. But since we have no concrete knowledge of whether organisms were designed or who might have designed them, the most we are allowed to say is that they seem to have intended functions. Now since statements about the natural functions of organisms are not literally either true or false, they must be analogical, or based on statements about the functions of certain kinds of things which are literally true or false. Statements about the functions of artefacts are just such statements, e.g. the function of the tool shed is to house the joiner's tools. As has been pointed out; "Anyone who construes natural function statements as analogical is committed to holding that artefact function statements are literal." 4 The important point here is that it is the so-called 'literal' kind of function statement that provides the fundamental and initial semantics for teleological statements in general. On this account, the only aspect separating the two kinds of function statements is the lack of a set of truth-conditions for natural function statements. There is nothing to prevent us from saying that just as the natural function statements are analogous with artefact function statements, so the former have a set of analogous truth conditions related in some way to a set of actual truth conditions. The claims which natural function state-

ments make on reality may be just as 'objective' as those made by artefact statements in so far as they both equally reflect a state of affairs in the world. The lack of a known designer in the case of the organisms of the natural function statements is hardly sufficient reason for regarding the latter as merely subjective (as Kant does). Furthermore, there are function-statements with respect to biological phenomena that do not seem to be metaphorical at all, e.g. 'Wrists exist to support watch bands', is simply false and 'The function of the heart is to pump blood through the body' seems no less true because we do not know whether the heart was actually given that function by a designer. Many biologists, after all, accept that organs of the human body have functions and these same biologists profess not to believe in God. Another problem with the projectionist (Kantian) approach to natural function statements is that there appears to be no way of disallowing secondary or marginal activities of organisms from assuming functional status; if we are to say that it is as if the heart existed to pump blood through the body without specifying that pumping blood is indeed the function of the heart given the empirical evidence now available, then, since we are disregarding evidence provided by actual and possible discoveries, we can just as well say that the function of the heart seems to be to make a noise and it beats to that effect. The floodgates are open. Any aspect of the system of behaviour of an organism, no matter how secondary and merely concomitant with the primary activity

of the organism, could be framed within the projectionist's form of teleological description; there are no logical criteria for distinguishing, say, survival behaviour from the concomitant effects of that behaviour.

Another version of projectionism is the view that the ascription of goals to animals (non-human) is anthropomorphic. 5 Dogs do not and cannot intend to fetch the morning newspaper and thus cannot possibly have this as their goal. It is we who interpret animal behaviour in this way because it is an easy and natural means of understanding their behaviour. This view, as a general truth with respect to non-human animal life, is simply false; it is beyond doubt that some animals do have goals, e.g. chimpanzees and dolphins. As we discover more and more about animal behaviour it is becoming increasingly apparent that animals at the higher end of the evolutionary scale behave in a goal-directed way.

While the above arguments do not represent a knock-down case against the projectionist view with respect to teleological explanation of natural life forms, they are more than sufficient to indicate the implausibility of that view. Kant's projectionism is rendered even more implausible because he appears to want to draw rather weighty conclusions from the projectionist position. As I have said, because Kant regards teleological statements, and the teleological framework in general, as essentially no more than subjective norms useful as a means of making

natural life forms more intelligible to ourselves, he must (and does) on the basis of his own arguments, treat the teleological framework as non-constitutive of organic life-forms. Thus, Kant's commitment to projectionism and the theoretical framework for establishing objectivity of the CPR, obliges him to regard living things as an illegitimate ontological kind and as not existing in the world in the complete way that ordinary physical objects do. Because Kant packs so much into his conception of teleological explanation with respect to organic life, he has a lot to lose if his position turns out to be untenable-as now appears very likely. As one writer has put it, "There appears to be a different type of teleology here (i.e. teleology of organisms - JD), not assimilable to the artifact-model.... Whatever the correct analysis of these TDs (teleological descriptions of organisms - JD) may be, there is a strong presumption that they make at least some objective claims on reality."<sup>6</sup>

4. The peculiar aspect of Kant's apparent refusal to recognize organisms as a distinct ontological kind is that he identifies three characteristics of products of nature which they must have if the concept of a physical end is to be afforded objective reality. Kant states that, "It is they (Organisms - JD), then, that first afford objective reality to the conception of an end that is an end of nature and not a practical end." (CJ; No. 65) And

only that thing can be considered an an organism which is "both cause and effect of itself" (ibid; No. 64) and it becomes apparent in what follows in this section of CJ that what Kant regards as the distinctive traits of living things are their life-processess, i.e. the interaction and interdependence of the various parts of an organism in sustaining itself and in generating its own kind. In effect, these characteristics are the defining properties of living things and represent the kind of processes (metabolic) which constitute such entities and hence serve to differentiate organisms from physical objects. Kant does, therefore, seem to recognize that there is something essentially different about living things. As one commentator on Kant's concept of teleology has said: "It is evident that Kant saw clearly that natural organisms are quite different from machines in so far as they produce themselves, repair their own deficiencies, and so forth." 7 And the power in natural organisms to produce themselves and to literally change, or rather, transform, themselves is just what it is to be a living thing endowed with metabolic processess.8

Kant thus provides a basic account of the physical nature of organisms according to which they are set apart from the class of ordinary physical objects. Moreover, Kant complements this account by providing a set of teleological principles (the teleological principle which states that "an organized natural product is one in which every part is reciprocally both end and means" being the most

basic - CJ; No. 66) which operate as explanatory laws for organisms considered as basic physical but living things. Thinking the teleological principle is both universal and necessary as a regulative principle for organisms is equivalent to believing that this principle holds for this kind of entity and without some such principle we would not be able to understand the 'possibility' of living things at all. Nor should this be surprising, for the very conception of linking the possibility of a thing with a set of principles which are directed to the specific nature of the kind of thing in question, e.g. organisms, physical things, is a familiar one with Kant. Buchdahl has discussed in detail the extent to which Kant links the possibility of matter with laws referring to the essence of matter, i.e. forces or point centers of influence. 9 In MFNS Kant's procedure is to explain the physical possibility of matter in terms of the forces of attraction and repulsion and thus the laws of governing physical things are seen to refer to the basic properties of matter. For example, in MFNS in the chapter on 'Mechanics' where Kant attempts to construct the concept of matter as the moveable having a moving force, one of the propositions he tries to prove is Newton's third law of motion about the equality of action and reaction. This involves constructing, or, showing the possibility of, the agency of repulsive (and attractive) forces in the communication of motion between bodies, and, since Kant adopts a force theory of matter, i.e. matter consists ultimately of forces, Kant's project comes to seem like

one which tries to base the explanatory power of laws governing physical things on the basic properties of those things - forces. In the 'Observation' to his 'Proof' of the third mechanical law, Kant's opening remarks suggest that he may have conceived the matter this way himself: "This is, then, the construction of the communication of motion. This construction at the same time carries with it as its necessary condition the law of the equality of action and reaction." (MFNS; p.112; 549) 10 The point I want to make is this: Kant's claim to the effect that we must conceive of organisms as physical ends can be understood as a claim that because organisms are the kind of entities they are, (living) they are governed, in the sense of 'regulative', by teleological principles which are, as Kant himself insists, universal and necessary. And this is simply, or can be understood as being, a version of the explanatory model according to which physical laws govern things and in which the laws in question are made to refer to (and derive their explanatory power from,) the basic constituents of those things. In each case, we explain the possibility of the kind of thing in question, organisms or physical things, by a system of principles and laws certainly, but ultimately by reference to the basic constituent of the sort of thing in question. Thus we explain the interaction of physical objects, understand why it is that bodies do not burst asunder but are held together by attractive and repulsive forces, and, with respect to organ-

isms, we can understand the metabolic processes which constitute organic life and grasp the transformation of one species into another (with the aid of Darwin's theory of natural selection upon randomly generated mutations), and even the complete disappearance of one sort of thing can be explained. In each case however, and Kant insists on this, something basic remains unexplained, that is to say, within each explanatory framework, we reach the point where something must be accepted as an unexplained fact; in the case of physical things, what remains unexplained (as far as Kant is concerned) are forces and with respect to organisms, we cannot explain what exactly distinguishes vital entities from matter, i.e. life.

In light of the fact that Kant sees the need for an explanatory framework for organisms that differs from the mechanistic and that these organisms "afford objective reality to the conception of an end", what is there, on Kant's own principles, to prevent teleological principles from being constitutive rather than regulative? When we add Kant's stated thesis that mechanical laws cannot explain organisms (the latter are "contingent" with respect to the framework of mechanical laws) which seems to imply that we are dealing with different kinds of things, what possible reason is there for continuing to treat the teleological framework, i.e. the teleological principle (the principle of finality) as only authorizing subjective maxims with respect to the entities within its domain?

If organisms and ordinary physical things represent different ontological kinds and different ontological kinds have their own explanatory system structured by the defining characteristics of the ontological kind in question, then, Kant's own belief that mechanical laws cannot explain organic life, is vindicated. The laws governing physical things cannot explain organic life-forms because the latter are ontologically distinct entities governed by a set of laws structured explanatorily by the properties of organisms; thus, Kant's statement that organisms are physical ends tells us something about the kind of explanation organic phenomena will receive, the most general level of explanation for such phenomena. If we recall that Kant regards the principle of teleology as necessary for the comprehension of organisms, it becomes evident that Kant's position is that the teleological principles supply the most general explanatory framework for organisms just as the categorial principles of CPR provide the explanatory framework, at the most general level, for physical things. Both sets of principles are necessary for the comprehension of their respective kinds and we have no apparent reason for withholding 'constitutive' status from the one while granting it to the other. That Kant realizes the inadequacy of mechanical explanation for organic life is recognized by one writer on Kant's teleology when he says: "The modern philosopher who tries to reduce teleological statements to statements containing no teleological terms is also committed

to a vocabulary which he believes to be objective, the vocabulary of physico-chemical explanations. He is concerned to show that this vocabulary will do the job which is done by a teleological one. Kant, on the other hand, believes that a non-teleological vocabulary never can do that job, because the only non-teleological vocabulary available to us is a mechanical one and organisms are by definition fundamentally different from mechanical aggregates." 11 (emphasis mine) It may be objected that the reason Kant refuses to grant constitutive status to teleological principles is that both the principles of mechanism and the principles of teleology are applicable to organisms as methodological principles, that is, Kant thinks that no set of principles could be constitutive of living things. But there is a problem with this objection, viz. the principle of teleology, as I have said, is necessary for the understanding of organisms and therefore, on Kant's own arguments, is constitutive of them. Furthermore, to say that this is merely a subjective necessity is to miss the point for, if this was the case, then the principle of mechanism would stand on equal footing with the principle of teleology with respect to organisms; that it does not stand on equal footing with the principle of teleology should be evident from the fact that the latter is necessary for the explanation of organisms and does not have any application to physical things at all. The principle of mechanism, on the other hand, while it is applicable to

living things, insofar as they are also physical things, is not necessary for their explanation as living things.

The idea that the principles of mechanism and teleology are placed by Kant on the same footing has created surprise and puzzlement amongst some commentators. One of these says: "What is surprising is his assertion that biological investigation can as little do without the teleological principle as scientific investigation can do without the causal principle. However, in saying this, he is not placing them on the same footing. He has already called the teleological principle 'regulative', whereas the causal principle is a condition of objective experience ... without the latter principle we would have no experience at all. What Kant is claiming is that the two principles are necessary as methodological principles." 12 And again, a few pages on: "What is puzzling about Kant's discussion... is the fact that he calls the principle, 'All production of material things ... must be estimated as possible on mere mechanical laws' (the principle of mechanism - JD), a regulative principle .... That is, to repeat, he believes he has proved in the first Critique that the categorial principles are constitutive of nature and that they guarantee that nature is a mechanical system as conceived in Newtonian physics." Now suppose for the sake of argument that we ignore the arguments I have presented for regarding the principle of teleology as constitutive and go along with both Kant and the present commentator in

thinking it regulative; first of all, if both principles are methodological, as is maintained in the above passages then presumably they are on the same footing. The confusion that this commentator seems to have fallen into becomes apparent when it is recognized that Kant has two versions of the principle of mechanism, the causal principle of CPR and the regulative principle of mechanism of CJ, but only a regulative version of the principle of teleology. Placing the two principles on equal footing seems to be Kant's clear intention in this passage:

"They are, in fact, quite as unable to free themselves from this teleological principle as from that of general physical science. For just as the abandonment of the latter would leave them without any experience at all, so the abandonment of the former would leave them with no clue to assist their observation of a type of natural things that have once come to be thought under the conception of physical ends." (CJ: No.66)

So Kant clearly does see both principles as possessing equal normative strength and that is just to put them on equal footing. But can Kant place them on equal footing given his argument with respect to the grounds of the causal principle - of which the principle of mechanism is but an extended version, - i.e. the causal principle is essential to the possibility of experience and therefore constitutive of it? The justificatory basis of the principle of mechanism is transcendental even if it is used in only a methodological way in CJ, whereas the justificatory basis for the principle of teleology, according to Kant, is subjective necessity. Thus, they must be

of differing explanatory power, by Kant's own arguments and cannot consistently be regarded as similar even as regulative principles. And Kant realizes the problem here when discussing the antinomy of judgment, only, as we shall see more fully and have already glimpsed at, he thinks that at the level of regulative or reflective judgment, no conflict exists:

"...it may come to pass that judgment acts upon two maxims in its reflection, one of which it receives a priori from mere understanding (principle of mechanism - JD), but the other of which is prompted by particular experiences (principle of teleology - JD) that bring reason into play to institute an estimate of corporeal nature and its laws according to a particular principle." (CJ; No. 70)

Given that the principle of mechanism is rooted in an explanatory framework the principles of which are constitutive of the domain of things they range over, i.e. the causal framework of CPR possesses its own concept of an object, and, considering that the principle of teleology is rooted in a framework which is merely regulative, i.e. does not have a concept of an object of its own, there would appear to exist no justification for regarding these two principles as explanatory equal.

As I have mentioned, Kant does have, or appears to have, an argument designed to ease our worries about the compatibility of the mechanistic and the teleological principles. In short, Kant's strategy is to locate the principles of mechanism and teleology in the realm of reflective judgment which has no legislative power with

respect to the determination of objects but "is compelled to ascend from the particular in nature to the universal" (CJ; First Intro. IV) meaning that the search for principles (such as mechanism and teleology) "for obtaining a knowledge of the natural laws to be found in experience, and which are directed to assist us in attaining to conceptions, be these even conceptions of reason, wherever such conceptions are absolutely required for the mere purpose of getting to know nature in its empirical laws "(ibid; No. 69) is the proper function of reflective judgment. Thus, since both the principle of teleology and the principle of mechanism are methodological principles for science, Kant is placing the empirical investigation of nature (i.e. scientific methodology) within the domain of reflective judgment rather than determinant judgment. Also, Kant seems to remove all matters of methodology with respect to science from the domain of reason despite the precedent of CPR where reason as regulative was regarded as the architectonic platform for empirical science and its laws (CJ; No. 70 - where Kant is discussing the contradiction that arises from treating the principles of mechanism and teleology as constitutive and hence objective for determinant judgment, thus producing "an antinomy certainly, though not one of judgment, but rather a conflict in the legislation of reason.").

Kant thinks that the semblance of antinomy with respect to the principles of mechanism and teleology arises because they are mistaken as operative within the domain of

determinant judgment when their proper field of application, so to speak, is within the much less (ontologically) replete domain of reflective judgment. The latter is independent and autonomous with respect to the principles used to aid our investigations into empirical nature whereas the determinant judgment is tied to (and thus heteronomous) the rules and laws authorized by the understanding:

"The determinant judgment does not possess as its own separate property any principles upon which conceptions of objects are founded. It is not an autonomy; for its subsumes merely under given laws, or concepts, as principles." (ibid; No. 69)

Determinant judgment has no laws of its own with which concepts of objects could be determined; its activities are completely governed by the understanding which prescribes the appropriate principles determining concepts of objects and, to use Kant's language, legislates to the determinant judgment the authority to subsume the particular under the universal (concept of an object). It is because determinant judgment does not have any concept of an object that is its own, that no conflict could arise between different principles or laws (e.g. mechanism and teleology); thus Kant's remark that transcendental judgment "was not independently nomothetic" (ibid; 69)

The principle of mechanism states that "all production of material things is possible on mere mechanical laws" or in its regulative form, "all production of material things must be estimated as possible on mere mechanical laws"

(ibid; No. 70) and looks very much like the constitutive principle of causality of CPR slightly reconstructed as a regulative, empirical principle for the production of physical things. In this respect Kant builds into the conception of determinant judgment just what he wants to get out of it, for when the principle of mechanism and the principle of teleology are regarded as constitutive, determinant judgment is unable to prove either one because it (or, reason, as Kant refers to it here) lacks the legislating power required to determine a priori "the possibility of things on mere mechanical laws" (ibid; No. 70). Thus Kant's construal of determinant judgment fits the conception of the principle of mechanism as a regulative version of the principle of causality of CPR. This, however, is only half the story; for the principle of mechanism is that maxim which judgment, in its reflection, "receives a priori from mere understanding" (the other, the principle of teleology, being prompted by particular experiences). But how else could judgment receive the principle of mechanism from the understanding unless the determinant judgment which possesses conceptions of objects in general (rules, principles) whose origin is the understanding, was, so to speak, already disposed to receive such a principle? Reflective judgment is excluded from having concepts of objects in general but determinant judgment, clearly, in making use of the principles and rules of the understanding, is extending, by filling in the empirical detail, the concept of an object

in general specified by the categories. In the application of the principle of mechanism to physical things which can be accounted for by empirical laws, judgment is simply (empirically) specifying further the concept of an object in general. And doesn't Kant himself say as much when at the beginning of the discussion of the antinomy of judgment, he states:

"Thus transcendental judgment, which was shown to contain the conditions of subsumption under the categories, was not independently nomothetic. It only specified the conditions of sensuous intuition upon which reality, this, application, can be afforded to a given conception as a law of the understanding." (ibid; No. 69)

To specify the conditions of sensuous intuition is just to specify the conditions which any object must satisfy if it is to be an object of possible experience; any thing belonging to the world will possess those features specified by the categories, at the most general level of description for objects (physical things). Transcendental judgment, through determinant judgment, furthers the specification by describing or presenting the conditions for a description, of the physical character or nature of material things. Even if we accept that there can be no direct clash between the principles of mechanism and teleology granted Kant's now rather cosmetic looking and arbitrary definition of determinant judgment - even if we grant Kant this much - the principle of mechanism remains a specification of the concept of an object in general, only more specific and particular than the minimal specification provided by the

categories. But if this is true then there is some difficulty in trying to allow for the parallel explanations of mechanism and teleology for Kant himself agrees that the principle of teleology is transcendent for determinant judgment. If teleology is transcendent for determinant judgment then mechanism, accepting our argument that mechanism is the more specified version of the concept of an object at the level of empirical laws, must conflict with teleology.

It now begins to appear as if Kant's distinction between the reflective and determinant judgment is rather superficial, at least, it does not accomplish what Kant hoped it would, i.e. to free the principles of mechanism and teleology from conflict by making them regulative and not embedded in a framework which must "subsume" in accordance with a general prescription for the concept of an object. When Kant says that determinant judgment is not autonomous this means that the rules and laws of that faculty are those of the understanding and that determinant judgment must carry out its activities in a way which is consistent with the framework of explanation provided it. By locating mechanistic and teleological principles in reflective judgment Kant hopes to escape this commitment to a framework for a concept of the object:

"On the other hand, looking to the maxims of a reflective judgment as first set out, we see that they do not in fact contain any contradiction at all. For if I say: I must estimate the possibility of all events in material nature, and, consequently, also all

forms considered as its products, on mere mechanical laws, I do not thereby assert that they are solely possible in this way, that is, to the exclusion of every other kind of causality." (ibid;No. 70)

Now Kant's categories are specifications of the concept of an object at the most general level of theory and as such they are the minimal conditions which any object must satisfy if it is to be an object at all. This means that any further specification of the concept of an object in general at a level where theory is concerned with detail (laws and science) and filling out the specifications initially provided, must at the very least fit the more general specification. If mechanism is a more detailed specification of the concept of an object then it must not conflict with the kind of specification provided at the minimal level, in short, the specifications at each level must be congruous with one another. And the framework of explanation for living organisms provided by the principle of teleology does not fit Kant's initial and minimal specifications, regulative or otherwise. The point is, that Kant's construal of the categories of CPR as a theoretical hegemony disallows the adoption of any framework of explanation, at any level, however specified, that doesn't agree with it. Teleology, even though it is operative in the realm of investigation into nature, is precluded by the plan for a concept of an object, formulated in CPR. Pushing the whole discussion into the domain of reflective judgment does not seem to be addressing

the problem. Kant's problem is that the principle of mechanism is applicable to material things and is thereby involved in the overall plan for specifying the concept of an object in general. As such, the principle is embedded in the framework initiated by Kant's plan for the concept of an object in CPR and with which the principle of teleology does not fit. Kant argues that the principles of mechanism and teleology originate in the autonomous faculty of reflective judgment, the faculty which, as it were, is free to produce whatever principles are required to aid our investigation into nature; "But in respect of the particular laws with which we can become acquainted through experience alone, there is such a wide scope for diversity and heterogeneity that judgment must be a principle to itself, even for the mere purpose of searching for a law and tracking one out in the phenomena of nature. For it needs such a principle as a guiding thread, if it is even to hope for a consistent body of empirical knowledge based on a thorough-going uniformity of nature - that is a unity of nature in its empirical laws." (ibid; No. 70) This implies that reflective judgment is a cognitive faculty for which the production of any kind of principle is justified; but how can Kant possibly hope to account for such a free, unconstrained form of judgment, given the defining structure of the overall cognitive situation provided in CPR? And the faculty of judgment is, after all, architectonically placed between

understanding and reason, a placing that would not seem to license such an unfettered cognitive capacity.

5. While Kant on his own principles cannot justify the adoption of an autonomous faculty like reflective judgment, it is just such a faculty which is presupposed by the fact that we now have a science of biological phenomena and the fact that we can and do distinguish living organisms from ordinary physical things. And if we are able to do this, then we must already understand what, in a minimal way, it is for a thing to be a living thing, or, in the Kantian terminology, reflective judgment contains those conditions required to identify (in order to distinguish and individuate) organisms. Accepting my argument that Kant specifies the life processes which serve to individuate organisms then Kant has provided the materials for understanding, or, approaching a knowledge of, such entities. Why should we not regard our knowledge of organic life as objective? Kant has a model for the 'objective validity' of a concept of a thing (at least for the kind of sortal concepts, 'is a material thing', 'is a living thing') according to which a concept can be considered objectively real if we possess the conditions for showing a priori that the object, or kind of object, which the concept is of, is a possible object. To understand the possibility of an object answering to the concept of /

an object in general we must be able to understand an object the most general features of which are those described by the categories; to understand the possibility of an object which fits the specific explanatory framework (laws and principles) of mechanism we must be able to understand not just an object possessing the general features belonging to the class of objects described by the categorial system of CPR but a class of objects which do, as a matter of fact, fit some system of mechanical laws and explanation; I believe this is Kant's project in MFNS, accepting Newton's laws Kant attempts to construct physical objects from forces and thereby demonstrate that it is because physical objects are constituted by forces that they are susceptible to explanation within the Newtonian system. Showing this involves a recognition that it is something about physical things (what they are ultimately composed of) that makes them the sort of things they are and accounts for their comprehension and explanation by us (science) within the mechanistic mode. Of course, Kant's metaphysics of experience will not support such a reading of the nature of matter if only because in a world of appearances (the thesis of transcendental idealism: no entity characterized as physically, or micro-physically basic, i.e. unconditioned, is allowable. Thus, I argue that we must adopt a form of Leibnizian realism to render Kant's physical theory (matter as forces) philosophically plausible. This is the subject of the final chapters of

this essay; to return to the question of understanding the possibility of an object as a means for showing a priori the objective reality of a concept; with respect to teleological principles and teleological statements of organisms, one might expect Kant's characterization of them as merely regulative, i.e. not constitutive of the objects they range over, to be a result of Kant's position to the effect that we cannot show a priori the objectivity of the teleological principle. As it turns out, Kant does think that the concept of a physical end is inexplicable for "... in order to make use of this conception dogmatically for the determinate judgment we should have first to be assured of its objective reality, as otherwise we could not subsume any natural thing under it. The conception of a thing as a physical end is, however, certainly one that is empirically conditioned, that is, one only possible under certain conditions given in experience. Yet it is not one to be abstracted from these conditions, but, on the contrary, it is only possible on a rational principle in the estimating of the object. Being such a principle we have no insight into its objective reality, that is to say, we cannot perceive that an Object answering to it is possible." (ibid; No. 74)

Since Kant obviously does think that we must use teleological principles to aid our investigations into nature, it is clear that he regards our use of such principles as empirically necessary, that is, in order to

comprehend biological phenomena - the "empirically conditioned" kind which justifies the use of the concept of a thing as physical end - we must use teleological concepts; yet this use of teleological principles notwithstanding, we do not, according to Kant, indeed, cannot, really understand-in the sense of obtaining objective knowledge of the nature of the kind of entities involved. We will never really understand what we are doing because we can never show a priori the possibility of an object answering to the concept of a physical end. Kant has a problem here: if, as I have been arguing, mechanism is, or, can consistently be taken to be, a more detailed specification of the concept of an object, - a filling out of the categories at the empirical level - then evidence for the truth of the principle of mechanism will depend on how successful such a principle is in aiding our inquiries into nature, but this is not sufficient to demonstrate the objective reality of the principle; for that, on Kant's own arguments, we would have to show that some set or class of objects exist which fit the description or explanation provided for them by some set of mechanical laws (as well, of course, that there is a set of appropriate mechanical laws). What other meaning could the idea of empirically specifying the categories (in turn, specifications of the concept of an object in general) have if not that there are physical things meeting the empirical specifications of the categories and that there are mechanical laws which do

allow us to comprehend and explain these things? This argument is all the more compelling when we see that Kant, in *MFNS*, attempts to 'construct' the concept of a physical thing out of forces or point centers of influence and to show that it is because physical things are composed of forces that they fit the particular explanatory framework of Newton's laws; furthermore, each chapter in *MFNS* contains a definition of matter and each one of these definitions is building into the concept of matter that Kant is working towards, an empirical specification of the concept of an object in general which the categories of *CPR* specify at the most general level of experience. This is not Kant's project in *MFNS* as he conceived it, or, more safely, I do not wish to contend that it is. In the final chapter of this essay I will argue that this kind of interpretation of *MFNS* is most feasible, apart from what Kant did or did not think he was doing there.

If the principle of mechanism is an aid to our empirical inquiry into nature while being, at the same time, a further specification of the concept of an object in general, it follows that the concept of an object in general provided by the categories can receive empirical vindication (by science, at the level of organized knowledge) only if the kind of object in question can be shown to be possible; and since what is in question in regard to the principle of mechanism is a system of mechanical laws

ranging over the kind of thing, then, what is involved in showing the objective (empirical) reality of the concepts of objects alleged to fit some mechanistic framework, is demonstrating that, in Kant's words slightly adjusted, "we can perceive that an Object answering to it is possible" (final sentence of previous quotation). This implies that one could be wrong about the principle of mechanism since it may turn out that as a more complete filling-out of the categorial concept of an object in general, we should find no one particular set of mechanistic principles which could be regarded as the empirical specification of the categories. Given the change in accepted paradigms in the history of science, especially physics, this is no mere possibility and we need only remember that Kant himself thought that Newtonian science, as an actual description of the way the physical world could be said to be, very near to being the permanent science. In MFNS Kant clearly thinks that it is just this sort of physical thing - the sort constituted by two opposing forces - that can be explained mechanically by Newton's laws of motion. If material things are, or can be, shown not to be composed of centers of attraction and repulsion, then the laws ranging over them will cease to do so. In other words, showing the possibility of things answering to our a priori and most general concepts of them, involves ultimately demonstrating empirically that such things are physically possible, that they fit our empirical specifications and

our most general specifications, because they consist of the stuff they do consist of. If this interpretation can be shown to be a plausible one for Kant then it will show that Kant never really rid himself of his Leibnizian tendencies. There is of course a strain of idealism in Leibniz but I believe this can be ignored without damage to the stronger and more explanatorily powerful realist leanings. Leibniz's idealism has the appearance of being imposed for the purpose of achieving the aims set by his other philosophical interests, especially his penchant for logical order; in a word, Leibniz's idealism is more like a structural clamp than cement which becomes part of the content. I cannot argue in this essay directly against Leibniz's idealist tendencies except where I think his idealism directly prevents the adoption of some position or interpretation of some position I wish to provide.

Kant acknowledges that the teleological concepts are empirical or, more accurately, empirically conditioned (previous quotation) and that the principle of teleology stands on the same logical level as principle of mechanism. And we can now see that this is eminently sensible although not quite in the way Kant envisaged. Since the principle of mechanism is operative in the realm of empirical science while being linked with the concept of an object in general that controls Kant's whole system, showing the possibility of objects answering to it involves showing that there are

those sorts of objects and the laws required to explain them (incidentally, showing the objective validity of a concept on this account, in kind from ~~differs~~/the method of showing the objective validity of concepts in CPR where objective validity is essentially connected with the possibility of experience in general). So also for the principle of teleology, the possibility in question is that of living things whose physical life-processes define their being. And Kant has provided all the conditions requisite for showing that we do or could have knowledge of such a kind of thing. Kant of course thinks that because the respective principles are regulative they do not involve objectivity; but nothing could be further from the truth. If the principles of teleology and mechanism are applicable in the domain of science then it is a question of possessing a different procedure for establishing their objectivity and we have no grounds for continuing to recognize the objects regulated by these principles as in some sense, not fully objective; in fact, accepting the development of science (biology) Kant's censure of living things from the epistemological boundaries of objectivity looks ludicrous. As I remarked earlier in this chapter, the peculiar aspect of all this is that Kant provides the material for recognizing and individuating living things, the physical metabolic processes which serve to differentiate organisms from ordinary material things, separate explanatory frameworks with principles ranging over the different kinds of

entities within each domain. Kant's attempt to show the compatibility of mechanism and teleology, finally, evidence what is really preventing him from recognizing the reality (full-blown) of living things. As with Kant's moral philosophy so with his theory of teleology. The exclusivity of the general explanatory framework of CPR rules out even the partial authorization of a domain of differently constituted entities than material things by principles or laws of another framework. The truth is that the categorial framework legislates at the most general level of explanation for material things and anything conflicting with this framework e.g. living things, persons (thinking and acting) is relegated, on epistemological grounds, to an ontological limbo. We must then reject Kant's claim for the exclusive authority of the categorial scheme of CPR and with it reject another of the central claims of transcendental idealism; the legislative authority of the categories derives, in part, from the fact that they are alleged to be specifications of the concept of an object in general arising from the nature of the thinking subject, and, since those features which any objective world must possess are just those specified by the categories, one understands why I said that the central thesis of transcendental idealism is that the foundations of the world-order, the foundations of objectivity, lie in the nature of the thinking subject.

With respect to the question of demonstrating the

objectivity of certain concepts by showing the things in question to be possible (physically or at the level of scientific theory) Buchdahl has provided a suggestion which seems to be exploiting just this sense of 'possibility'. He remarks that in MFNS Kant is not providing justification for inductive generalizations based on (Newton's) laws or that the categories support these inductive generalizations at a more general level, but that Kant is actually demonstrating the metaphysical foundations of those laws, i.e. how we can explain on a priori grounds the fact that this set of laws fits this kind of objects. What Buchdahl says in regard to the 'Observation' of the third law of mechanics in the chapter on 'Mechanics' in MFNS, is:

"For ... we soon find that as usual Kant couples the notion of 'construction' with that of 'possibility'. His main concern is that of demonstrating the 'possibility' of the phenomenon of 'communication of motion', in the course of which the law of action and reaction is likewise derived... This Kant makes perfectly plain, when he writes that his 'problem', in the metaphysics of mechanics, is only 'to make this possibility (of communication of motion) .... comprehensible'.<sup>13</sup>

The point in trying to establish the metaphysical foundations of laws and, as we saw earlier, the notion of demonstrating the objectivity of a thing or a kind of thing by demonstrating the possibility of an object's answering to a concept, is that ultimately the justification or grounds for the applicability of the concept and the explanatory power of the laws must be sought in some

other source than the concepts or laws. And this makes perfect sense in MFNS where Kant tries to demonstrate how physical things can be constructed and how Newton's laws, as a mechanistic system of explanation, apply to such things. The laws themselves come to be seen to be dependent (in the specific sense that their explanatory power is derived from the actual constitution of physical things) on the nature of these entities. Nor need there be anything deeply mysterious about this possible interpretation of Kant's philosophy of science for it is equivalent to the widely held position with respect to laws and their status, viz. that laws at the level of scientific theory must be accompanied by a theory or theories about the kind of objects they are reputed to range over. Thus, when Kant defines the concept of matter, he does effect a 'construction' of sorts by building into the concept as he proceeds, just what he wants to get out of it, i.e. a conception of a physical thing as a kind of thing which can be appropriated to mechanistic explanation. There is, furthermore, a significant parallel between the kind of demonstration required to show that there are physical objects answering to a set of mechanical laws and the requirement that for any object of experience in general it must answer the conditions specified by the categories. If Kant's programme is read as a progression or development of, the concept of an object in general, from the most basic and general level of accounting for the possibility

of objects of experience, through to the more detailed specification of providing an account of how and why physical things (and living things) can be explained by some system of laws, at the level of empirical theory, then, Kant's central notion of anchoring the objectivity of objects in a transcendental condition (the nature of the thinking subject, the possibility of experience) is open to dispute; what, on the above account, would count as 'proof' for an a priori conceptual scheme like the categories is whether the concepts in question received the requisite specification or 'filling-out', at the level of empirical theory. And this would place Kant in the Leibnizian metaphysical camp in which, or, according to which, whatever account is provided for the foundations of objectivity must be provided in terms of the nature of things, rather than our knowledge of those things. Thus, the priority of ontology over epistemology, made more demanding in Kant's case if the overall argument of the first part of this thesis is at all plausible, viz. that Kant's ontology, provided largely by transcendental idealism, is unacceptable anyway, failing as it does to provide for the different ontological kinds that there plainly are.

I conceive of metaphysics as the theoretical domain in which our most general theories about the nature of reality are expressed. Kant's categories, in their schematized form, specify the metaphysics of experience and ordinary knowledge; in the realm of science these meta-

:physical specifications are not abandoned; on the con-  
:trary, they become even more entrenched in the overall  
cognitive situation by receiving further specification or,  
if you like schematization, in the domain of empirical  
science, at the level of empirical theory rather than the  
most general level at which Kant's categories in their  
original form, are operative. At both levels however, at  
the level of general metaphysical theory and at the level  
of specific empirical theory, the categories carry our  
ontological prejudices. By requiring that the objective  
validity of concepts (at the most general level) and the  
objective validity of empirical laws (at the more specific  
level) be demonstrated, by showing that for the former,  
there is some object answering to it, and for the latter,  
that there is a set of material things the defining natures  
of which allow them to be explained by the system of empir-  
:ical laws in question, we shall be able to make good our  
claim that ontology must have priority over epistemology  
in Kant's system, despite the general de-ontologizing move-  
:ment of Kant's project. Kant's rationalist origins are dis-  
:guised, often subtly by the architectonic of pure reason;  
but they are always present and their influence is effective.  
Since the ontology presupposed by transcendental idealism  
is inadequate for either metaphysical or physical theory,  
we must look elsewhere for the ontological underpinnings  
demanded by the kinds of entities specified by the categor-  
:ies (ordinary material things), by the kind of entity pre-  
:supposed by Kant's moral philosophy and his very own

conception of the nature of reason as dynamic, which we saw in the second chapter (persons), and now, it appears, by the kind of entity whose existence is pre-supposed by teleology (living things).

In the second part of this essay I shall develop an argument to the effect that the ontology required to replace the narrow ontological horizons of transcendental idealism is one which resembles that presupposed by Leibnizian realism. Kant moves quite regularly within a realist framework as his attempts to salvage empirical realism in CPR should tell us. But Kant is more than an empirical realist in MFNS where he provides the material which enables one to glimpse the realist undercurrents of his theory of the nature of matter and physical things. Here we have the basis for the required new ontology, one constructed from the perspective, not of judgment, but of the object. The difference of perspective here is crucial for it mirrors the difference between an epistemological and metaphysical perspective in the development of philosophical theory, and, quite often the substantial differences that separate the Kantian and the Leibnizian (realist) frameworks come to little more than a difference in perspective of this sort, one which, it is worth mentioning in passing, arises in part due to Kant's so-called transcendental interpretation of the theory of ideas, whereby all knowledge comes to rest on a transcendental condition. The ultimate justification for the world order

is thus given in terms not of the nature of things (as both Leibniz and Locke tried to do) but in terms of the thinking subject or conditions which the thinking subject is alleged to possess. But if transcendental idealism is false, or, at least, open to serious doubt, then Kant's theory of objectivity and the ontology that arises from that theory cannot possibly meet the demands placed on them as a result of the failure of transcendental idealism, most notably, that of trying to provide an account of the diversity of kinds of entities in the world. For a theory of reality which locates the source of objectivity in the nature of subjectivity, this falls out necessarily since the conditions of subjectivity - conditions imposed by the limited perspective of the knowing subject - define a priori the ontological horizon. With regard to Kant this is effected through conceptual necessity. Conceptual necessity, or, transcendental necessity is, however, insufficient for demonstrating the objective reality of concepts, since, as I have hinted already, the complete specification of the concept of an object in general is provided by science.

6. My strategy in Part Two of this essay will be to argue that Kant has a philosophical (metaphysical) theory of the unconditioned in the form of the Ideas of Reason of CPR. As usual in matters associated with the concept of the unconditioned, Kant characterizes the ideas of

reason as being of regulative value only, i.e. their employment although necessary, is merely methodological with regard to the development and organization of theories concerning the scientific knowledge of nature. According to Kant, science is a systematic body of empirical knowledge in virtue of the fact that scientific theories are related to one another through necessity and it is the necessity which binds the theories into a system. Each theory within the system obtains and keeps its place within the hierarchy of theories because it is related to the theories immediately above or below it with necessity. This, however, leads to a regress in the series of conditioned but necessarily connected scientific theories until we arrive at the unconditioned source of the conditions; it will be seen that the necessity Kant imputes to physical theories - the necessity of system - derives from the unconditioned or, what must, given Kant's conception of system, be referred back to an unconditioned ground. As Kant inevitably identifies the unconditioned with a supersensible ground, I shall argue that the metaphysical theory of the unconditioned can and should be complemented and thereby receive a fuller ontological specification, by a theory of the nature of objects, of material things. It so happens that in the MFNS Kant provides just such a theory in his force theory of matter. The two fundamental forces of repulsion and attraction are unconditioned in that there is no kind of entity with which we are familiar that

can be characterized as more basic than forces; and even if an entity more basic was discovered then it would replace forces as the unconditioned. What remains unchanged is that something, some kind of entity, must be characterized as unconditioned if the conditioned is to be explained without infinite regress in our explanatory theories. This is a very rough sketch of the argument of Ch. 5. In the final chapter, I attempt to integrate the philosophical perspective of Leibnizian realism with the specific ontological theory of the nature of things as consisting of basic entities - forces. Since, throughout this essay I have argued for a reversal in Kant's ordering of the relation between the perspective of judgment and the perspective of the object with respect to objectivity, and here try to present the metaphysical framework for the argued-for new perspective (Leibniz), we are entitled to reconsider Kant's theory of the understanding in light of the new perspective. This involves viewing Kant's original layout of the categories, the principles and the definitions of matters as providing in that order, a detailed picture of the ontological specification of the concept of an object in general. The world is the way it is because objects are composed of the kinds of entities they are composed of and our conceptual frameworks reflect this. Let me say that I can only provide a sketch of this new perspective in this chapter for adequate treatment would require the space and time for a separate project.

Before any of this, however, I must present my case for adopting the general philosophical framework represented by Leibnizian realism and, up to a point, monadism. This is the task of Ch. 4. Even if we were to suppose that the arguments presented so far against the claims of transcendental idealism were sufficient to show that theory's unsuitability as a metaphysical theory of reality, we would still be required to demonstrate why the Leibnizian framework should be thought to be more successful in this respect. This is what I do in Ch. 4, largely by considering the Kantian claims as a metaphysical system vis à vis the Leibnizian. Kant does have some very effective arguments against Leibnizian positions, e.g. that monadism is ultimately unacceptable because it cannot account for real causal relations between things. But I try to show that the more eccentric of Leibniz's positions are attributable to the extreme idealism which infects his writing in places, and anyway, I reject the idealist strain in monadism. It must be emphasized that it is not Leibniz I want, or, more important, need, to defend but the metaphysical framework within which his theories are operative. I conclude this chapter by arguing that the concept of a monad, once pruned of its idealistic features, just might fit the description of the kind of entity that would be characterized by what Kant calls, intensive magnitudes, in the 'Anticipations of Perception'. That is, at the micro level, at the level at which Kant's analysis

of matter into forces is relevant, we can describe monads (centers of force) as intensive magnitudes, or, as Kant says of intensive magnitudes, the real. Thus we possess some description for the real ground of things, their real natures, which is more informative than what would be provided by a characterization in terms of forces alone.

The unconditioned is an ontological category specifying the real as the centers of force (monads) and the real is describable in terms of intensive magnitudes. I must emphasize the moderation of my claims here. I am not claiming to offer a description or analysis of physical things but presenting a characterization of a possible type of entity which might serve to complete the specification of the concept of an object in general initiated by the categories. Since I conceive of the categories as having ontological import, the Kantian means by which the categories come to obtain objective reality must be replaced by some description and characterization of the real from which the objectively real is now seen to be realized. It is not a question of epistemic necessity but whether there are the types of entities in the world that are required to account for how the world, in its diversity, appears.

The matter, the condition of which with the  
condition of the subject is not questioned in nothing  
but a mere form of a particular way of rep-  
resentation in substance object of the  
that intellect as an object of the  
"are they yet to be called outer events,  
which this appearance, which we call matter,  
corresponds in the character of appearance  
it is not, however, outside us, but is only  
a form of the intellect itself that  
through the intellect is called outer events,  
representations of an object outside us."  
(1714)

The overall argument of Part One was designed to  
show that the central claims of transcendental idealism

## PART TWO

### Leibnizian Realism, Science and the Perspective of Ontology

realism; this was of course essential in order that the  
right of the theoretical framework that I am trying to  
be assumed. The second and final part of this study  
represents an attempt to elaborate the framework required  
to vindicate Leibniz's metaphysics. The scientific categories  
and are specifications of the concept of an object in  
general but whether things in the world really do possess  
the features laid out by the categories can only be answered  
by showing that the epistemic predicates of the know-  
er are ontological predicates of things, or to put it  
directly, the categories can only receive  
their vindication if the things' relationship to the  
world can be shown to be structured by more than epistemic  
predicates. Unless the categories are vindicated as ontological

IV The Ontology of Leibnizian Realism: Towards the  
Unconditioned

"For matter, the communion of which with the soul arouses so much questioning, is nothing but a mere form, or a particular way of representing an unknown object by means of that intuition which is called outer sense. There may well be something outside us to which this appearance, which we call matter, corresponds; in its character of appearance it is not, however, outside us, but is only a thought in us, although this thought, through the above-mentioned outer sense, represents it as existing outside us."  
(A385)

1. The overall argument of Part One was designed to show that the central claims of transcendental idealism promise much more than they achieve independently of any assumptions regarding the truth of the claims of (Leibnizian) realism; this was of course essential in order that the truth of the theoretical framework that I am arguing for, not be assumed. The second and final part of this essay represents an attempt to generate the framework required to vindicate Kant's categories. The schematized categories are specifications of the concept of an object in general but whether things in the world really do possess the features laid out by the categories can only be answered by showing that the epistemic predicates of the knower are ontological predicates of things, or to put it slightly differently, the categories can only receive final vindication if the knower's relationship to the known can be shown to be structured by more than epistemic necessity. Unless the categories as epistemic predicates

are construed as ontological predicates it will have to be left unexplained (and unaccounted for) how and that, science empirically continues the specification of the concept of an object in general—since there must be a continuity, at all levels, of the specification of the concept of an object. If there is no continuity, there is no consistency, and if there is no consistency between the levels of explanation of objects, then empirical science cannot be regarded as completing (in principle) the story begun by the categories, and finally, if this were to turn out to be true, then what possible use would there be for the categories disengaged from the real of science? To construe the categories as ontological predicates amounts to claiming that it is possible to show that things really do stand in causal relations with each other; that there is genuine interaction between bodies; that there is something in appearances which remains unchanged, or, that there is something permanent in the universe underlying change and without which there would be no change. To construe the categories as disengaged from the realm of science is equivalent to conceiving the relationship between metaphysics (philosophy) and science as opaque, thereby reducing philosophy to irrelevance. But if philosophical theories are theories about the nature of reality or pertaining to certain structural truths of reality, such as when and why the categorial concepts of an explanatory framework are applicable (what material things are, what living things

are, what persons are), then our philosophical theories can be justifiably regarded as prescriptions for the possibility of knowledge while not being able to secure that knowledge on their own account. So, for example, the categories of CPR can tell us what features anything falling under the concept of a material thing must possess, but only science can tell us whether the thing in question does actually possess these features. On this view, and I shall argue that it is the general philosophical view presupposed by Leibnizian realism, philosophy sketches out, from the perspective of judgment or knowledge, a possible ontology, and science (physical theory) vindicates (or fails to) this possible ontology sketched by the different categorial frameworks, from the perspective of the nature of things. Any system of a priori concepts is thus seen to be grounded in the nature of things while at the same time providing or instituting, the framework within which to comprehend things. For any ontology we must have a corresponding theory of objects for the various kinds of objects which go to make up that ontology. Without such a theory of objects we would have no theory of meaning for the ontology; odd though it may seem, Kant supplies the beginnings of a theory of meaning for such a conception of ontology in the form of the Ideas of Reason even providing for the concept of the unconditioned. In CH. 5, I try to show that Kant's theory of system generates the requirement for the unconditioned and that this requirement is satisfied in

the form of the unconditioned forces of attraction and replusion, the basic constituents of matter defined by Kant in MFNS. This is the topic of the final chapter. In arguing that Kant should be interpreted as providing an ontology of objects based on the concept of the unconditioned and that this is borne out within the domain of his philosophy of science, I am arguing that it is the Leibnizian roots of transcendental idealism that ought to be embraced. Leibnizian realism is the bed of Kant's ontology notwithstanding, as I shall argue shortly, Kant's objections to Leibniz's epistemology and to monadism. In fact, as I mentioned to Ch. I, the metaphysics of monadism is consistent with Kant's own epistemology of transcendental idealism. I shall be returning to this shortly.

2. The overall argument of this chapter is designed to show that the real context of the debate between Leibniz and Kant (and thus between the metaphysical theories of the nature of reality spelled out by Leibnizian realism and Kantian (transcendental) idealism is the context defined by, on the one side a world-order grounded in the nature of things or the metaphysically necessary structure of the world, and, on the other side, a world-order which rests on a transcendental condition. According to the former, the entities of the world are constituted by properties necessary to their natures, without such properties they would not be the sort of things they are.

According to the latter, all necessity is derived from the structure of the knowing subject, so that all necessity is epistemic or conceptual. Questions pertaining to the possibility of knowledge will receive different kinds of responses according to what ontological context we choose to address the questions. And this is as we might expect for the original debate between Kant and Leibniz, or more accurately, Kant's disagreement with Leibniz, centered around the question as to how the world alleged to be the foundation of the phenomenal world could be known to be the world composed of entities constituted by centers of force. The heart of Kant's objection to Leibniz is ontological in kind: a world in which substances stand in real causal connection with each other or a world in which the interaction between substances is merely apparent, though accounted for. This conclusion re-emphasizes my central thesis, viz, that the problem of objectivity is ultimately or firstly, an ontological problem.

Leibniz, unlike Kant, has an explanation as to how phenomena are well-grounded and can thereby provide an account of both matter and mind. If transcendental idealism is true, with the proviso that Kant stands by the correlative thesis of empirical realism as well, then, Kant's idealization of space, and, through his attempted idealization of space, the idealization of matter (for space is the form of outer intuition) amount to an ultimate idealism, i.e. transcendental idealism is a statement to the effect that

when viewed from the perspective of judgment, the object is ultimately ideal. It follows from this that Kant must provide some account of what is other than mind or what other than mind could count as the source of appearances. But if we reject the central claims of transcendental idealism (and the thesis of empirical realism as well) on the basis of the arguments given in the first part of this essay, then it is open to us to prop up the account of what, other than mind, could be the source of appearances in the world. Kant's force theory of matter, with some alterations, can provide such an account, moving us, of course, in the direction of Leibnizian realism.

In 'The Amphiboly of Concepts of Reflection' of CPR Kant draws a distinction between two ways of dealing with concepts for the purpose of understanding their proper use; this entire section amounts to little more than another of Kant's correctives of fallacious metaphysical reasoning, in this case, that of Leibniz and the school of Wolffe. While the overall importance of this section in CPR is very minor, it does provide a rare opportunity to witness Kant attempting to define his own position vis à vis the Leibnizian - in the CPR rather than, say, in the debate with Eberhard. Kant's distinction involves the separation of two kinds of concept-analysis. When attempting to define the right relation of concepts Kant maintains that we should consider: (1) the logic of the concepts under question - the logical form of concepts, and (2) the

origin of ground of each concept. Kant makes this distinction in his own way of course, stating that, "logical reflection is a mere act of comparison; for since we take no account whatsoever of the faculty of knowledge to which the given representations belong, the representations must be treated as being, so far as their place in the mind is concerned, all of the same order. Transcendental reflection, on the other hand, since it bears on the objects themselves, contains the ground of the possibility of the objective comparison of representations with each other, and is therefore altogether different from the former type of reflection. Indeed they do not even belong to the same faculty of knowledge." (B318- 319)

The business of 'objectively comparing' representations involves making a distinction which, since Frege at least, has become commonplace, i.e. a distinction between kinds - concepts and the objects falling under them. And what Kant calls logical reflection denotes the kind of conceptualizing which ignores this distinction, resulting in the proliferation of entities wrongly or mistakenly reified. Whereas for Kant the overall cognitive situation involves a delicate balance between concepts and intuitions located respectively in the understanding and sensibility, the (urge of Platonism) tendency towards the reification of concepts amounts to a denial that human knowledge is a co-operative combination of data supplied through the senses and form or structure

provided by the discursive intellect. In Kant's epistemological programme, the combination of form and matter is the fundamental element in the constitution of experience - all experience, not just theoretical; what is more, since Kant's transcendental idealism requires that the grounds of objectivity be located in the nature of the subject, the structuring or controlling principles regulating the relation between form and matter in all areas of experience, must ultimately have their origin in the nature of the subject. For, "to understand Kant's theoretical philosophy, . . . . we must focus our attention upon the relation of form and matter in the production of "cognitive experience". To understand Kant's moral philosophy we must attend to the relation of form and matter in the production of "moral experience". To understand Kant's aesthetics we must examine the relation of form and matter in "artistic experience". And to find the Kantian answer to all these areas of human life, we must . . . look for the solution to the problem of the relation of form and matter in the nature of the subject."<sup>1</sup> As I see it, 'The Amphiboly' is underlining the necessity of including the formal and material elements in any account of the 'possibility of experience' and that this requirement is what is reflected in and preserved by, the distinction between the logical and the transcendental employment of concepts. If we look at the way Kant tailors this argument against the claims of Leibniz, it becomes possible to reconstruct a picture of the struc-

tural features of the ontological posit - the kind of entity - which features at the level of experience, at the macro level of ordinary objects with respect to the Kantian and Leibnizian frameworks, where these are construed as metaphysical theories of the nature of reality. The object of this reconstructive exercise, it is worth repeating, is to show that talk about modes of knowing - epistemological discourse - leaves the essential differences between the two positions characterized (conceptual idealism and Leibnizian realism) unaddressed; this is because the problem of objectivity is an ontological problem first.

We have seen that Kant's ontology is structured by, and arises from, his theory of objectivity; now it is widely accepted that the two requirements controlling Kant's theory of objectivity as this is developed in CPR, are space and time as forms of intuition, and the categories. Although Kant would want no part of talk of essential properties, it remains true to say that on Kant's own arguments, there are certain features which objects must possess if they are to be objects for our cognitive apprehension, and these features are those described by the categories and space and time as the formal elements of sensibility. These two criteria of 'objecthood', so to speak, are essential in so far as it would be conceptually impossible to establish (or, impose) an objective order upon things and the relations of things, without engaging factors relating to things being in space and time and being organized along

the lines prescribed by the categories. These considerations of space and time and the categories, effect, from the perspective of judgment, the 'conceptual unity' of the object and at the level of judgment it is just the possibility of expressing this 'objective unity' (rather than a merely 'subjective unity') which allows for an objective order amongst things and their relations in our experiences. Because space, time and the categories are conditions of the possibility of the objectivity of objects, and thus conditions of the possibility of making judgments about objects, we would not expect an analysis of judgments to be sufficient to reveal the conditions for their objective validity; and so it is. The unity of the concept of an object expressed at the level of judgment is, as Kant says, a synthetic unity, not an analytic unity. No analysis, for example, of the subject and predicate terms of a proposition would reveal the conditions for its objective validity. Despite this, however, Kant was one of the first philosophers to use space and time as individuating criteria for objects, at least he thought that spatial location was sufficient for establishing the numerical identity of an object. This suggests that Kant's notions of space and time are individuating criteria which cannot, as it were, be read off from the objects themselves - they are primitive rather than derivative concepts. Of course we can tell that an object is in space and time, that it has a location there and then simply by observing it but as evidence for the claim that space

and time are conditions of the possibility of objects in experience, perceptual reports are irrelevant, for the possibility of making perceptual reports presupposes, on Kant's theory of the a priori status of the necessary conditions of experience, that the formal elements of sensible intuition and the categories are already operative. On Kant's theory, then, we can say fairly accurately that the essential criteria for objecthood are external to objects even though they describe features which objects must possess if they are to be comprehensible. In this respect Heidegger's claim to the effect that the categories "anticipate" the object, in the sense that they lay the groundwork for the object's presenting itself (providing a blueprint for the structure of every thing, as Heidegger says<sup>2</sup>) would seem to be correct, for the categories do provide a 'sketch' of the essential structural features of things without any prior input from experience from which it might be said that such information was derived (intuition affords input with respect to content not form).

The view that space and time are a priori with respect to our knowledge of things is not a view shared by Leibniz. As space is simply the objects that occupy it, an object's spatial characteristics can be discerned from its appearance and because Leibniz never approached the notions of space and time from the perspective of knowledge of things it is hardly surprising to find that he has no conception of their logically a priori status. In brief,

space and time have no bearing on the overall cognitive situation. The point I want to make is that once we understand that the view of space and time from the perspective of knowledge (as presuppositions for its possibility) was wholly foreign to Leibniz it becomes much easier to understand why he did not think an object's spatial and temporal characteristics were any more essential to their nature than other contingent qualities. In direct contrast to Kant's view, as construed above, for Leibniz the spatial and temporal aspects of objects can be read off from the objects themselves and rather than being 'brought' to the objects, these characteristics seem to be internal to them.

Kant's conception of space and time as in some sense (logically or conceptually) a priori, is based on the insight that the spatial and temporal structure of material particulars must be reflected or mirrored in the structure of experience, i.e. in language and judgment. So intricately interwoven with the structure of experience that space and time are construed as conditions for its very possibility, at least from the perspective of knowledge or judgment. When, then, Kant states that there is a precondition for the possibility of the "objective comparison of representations", this ought to be taken as a claim to the effect that concepts (and language) are, so to speak, regulated or disciplined to mirror the spatial and temporal structure of experience, and the spatial and temporal

structure of the ordinary physical objects which go to make it up. Granted this, it follows that any attempt at defining the structure of experience or developing a theory which might explain that structure (e.g. monadology) must engage this spatial and temporal component at the most basic and general level of explanation. Seen in this light, Kant's argument undercuts any explanation which ignores or better still, fails to incorporate, the distinction between concepts with respect to their origin (understanding and sensibility) and concepts treated logically; thus as soon as a Leibniz states his case, he is involved in a petitio principii, for he is using concepts which are (or allegedly have been shown to be) essentially connected with our spatial and temporal framework, to argue that the reality (the objectivity) of the objects falling under the concepts is a function, not of the spatial and temporal structure of experience but of the inner nature of the concepts (their clarity and distinction).

The problem then, with the Leibnizian position and common to all dogmatic metaphysics, is a failure to recognize that space and time are primitive conditions in the overall cognitive situation. But to what extent can this objection of Kant's be considered an effective one? By this I mean that Leibniz's theory of space, as we shall see momentarily, was formulated to meet a specific problem (the Newtonian theory of space) and to be consistent with certain fundamental metaphysical truths pertaining to the

nature of reality. To put this another way, Leibniz's theory of space grew out of a specific problematic context and if Kant's objections and suggested alternative are to be effective one would expect them to address this problem situation. If Kant's theory of the a priori status of space and time is not designed to solve this problem then what is its point? And if it is designed as a corrective to previous theories of space then we are entitled to evaluate it within the context of the problem situation of these theories. While I certainly think Kant's own story about space and time can be evaluated independently of this particular problem, the same cannot be said for his criticisms of Leibniz's theory since, for the most part, Kant is content to simply point out what Leibniz failed to do (i.e. conceive of space and time as forms of intuition) rather than point out what is mistaken in what he did do. Furthermore, since Kant's strategy is (as usual) to lay an epistemological context over the problem of space with respect to the Newtonian and Leibnizian discussion, it becomes all the more important to adopt some caution towards Kant's approach to a problem situation which arose within a context from which epistemological considerations were absent. Buchdahl argues to this effect when he says that "...Kant managed to tread his way between the Newtonian extreme of space as an empty vacuum, and Leibniz's theory of relational space, only by the creation of a specific technical device, that of a trans-

:cendental (i.e. presuppositional) 'form of intuition'.

And obviously this is not an answer to these other theories, but a different way of reshuffling the philosophical cards."<sup>3</sup>

It is to Leibniz's theory of relational space that I now turn.

3. Traditionally, the central problem posed by space and time for philosophers who have formulated theories which might explain them, is whether space and time are substances, properties or relations. In this respect Leibniz is no exception. He rejects the theory of absolute space because it amounts to making space a substance and for Leibniz, only substantial entities are absolutely (unconditionally) real. He also objects to the theory of absolute space on the grounds that it clashes with both the principle of identity and the principle of sufficient reason-in the following way. If the absolute theory is true then it follows that the universe could have occupied a different region of space (and a different stretch of time) than it does and still be the same universe. Furthermore, there would have been no reason for placing the universe within one set of spatial and temporal coordinates rather than another; but god never acts but with sufficient reason and therefore, he would have had no reason to create the universe; there is a universe however, from which it follows that the theory of absolute space must be false.<sup>4</sup> The other factor in Leibniz's rejection of a sub-

stantial account of space is his conception of the subject-predicate logic. In short, if space is construed as a substance in its own right, then the relation between spaces and the substances occupying them cannot be represented within the logical form of the subject-predicate calculus.<sup>5</sup> If both space and material substance are independent existents the relation of subject and predicate (the relation of) the containment of the predicate in the subject - may change, such as when a space is evacuated by a body and then re-occupied by a different one. The change in the relation is not accompanied by a corresponding change in the terms of the relation for the body simply occupies another space and the space it evacuated is occupied by another body. It makes no sense to claim that a relation of containment holds between two terms of a proposition in subject-predicate logic if a change in the subject term does not imply a change in the predicate term; indeed, this is the meaning of 'containment'. These arguments forcefully describe the metaphysical and logical prejudices at work with respect to Leibniz's theory of space but even more important for my purpose, is that they demonstrate that the considerations leading Leibniz to defend the relational theory are far removed from epistemological considerations of the sort Kant was motivated by. This point can be established firmly by briefly looking at Kant's reasons for rejecting the theory of absolute space. With the possible exception of the 'Axioms of Intuition'

where Kant is concerned with showing the necessity of attributing a determinate structure to space, i.e. insofar as space is perceptible it must be possible to apply sensible measures to it, Kant's stated reasons for rejecting the theory of absolute space are epistemologically rooted. Absolute space cannot be a possible object of experience for any possible object of experience occupies a spatial position, and absolute space obviously cannot do so. Absolute space is infinite and on Kant's theory of knowledge no possible object of experience can be infinite.

(A426 - A433 = B454 - B461)

(A427 - A434 = B455 - B462)

At best the concept of absolute space functions as an ideal limit for thinking smaller spaces in ever larger spaces; it is, as Kant says in MFNS, "...a logical universality of any space, with which I can compare each empirical space as being included in it..." (482) In other words, absolute space is unacceptable as a characterization of space because it construes what is no more than a regulative idea as a possible object of experience; the concept of absolute space is an empty one lacking any corresponding intuition which is just to say that we can't demonstrate in Kant's chosen a priori fashion, the objective reality of the concept. In fact, it is epistemological considerations such as these that lead Kant ultimately (his mature view) to adopt a relational theory, thus following Leibniz (not without a twist of irony). Of course, space as relational does satisfy the conditions of 'the possibility of objects

of experience' insofar as the 'spaces' are measurable quantities, thus allowing us to attribute, once again, a metric to space (Hence the topic of the 'Axioms', that 'all appearances, in their intuition, are extensive magnitudes'). The fact is that Kant's eventual adoption of the relational theory of space rests on his epistemological thesis to the effect that space is the form of intuition and thus subjective. We can measure space because space's metric is, in some sense, contributed by us (as the form of our intuition). Like Leibniz, Kant ends by denying the reality (unconditional) of space but unlike Leibniz, he effects an idealization of space (= making space subjective). This idealization is meant to accomplish two things for Kant: by denying the reality of space Kant removes one possible source of alterity in the world (the other being matter) while simultaneously - by subjectivizing space or making space a form of knowing subjects - preserving the epistemological status of space as the ground (as a form of intuition along with time and the categories) of the order of things in the world. And it is here that we can see the real significance of the difference between the idealism of Kant and the realism of Leibniz: both deny the substantial alterity of space in rejecting the theory of absolute space but whereas Leibniz has an account of how at the phenomenal level the relations of things in space are grounded in ('well-founded in') substantial entities composed of active forces, Kant has no such account. In a word, Kant's subjectivization of space

looks like being ultimate. We get a glimpse of Kant's line of argument from the chapter on 'Dynamics' in MFNS (to which we shall be returning in the final chapter):

"The philosopher sees himself thus forced to depart from the assertion that matter is a thing in itself and space a property of things in themselves, however common and suited to the common understanding this assertion may be. But of course he departs from this assertion only under the condition that in the event of his making matter and space appearances only (hence making space only the form of our external sensible intuition, and thus making both matter and space not things in themselves but only subjective modes of representation of objects in themselves unknown to us)...."  
(506)

If Kant's theory of space as the form of intuition is supposed to be an improvement on the absolute theory while at the same time avoiding the reduction of space to an unknown property of substantial entities (the unacceptable side of the Leibnizian coin), Kant, like Leibniz, must provide some account of the relation between matter/or space on the one side, and mind, on the other. As I have said, Leibniz does have such an account of how substantial entities ground phenomena. Take for example Leibniz's handling of 'place': On the basis of his ontology, Leibniz could not accept that place was ontologically distinct from body; all entities in the phenomenal world are or can be, accounted for by explaining their appearance in terms of another type of entity, namely, substantial entities consisting of forces. Leibniz could thus provide a consistent account of how physical things were grounded in

the unconditionally real (ignoring of course other difficulties with Leibniz's account). Place could be explained in like fashion by reference to the well-founded phenomena. The place occupied by a physical thing is just its situation relative to other physical things; place is 'where' one physical thing is situated with reference to 'where' other physical things are situated. All such entities are externally related to one another, possessing a determinate situation relative to each other. The total number of places defined in this way constitutes space. It is crucial to see that Leibniz does not deny the phenomenal nature of space, he simply wants to say that space or place are not fundamental, i.e. there exist more fundamental entities which serve to explain them. Now admittedly, this is a slightly loose interpretation of some of the most controversial of Leibniz's doctrines, or, more accurately, of how these 'levels of doctrine' fit with each other: this is nowhere more apparent nor more important, than with respect to the placing of Leibniz's eccentric metaphysics in relation to his physical theories of matter and force. Because Leibniz nowhere makes an attempt to explain or come to grips with the problem of the relation between the metaphysical and the physical in his work, the task is inherited by those of his commentators who feel the effort justified. Recent work on this knotted issue has brought to light the extent of Leibniz's use of, and in those instances when he was perhaps uncertain as to how to pro-

ceed, his dependence on, analogical reasoning. Buchdahl, more than anyone, has pressed the overriding importance of metaphor and analogy especially in this difficult realm of relating Leibniz's general metaphysical world view to his more specific soundings on the constitution of matter and substance.<sup>6</sup> I do not now believe that there is a straight-forward approach to the problem of fitting these two levels of theory together in Leibniz's philosophy as a whole and my controlling principle when dealing with any aspect of Leibniz's work has therefore been to take a stand on specific issues and present what arguments I could marshal on their behalf. This is most significant with respect to the question of relating Leibniz's dynamics and metaphysics and I shall explain my position in this regard when discussing Leibniz's force theory in the final chapter. It will have to suffice here to say that although I am convinced that Leibniz was first and foremost a metaphysician (probably because he regarded metaphysics to be the realm proper for first truths) his actual metaphysical constructions, such as the monad, the doctrine of mirroring, are so replete with analogy and metaphor as to make literal interpretation of their meaning quite out of the question. Thus, if I reject the view that the activity of force which is the essence of substantial entities, is no more than a series of changing perceptions in a monad, it is on the basis that perception was for Leibniz no more than an apt analogy for describing or picturing substantial activity.

To return to the main discussion. Leibniz does

provide an account of the foundations of phenomena; there is something other than phenomena in the world. Leibniz rejects space as a possible candidate for what is other than phenomena, i.e. what grounds phenomena, largely for the reasons we have given - space is no more than an ordered series of material substances, or, to rephrase what I said earlier, space is a logical construction from the total number of 'places' occupied by material substance at the phenomenal level. Thus Leibniz rejects space and eventually accepts substantial entities as the source for what is other than phenomena, i.e. the grounds of objectivity. Locke, working within the influence of Newtonian physics, locates the foundations of appearances in matter, or, to be precise, in the configurations of matter in space but failed to provide an account of how the two levels are connected. Locke is thereby forced to push 'real knowledge' of things into the realm of ideal scientific knowledge of the essence of things. Within such a context, Kant's response is to shift the foundations of knowledge from what seemed to be the permanently unknowable source of the essence of things, i.e. matter, thereby separating matter from the realm of knowledge altogether. We continue to have knowledge of material things but the foundations of knowledge (and thus the source of the world-order) no longer is construed as residing in matter. In fact, it appears at times that Kant is not content to dislodge matter from the realm of knowledge but wants it dislodged

from the realm of being as well:

"Matter, therefore, does not mean a kind of substance quite distinct and heterogeneous from the object of inner sense (the soul), but only the distinctive nature of those appearances of objects - in themselves unknown to us - the representations of which we call outer as compared with those which we count as belonging to inner sense, although like all other thoughts these outer representations belong only to the thinking subject. They have, indeed, this deceptive property that, representing objects in space, they detach themselves as it were from the soul and appear to hover outside it. Yet the very space in which they are intuited is nothing but a representation, and no counterpart of the same quality is to be found outside the soul." (A385)

By making space, as the form of experience, the property of the thinking subject (= soul) Kant removes one possible source of whatever might be other than mind from the world of experience while still allowing that space is the ground of the order of things. But in so doing Kant has carried out the idealization of space, an idealization which is made no lesseffective by Kant's claim that his idealism is a 'formal' idealism. How else could the re-characterization of space from a real condition of the world order to a transcendental condition be accomplished? Once the idealization of space has been accomplished then matter, in Kant's scheme of things, and as the just quoted passage shows, necessarily follows. It is no use appealing here to Kant's repeated claim that the idealization in question is 'transcendental' for what is problematic is how Kant is to account for (provide a source of) matter and this is a

question of what is to count ultimately as the grounds of objectivity, not a question as to whether matter is reducible to immaterial substance, or, matter is really mind. And this, as I have been arguing throughout the course of this essay is Kant's real problem: Kant must admit that there is something which is the source of appearances, that is, something that is other than appearances, which is not mind and that we come to have knowledge of through mind (the understanding and the categories). Seen in this way, questions about the grounds of objectivity devolve into (meta-physical) theories with respect to the justificatory grounds of the order of things (and the kinds of things) in the world. This involves providing philosophical justification for our scientific theories (e.g. the realm of physical theory) and thereby establishing a proper theoretical domain for metaphysics. It is in pursuing this endeavour that I believe we are travelling with the undercurrent of Leibnizian realism, for Leibniz's permanent concern and the controlling force in his philosophical investigations is manifested in his attempt to explain the connection between phenomena and the foundations of phenomena, or, what has become for us, the need to explain the connection between theories which allege to explain things and their relations in terms of laws and principles at the macro-level, and, theories alleging to do the same at the micro-level. Although for Leibniz as well as Locke, the metaphysical and the physical were kept separate, the

need to rely on the use of analogy, in Leibniz, to the extent that the analogy becomes the explanation ('windowless', 'mirroring' monads) tends to disguise that philosopher's overriding goal. Of course, the consequence of this 'analogical' explanatory device is that inevitably, at some point, the explanation becomes no more than a picture and as an explanation, breaks down. Kant saw this when he effectively argues against Leibniz that substantial entities cannot support real causal interaction and this, as we shall see in the final chapter means that we shall have to adopt Kant's own force theory of matter to complement the metaphysics of Leibnizian realism. In concluding this short aside, it is well worth quoting Buchdahl, who has provided the impetus for my interpretation of the relation between metaphysics and science, for his perspective of Leibniz's philosophical endeavours is most perceptive:

"Locke, just like Leibniz, thinks of 'real essence' as a basis, but is worried by the epistemological barrier. on the other side, Leibniz is so concerned with the structure of the foundation that his assurance of its 'reality' prevents his epistemological qualms from even beginning to effect the issues ... Leibniz ... is so concerned to eliminate any gaps in the foundation, that he cannot have any truck with whose analysis of the limits of meaningful statements throws doubt upon the structure. For Leibniz is here simply not concerned with 'knowledge', but with 'foundations'; with what supports 'facts' or 'truths', not with what guarantees our knowledge of them..."<sup>7</sup>

What, I hope, is beginning to emerge from this discussion is the extent to which Kant's ontology arises

from its Leibnizian roots. By making the known world, or, the grounds of the known world, rest on a transcendental condition Kant effectively frees the known world from the constraints which are placed on it through its dependence on the realm of being. This dependence is removed entirely once the source of the world-order is located, not in the world but outside the world in a transcendental condition, for from the perspective of our knowledge of the world, this means that the known world is autonomous (the requirements of knowledge reside with the knowing subjects). While the known world is autonomous with respect to the realm of being from the perspective of knowledge, from the perspective of the object the known world remains dependent on being. This, as I see it, is the upshot of Kant's official doctrine that the world is transcendently ideal but empirically real. The ultimate justificatory grounds for knowledge of the world must reside in a transcendental condition thus making the world 'formally' ideal while preserving the real nature of things at the empirical level. And if we were to accept the standard interpretation of monadism, the picture of the relationship between the realms of knowledge and being provides us with a metaphysics that seems to complement Kant's epistemology. Each monad or individual substance locked within its own world nonetheless effects a knowledge of the whole world (thanks to the built-in guarantees of the pre-established harmony), the whole

world being the totality of all other monads. Thus knowledge of the world is an autonomous realm private to each monad yet each monad merely reflects (expresses) changes occurring in other monads without being either the source or the cause of those changes. In this sense, Leibniz does preserve the independence of the realm of being from the realm of knowledge. What is more, if I may say yet again, Leibniz can explain the relationship between the phenomena constituting our knowledge of the world and the source of that knowledge by appealing to the grounding function of substantial entities - the basic stuff of the world, or, the kind of fundamental entity which is the source of phenomenal order. Kant, on the other hand can at best provide an account of our knowledge of the world by appealing to the efficacy of the transcendental unity of apperception but he cannot, on his own arguments, attribute a grounding function with respect to the structure of things in the world, to a transcendental condition.

4. Kant never succeeded in purging the heart of his metaphysical programme of its uncritical (Leibnizian) elements. In the 'Ideas of Reason' of the Dialectic Kant presents under the guise of regulative principles for helping our investigations into nature, a theory of the unconditioned which looks very much like being the uncritical hangover from the metaphysics of the Inaugural Dissertation, (=ID). Although I shall be discussing Kant's notion of the unconditioned in

detail in the next chapter, I want here to present a brief argument to the effect that Kant's conception of the relation between the unconditioned (God, the Self or the World) is, so to speak, repressed rather than effectively altered in any way by his critical position. With the help of some reconstructive analysis of Kant's 'Ptolemaic Counter-Revolution' provided by M.J. Scott-Taggart,<sup>8</sup> and the ID, it is possible to show that ontologically Kant has not demonstrated that the critical system does not require some interpretation of the unconditioned. The kernel of Scott-Taggart's article is that the critical philosophy fully developed effects two major conceptual displacements which enable Kant to establish the sought-after structural truths about the world. In Kant's systematic programme God is replaced by man and talk about things represented is replaced by talk about the representings of things, as the following little exercise evidences. In the passage: "The transcendental unity of apperception forms out of all possible appearances, which can stand alongside one another in one experience, a connection of all these representations according to laws." (A108), substitute 'God' for 'transcendental unity of apperception'; 'substances' for 'appearances' and 'representations'; and 'world' for 'experience'. We get the following, very Leibniz-sounding or ID-sounding passage: 'God forms out of all possible substances, which can stand alongside one another in one world, a connection

of all these substances according to laws'. Now one of the structural truths that Kant was most concerned to demonstrate (against Leibniz and Hume) was the objectivity of causal relationships. But long before the CPR, as Kant was working his way towards his final solution to the problem of demonstrating the objectivity of causal relationships, he was concentrating on the question as to how it is possible to have a whole of things represented and his answer to this was always to remain that the things represented should be substances standing in real causal connections with one another,<sup>9</sup> In fact, in ID, while recognizing that there is a difference between the world's being a real whole and an ideal whole, Kant states that it is not yet possible to argue successfully that the world is a real whole. As section 20 of ID shows and as Scott-Taggart explicates,<sup>10</sup> Kant's early answer to how it was possible to have a whole of things represented is: when the things represented in the whole stand in real causal connections with one another but this is only possible if the things represented are all causally dependent upon the one Creator (thus guaranteeing that they all have the same source). And by the time of the CPR, the appropriate substitutions have been made in Kant's answer so that it is seen that our knowledge of things represented is only possible through our representings of the things with man replacing God as the source of the causal order, from the point of view of knowledge. However, the dis-

:placement of the old terms by the new does not imply that Kant has altered the premises of the argument for he still maintains that we can have a representing of the whole only if there is a whole represented and there can be a whole represented if and only if the items in the whole stand in real causal connection with one another. But this is where Kant's problems begin:

"For by taking several things together you achieve without difficulty a whole of representation, but not thereby the representation of the whole. Accordingly if there happened to be certain wholes consisting of substances, and these wholes were not bound to one another by any bond, the bringing of these wholes together, whereby the mind forces the manifold into an ideal unity, would not give expression to anything more than a plurality of worlds held together in a single act of thought. But the bond constituting the essential form of a world is seen as the principle of the possible influxes of the substances which constitute the world. For actual influxes do not pertain to the essence but to the state, and the transeunt forces themselves, which are the causes of the influxes, suppose some principle by which it may be possible that the states of several things whose subsistence is none the less independent each from the other should be related to one another mutually as grounded determinations. If you depart from this principle you are debarred from positing as possible a transeunt force in the world." (ID: No. 2)

To condense Scott-Taggart's argument and that presented in the quoted passage, Kant is saying that we could not have a representation of the whole unless substances causally interacted, and substances could only be said to be in real causal connection with one another if they were held together by a bond the source of which was the

Creator. With the displacement of God (and his surrogates) however, Kant can no longer use God to establish structural truths about the world; instead Kant argues that there must be real causal connections between things in the world - as an a priori conceptual truth - if experience itself is to be possible, or, if consciousness (unity of experience) is to be possible. "We can establish that there is a whole of things represented only by appeal to man as that being through which our representings of things must necessarily relate, and through whom, therefore, they may be totalised."<sup>11</sup> Thus, what Kant has established in the absence of God is the structural truth that there must be real causal connections between the substances of the world (and the other structural truths represented by the categories); any detail with respect to the specific nature of the real causal connections is now left out of account as being out of place in the new epistemological context which has accompanied Kant's conceptual displacement. But under the old view, God was the real common bond explaining the real connection between substances, not the conceptual necessity to the effect that we must think the world as being constituted of substances so connected. In other words, under the old view, God was used to explain how the different structures in the world were all held together - because they were the ontological derivatives of a common source, a real source. In the new world-view, once all of the structural truths about the world have been established, Kant is left without an explanation as to why the various structures in the

world hold together, for God can no longer be appealed to as the real source of the structures and substances within. With God no longer construed as the real ground of the whole, the whole is left ungrounded, which implies that there must be something else holding together the different structures: and the something else is God, or the Self, or the World now construed as regulative ideas 'ordering' the world as a system into a totality - an ideal totality. With no small degree of irony Kant thus comes to embrace the Leibnizian doctrine that he was beginning to move away from in ID - that the world is an ideal whole rather than a real one. And what does this amount to if not an admission that God or some surrogate of God, is the real ground (the ontological source) of the world-order but because this cannot be demonstrated we shall have to express this truth in an epistemologically cautious way by making God the regulative idea of the totality of the world system. Kant still sees the necessity of construing the world as a totality only now the totality, as Scott-Taggart points out, is the work of man and thus, a conditioned totality. But of course such a conditioned totality leaves the world ontologically underdetermined - as Kant recognizes - for such a totality cannot be explained. Because Kant always conceived the unconditioned as theological or supersensible in nature, rather than, say as a microentity whose explanation can at least be sought by science because it is within the world, not outside it, any reference to

the unconditioned as a source of explanation became illegitimate. This shows that Kant's epistemological edifice rests on ontological underpinnings and that Kant still sees the unconditioned as the true source of the world-order if only it wasn't epistemologically inaccessible. Of course, from the perspective of science there is no reason why the unconditioned should be unthinkable or be construed as an inoperative concept within the realm of scientific explanation. We need only construe the unconditioned as that type of fundamental entity which up until the present time, we know to be the basic constituent of things. Everything else is explained in terms of it while it remains unexplained. Kant's conception of the unconditioned, or any candidate for the unconditioned, as a regulative idea of the totality of the world-system - as an ideal whole - shows that Kant regards the possibility of complete knowledge, or, the possibility of a science working towards such knowledge, as ideal knowledge, or an ideal science. In the next chapter, I argue that Kant's conception of the unconditioned justifies our attributing to him a conception of such a planned ontology of the world - once we have accepted Leibnizian realism - and that the goal of this sketched ontology is knowledge of the unconditioned. I believe that Kant has a candidate for such an unconditioned entity - forces - which I describe, at least tentatively, as monad-like (stripped of its idealist connotations) and characterize

as intensive magnitudes. Obviously, this is only a very sketchy and initial attempt to provide a conclusion - and thus a direction for the future - to the story begun in this essay. In its essentials, however, I believe it to be a sound conception.

In Chapter I I argued that Kant's theory of objectivity arises from his doctrine of transcendental idealism and that Kant's ontology emerges from his theory of objectivity. Interpreted in this way, transcendental idealism, as a theory of the grounds of objectivity, is meant as a response to the metaphysical and scientific realism of Leibniz. Whereas according to the claims of transcendental idealism, the grounds of objectivity lie in the nature of the knowing subject, Leibnizian realism locates the grounds in the nature of objects. Since Kant rejects the Leibnizian doctrine to the effect that objects at the level of experience represent our perspectival grasping, or comprehension of, the basic and necessary properties making up their essential natures, it follows that Kant must reject the Leibnizian claim that the grounds of objectivity, regardless of whether we can attain to a knowledge of them, can be found in the constituting and essential predicates of the objects of knowledge. And if the grounds cannot be found in the nature of objects then they must be found in the predicates constituting the knower, or, in the structure defining the mode in which the knower comes to know objects (the categorial structure, for example). But

there is a problem with this argument. For the truth of the claim that the grounds of objectivity can be found in the defining predicates of the knower implies the falsity of the claim that the grounds of objectivity can be found in the defining predicates of objects and this could only be shown if it could be shown that objects possess no essential properties or features. In order to illustrate this point, we can observe the way in which the grounding relation between phenomena and their essential natures is, according to Leibniz, supposed to work. We assume that an object, call it y, possesses a property, call it P, which is essential to the kind of object y is; without P the other properties which y possesses, call them L, M, N, would not be properties of y, thus, we can attribute the presence of L,M,N in y to P. Now, for Leibniz, to have a knowledge of y is to know that P is in some way (which would also be known) essentially connected with L,M,N such that without P, L,M,N would not be properties of y. But to say that L,M,N - the other properties of y - are essentially connected with P, is equivalent to saying that y would not be the kind of object it is, without P; thus, y is P essentially and without P y would not be known. However, and here is the point of this exercise, for a variety of reasons (limitations of our perspective, lack of empirical knowledge), we may not know that P is the essential defining property of y, while we do know that y has the properties L,M,N. Leibniz does

not think that the capacity to make objectively valid judgments about things, e.g. that  $y$  has the property of  $L$ , is dependent on our knowing the essential properties of things, e.g. that  $y$  is essentially  $P$ . We may, indeed do, not know this and are able to make perfectly valid objective judgments about things. In our example, it is the possession of  $P$  by  $y$  which makes  $y$  the sort of thing it is and explains  $y$ 's having the property  $L$ . Now Kant's claim that the grounds of objectivity are to be found in the essential predicates of the knower amounts to a claim to the effect that all necessity in our knowledge of things is derived or comes from the essential predicates defining the structure of knowing subjects; but if we know  $y$  as the sort of object possessing the properties  $L, M, N$  because  $y$  possesses  $P$  then any necessity is attributable to  $y$  necessarily having  $P$  as that property (without which  $y$  would not be the sort of object it is). In a word, if the central claim of transcendental idealism is to be at all tenable then it must be shown that there are no properties which objects possess essentially: if Kant wants to refute conclusively the Leibnizian claim, or, the Leibnizian-type claim, then he must demonstrate that there are no properties like  $P$  which objects (qua things in themselves, as Kant would say) possess. If true, this argument shows the priority of our ontological locutions over our epistemological ones, for the important question is whether there exist entities possessing properties de-

defining their natures and if so, what relationship pertains between such entities and those not possessing essential properties. This objection to the central claim of transcendental idealism, lodged from the perspective of Leibnizian realism, reinforces an earlier one. By making knowing subjects the agents of the order in the world Kant blurs the distinction between an independently existing order and an order which knowing subjects create, thereby reducing the possibility of objective knowledge to an analytic truth about ourselves as knowing subjects. The world order we come to know through science is, structurally, the world order we ourselves are responsible for. Unless we want to accept this conclusion, we shall have to embrace the thesis that the source of the known world-order is the world-order as grounded in the nature of things rather than our knowledge of things, i.e. some form of Leibnizian realism. Leibniz himself comes very near to expressing a position such as I have just outlined; to my mind it represents the controlling center of his unwieldy metaphysics:

"But, to explain myself distinctly, before all else it is necessary to consider that the modifications which may belong naturally or without miracle to a subject, must come to it from the limitations or variations of a real genus, or of a constant and absolutely original nature..... And every time that we find some quality in a subject, we must believe that if we understood the nature of this subject and of this quality, we should conceive how this quality can result therefrom. Thus, in the order of nature (miracles set aside), it is not optional with God to give to substances indifferently such or such qualities, and he will never give them any but those which

shall be natural to them; that is, which can be derived from their nature as explicable modifications."

And again, from the same passage in the New Essays, we see Leibniz anticipating the thesis that things (qua things in themselves) must have a structure of their own if it is to be possible to comprehend how some system of mechanical laws can apply to them:

"Thus it may be asserted that matter will not naturally have the above mentioned attraction (gravitational -JD) and will not move of itself in a curved line, because it is not possible to conceive how this takes place there; that is, to explain it mechanically; whereas that which is natural, must be able to become distinctly conceivable if we were admitted into the secret of things." (Preface to New Essays)

5. Kant relies heavily on the distinction between transcendental idealism and empirical realism in his attacks on dogmatic rationalism. He doesn't often make the distinction an explicit part of his arguments against Leibniz but it is clear enough that, not only when criticizing the claims of the Leibnizians, but in the course of Kant's assaults on dogmatism in all its forms, the arguments presuppose it. What exactly does Kant think the distinction accomplishes? As I see it, Kant's story goes something like this. Human knowledge is a limited knowledge of the conditioned and the source of these limits is the structure of reason as it is realized through the employment of the understanding. Man's (formally) limited capacity for knowledge is directly related to the structure through which this capacity is

realized. In so far as human knowledge is limited in this way by human reason, by the cognitive or conceptual structure of human reason, our claims with respect to possessing knowledge of the structural truths of the world can be supported by the fact that we make objectively valid judgments based on our knowledge of these structural truths (= categorial specifications of the world-order, or, at the very least, of the order of experience). What makes itself known, within the prescribed limits and conditions, can be understood as the real in experience. But the proviso that human knowledge is necessarily knowledge of the conditioned, implies that what are known - appearances - are all phenomenal and conditioned, and what remains unknown - the real - is noumenal and unconditioned. Within this context, one would think that what we come to know as appearance is the 'way' things in themselves are as comprehended from the limited perspective of human knowledge, structured as it is by sensibility and understanding. But this cannot be the case, for it implies that we could achieve knowledge of the real if we could exchange our own limiting perspective for one which was less 'perspectival', and grasp things in themselves (e.g. god's perspective). The point here is that while Kant does not think this is possible, his theory of knowledge - transcendental idealism/empirical realism - is logically constructed so as to make the inaccessibility of things in themselves (a fact of ontology) a presupposition of the limitation of knowledge

thesis (a fact of epistemology). This is, it seems to me, the logical center of the doctrine of transcendental idealism / empirical realism and it points to the possibility that ontological considerations are lurking in the background of Kant's epistemology. The most that Kant is allowed to say regarding the status of things in themselves is something to the effect that things in themselves are, and must remain, problematic; yet Kant's claim that things in themselves are unknowable is a claim that is not really warranted by his epistemological thesis with respect to the problematic status of things in themselves. This suggests that the 'limits of knowledge' thesis notwithstanding, Kant is or might be, resorting to some unstated ontological sentiment regarding the ontological status of things in themselves.

The distinction between the transcendently ideal and empirically real nature of things is, however, operative at two, or across two different levels. From the perspective of common sense and empirical science we simply take it for granted that the world of things and nature are real whereas from the perspective of philosophical reflection (where nothing is taken for granted) certain problems oblige us to acknowledge that the world is transcendently ideal. This view receives its best expression in the writings on Kant of W.H. Walsh.<sup>12</sup> Walsh argues that not only does Kant draw the empirical reality/transcendental ideality distinction across two levels but further, Kant distinguishes appearance and reality at both

levels. This latter distinction when made at the level of common sense and science, comes to no more than a recognition of the difference between primary and secondary qualities, viz. tastes, smells and colours are judged to be mere appearances or subjective while the spatial and temporal qualities of objects, being the same for all percipients, are or can be judged to be, objectively real. As Walsh states, "To remain at this level and deny reality to the space-time world is absurd."<sup>13</sup> From the perspective of critical philosophy, on the other hand, it is difficult to deny that while things are not dependent on one's perceptions of them for their existence, things do appear as they do largely because our perceptual and conceptual faculties have the structure they do have. It follows, from considerations made at this philosophical level, that things as they appear to exist in an independent space and time are really (= ultimately) mind-dependent, i.e. the world is ultimately or transcendently, ideal. I should point out that Walsh eventually comes to reject Kant's claims with respect to the thesis that the world is a world of appearances in favour of his own argued-for position that the world is a common world of facts constituted through judgment.<sup>14</sup> Walsh thus comes to the conclusion that Kant's transcendental idealism/empirical realism distinction, in its original form, is indefensible. My position with respect to Kant's 'levels' analysis of the appearance/reality distinction is that such

an analysis follows as a natural result of Kant's central thesis of transcendental idealism and therefore, like that doctrine, is subject to the arguments raised against it in the first chapter of this essay. In particular, while the distinction between appearance and reality at the two levels may have a prima facie plausibility when considered as an epistemological thesis, it would seem to lack all plausibility from the perspective adopted by the would-be ontologist. The problem of the grounds of objectivity arises in the context of Kant's theory of objectivity which, as I have argued, is the bed of Kant's ontology; thus interpreted the thesis of transcendental idealism is a theory with respect to the grounds of objectivity. Kant, in short, must justify his epistemological strategy (re-interpretation of Locke's theory of ideas) to the effect that things are empirically real for science and common sense but transcendently ideal for those who care to think about the specific philosophical problems involved. I have argued in connection with Leibniz that epistemological modes of talking do not cut deeply enough and I would want to say the same in this case; what, after all, does it mean to say that ultimately the world is a world of appearances and that science is operative within the realm of appearances? It must mean (given Kant's limitations of knowledge doctrine) that we can never have a science grounded in the nature of things, regardless of how much empirical success is achieved.

Kant would say, presumably, that the discovery of the atomic structure of matter (say) provided an empirical insight and new understanding into the nature of things but ultimately even physics was applicable only to appearances. In other words, at best Kant's theory that the world is a world of appearances devolves into a claim that empirical truth can never be more than phenomenal because we can never know whether other sorts of beings would perceive or cognize things in the way we do. But this amounts to acknowledging my claim that according to transcendental idealism, the grounds of the world order lie in the nature of the subject and this is the position Kant must defend and which I have been questioning from the perspective of ontology. One recent commentator on Kant, one with unusually considerable sympathies with transcendental idealism as an epistemological thesis, reaches the conclusion that transcendental idealism cannot explain why the world should conform so readily to our cognitive capacities, which is equivalent to my claim that transcendental idealism runs into difficulties (of an ontological kind) over the grounds of objectivity:

"When he asked himself how we might know anything about the world Kant replied that there were three possible theories. Knowledge might be read off from the world; the empiricists would explain all our knowledge in this way. It might be read into the world by us; this is Kant's own view about the limited synthetic a priori knowledge we possess .... Kant's own account is promising; at least in a slightly modified form - he has no right to deny

that the picture we construct may coincide with the real nature of the world in itself and his list of the principles of human thinking requires amendment. But it will not cover all the ground. As we saw earlier, constraints internal to his theory require him to admit the existence of things in themselves, with his own mind amongst them as an active subject of synthesis ... And finally we have now seen that Kant's solution leaves it unexplained why the world should be so readily comprehensible to us, and that it affords no ground for our confidence that the future will continue to follow those relatively simple laws which we make the basis for our inductive extrapolations. These are not things that can be read into the world, in the constructions of the world of appearances; they depend on how the world itself turns out, and therefore on the character of the data we receive from sensory experience." (emphasis mine)<sup>15</sup>

I shall, for the sake of examining Kant's argument vis a' vis Leibniz, grant Kant his claim that we are committed to thinking about the world at two distinct levels; on this account, knowledge of objects is a knowledge conditioned by (= limited by) our cognitive capacities. I think it can be shown that Leibniz's conception of knowledge likewise involves a 'limitation of knowledge' doctrine, only Leibniz does not think that any sceptical consequences need follow from this. To begin, a brief review of Kant's theory of sensibility is required. According to this theory, space and time are the forms of intuition which the mind brings to what is given to the senses; space and time are themselves pure intuitions in so far as they are not abstracted from experience but contributed by the mind in ordering the sensory manifold

presented to it. Thus space and time are seen to be constitutive ingredients in our knowledge of things; but while they may be constitutive of our knowledge in the sense that space and time regiment sensory data into specific spatial and temporal forms, the contribution they make is of a negative sort, i.e. they set limits to what can be known by human minds. The categories are the more positive constituting capacity being thoroughly active rather than passive like the forms of intuition. The constituting active capacity of the mind and its capacity for setting limits on what can be knowable are the two sides of the same coin, so to speak; they are simply the concomitants of a perceptual and conceptual capacity combining form and content.

Kant's theory of sensibility as presented in the 'Transcendental Aesthetic' and before it is complemented by the theory of the understanding in the 'Analytic', construes sensible intuition a necessary condition of objective knowledge. It is the failure to recognize this independent contribution to the overall cognitive situation by sensibility that Kant considers the central error in Leibniz's theory of knowledge. However, Kant is not consistent on this point; or, more accurately, he is of two minds about it. In the 'Amphiboly of Concepts of Reflection' which I shall be discussing in more detail soon, Kant charges Leibniz with failing to distinguish between sensibility and understanding, of treating the

difference between ideas and images as one of difference in degree rather than kind. In 'On a Discovery', within the context of the controversy with Eberhard, Kant's story is quite different. Here Kant construes Leibniz as being concerned with how sensibility and understanding work together to make experience possible. Perhaps it is pointless to even attempt to explain these conflicting characterizations of Leibniz's position if only because the context of Kant's argument in each case is so different. However, since I think it is possible to argue that on Leibniz's theory the senses do supply an independent input to cognition and contribute indispensably to knowledge, I am obliged to consider Kant's 'Amphiboly' presentation where this is explicitly denied. Yet my main interest is by no means to try and rescue Leibniz from Kant's criticisms. In any case this is quite out of the question for the fact is there are really two opposing views which Leibniz adopts towards the sense-understanding issue only one of which could possibly represent the Leibniz criticised in the 'Amphiboly'. This is the position epitomized by Leibniz's identification of sense perception with confused thoughts. Of this Leibniz, Kant's critical remarks are both accurate and acute but it must be said that this is the Leibniz who filtered through in the school of Wolff, the most eminent of Leibniz's rationalist disciples and very much a part of Kant's philosophical back-ground. The second position takes what is almost a

completely opposite view; in the New Essays for example, Leibniz attacks Locke for failing to distinguish 'image' and 'idea'. And, as I have already mentioned, Kant himself in the Eberhard controversy defends Leibniz against the Eberhardians and the Wolffians by interpreting Leibniz as being concerned to mark the two sources of knowledge, sense and understanding. What I do hope to do is simply mitigate the force of Kant's criticisms by demonstrating that they fall quite short of appreciating the full meaning of certain crucial aspects of Leibniz's theory of knowledge.<sup>16</sup> Leibniz himself may not have agreed with some of the views I shall attribute to his general position (although I happen to think that he would) but I do not claim to be defending Leibnizian doctrine or even salvaging the few remains; rather, the aim is to show, with the help of some slight reconstruction, that despite Kant's anti-rationalist tendencies, the structural affinities which exist between his theory of cognition and that of Leibniz are of considerable consequence in respect of the problems with the Kantian theory of objectivity.

The unfortunate truth about Leibniz is that nowhere in his writings do we find a theory of knowledge as we do, for example, in Descartes, Locke and Kant. Leibniz never gave the subject a developed treatment in its own right. What we would consider topics proper to theory of knowledge are discussed by Leibniz in connection with his major concerns, metaphysics, logic and dynamics. There

is, however, one article in which Leibniz is solely concerned with his conception of knowledge and judging from his frequent references to it in his later writings, he considered his definitive statement on the subject. The article is entitled, 'Meditations on Knowledge, Truth and Ideas', published in a journal in 1684. As R. McRae in Leibniz: Perception, Apperception and Thought has recognized, the article is simply too brief and of inadequate scope to be regarded as a complete theory of knowledge.<sup>17</sup> Still, the article would be central to any attempted reconstruction of such a theory from the available material. The article presents a classification of concepts and ideas in terms of their capacity to represent or express the characteristic properties of objects which properties, to a greater or lesser degree, approximate the 'real' properties which their objects possess. Knowledge is characterized as expressible through concepts; by means of 'clear' concepts one is able to identify an object as belonging to a certain class of objects. This implies that the concept supplies sufficient information about the characteristic properties of the object to set it apart from others. A concept which fails to do this is 'obscure' and explains one's inability to recognize a certain object for what it is. However, it is possible to have a clear concept of, say, gold, and yet not be able to enumerate its characteristic properties. In such a case, what one can do according to Leibniz, is identify the object as

gold solely by relying on memory, without knowing anything further about the characteristic properties which gold possesses. To possess such a concept is to have a 'clear' but undeveloped or 'confused', concept of the object in question: with further analysis of the object's properties it is possible to develop concepts which are 'clear' and 'distinct' and it is plain enough that there can be and often are, degrees of 'distinctness' in this sense, the more sophisticated our analytical techniques the more progressive our concepts. Knowledge will be more or less complete as concepts are more or less adequately developed (MKTI, pp 291-292)

These terms are part of Leibniz's technical terminology and with one or two exceptions, his use of them is consistent in short articles, letters, the New Essays and the Discourse on Metaphysics which followed MKTI and contain either reformulations of the classificatory terms first presented there or very slight elaboration on them. I mention this because it seems to me that Kant's reading of Leibniz in this respect is simply mistaken. It may be of course, that Kant did not read Leibniz at all but derived what he knew of Leibniz's doctrines from Wolff and his school, the most prominent of Leibniz's disciples; Kant does mention the New Essays in the Prolegomena and was almost certainly familiar with the so-called popular works, The Monadology and Theodicy. Whether Kant had read Leibniz or not, his (Kant's) discussion of Leibnizian

principles in the 'Amphiboly' and in 'On a Discovery' leave very little doubt that Leibniz's general philosophy was a permanent and influential feature of Kant's background and one with which he struggled (some might say, to free himself from) in defining his own position especially with respect to theoretical reason, teleology and the concept of matter.

Again, by arguing that Kant misunderstands Leibniz regarding the meaning of 'clear and confused' concepts, ideas and representations, I hope to establish that the two theories of sensibility carry commitments to the position that human sensibility is fundamentally a limited form of representation of things. As the issue centers around the ontological status of sensible (secondary) qualities, I shall begin with Leibniz's characterization of the 'sensible'. Leibniz argues that the concepts of sensible qualities are 'clear' but 'confused' concepts in that it is by means of them that we recognize the sensible qualities for what they are; for Leibniz, to have a clear idea or a clear concept is simply to have the capacity to recognize a particular appearance; the dispositional nature of ideas is stated or implied in various articles, for example, in 'What is an Idea?'; "In my opinion, an idea consists not in some act, but in the faculty of thinking, and we are said to have an idea, even if we do not think of it, if only, on a given occasion, we can think of it" (L 207). Leibniz makes it clear that the capacity for

recognition of appearances is the function specifically, of 'clear ideas' or 'clear concepts' implying that he understands the capacity for recognition to be one of the most basic functions of thought since clear ideas are the most basic of ideas. Thus, to have a clear concept of red is to be able to recognize an instance of it, or to alter the idiom, to have a sensation of red and 'know', in the sense of 'recognize' or 'identify' one's experience as such. Thus, Leibniz states, "For this reason it is usually said that the 'concepts' of these qualities are 'clear', since they serve us in recognizing them ..."  
(L 548). However, although sensible qualities are sufficiently recognizable to allow of being identified and re-identified, they do not 'tell' us anything further about their constitutions, that is, we cannot, by observation alone (tactile, visual, audial) discover what sensible qualities are or what causes them to effect our sense organs in the way they do. Therefore, Leibniz declares that the concepts of sensible qualities are not 'distinct' but 'confused'. He even says that "sensible qualities are occult qualities" (L547) but by this he means that sensible qualities are not self-explanatory; they are the manifestation of something (physical properties) which we have not as yet been able to discover and therefore do not fully understand. Leibniz is here making a perfectly legitimate, i.e. scientifically acceptable and commonplace distinction between the manifest

properties of sensible qualities and the physical or micro-physical properties which serve to explain them. At the philosophical level this distinction is equivalent to the difference between having a concept which can do no more than help us recognize a particular experience and a concept or set of concepts, whose explanatory power is much broader. If it is true, says Leibniz, that red is the whirling of very small globes which produces light, how are we to connect such occurrences which we cannot perceive, with our familiar particular perceptions of the sensible qualities in question (L547). This looks very much like asking how our explanatory hypotheses 'hook on' to the complex physical processes they are about, or, how to express the relationship between the terms of our language at the observational level and the terms of our language at the theoretical level in scientific theory. There is another consideration which Leibniz thinks limits the explanatory power of concepts of sensible qualities; it would be very difficult, if not impossible, to define or explain the concept of red to someone whose experience did not include red objects or who had never had a sensation of red. There is nothing contained in colour-concepts which would be of assistance to a person born blind attempting to understand what colours are like; perhaps this is too strong a view to attribute to Leibniz for we can after all describe colours without relying on colour-words and this might be sufficient for giving the blind person some idea

of experiencing and understanding colours. Nevertheless, Leibniz's point is sound. Descriptions of sensible qualities are secondary to the actual experience of them when what is in question is a basic, perhaps primitive, understanding of what they are. Thus, when Leibniz states that clear knowledge is "confused when I cannot enumerate one by one the marks which are sufficient to distinguish the thing from others, even though the thing may in truth have such marks and constituents into which its concept can be resolved" (ibid) and says that our knowledge of sensible qualities is just such knowledge, we now have a good idea of what he means. To possess a concept of a sensible quality is, for Leibniz, to be able to recognize that particular quality in perception and to be able to distinguish it from others of the same kind, e.g. red amongst a spectrum of colours. We cannot, however, express or state the distinguishing marks of sensible qualities even though these qualities may, indeed do, possess properties which define their natures and serve to distinguish them from others. The point here is that these properties are not manifest and therefore if we are to know what they are and how they define the nature of a particular thing or sensible quality we must probe further by analysis and experiment. Thus, though our knowledge of sensible qualities is confused in that our concepts do not express the marks or properties which distinguish particular qualities and which define their

natures (if only we knew), there is nothing 'confused' about sensible qualities themselves. The technical or idiosyncratic sense of 'confused' becomes apparent. Our knowledge of the sensible is of necessity knowledge characterized by the limitations of human perception and cannot therefore be taken at face value. If what is represented or expressed in perception (perception is essentially expressive for Leibniz) is so from a limited perspective, as indeed any perspectival knowledge must be, it (the expression) cannot stand as the complete story for what is expressed. If this is understood, it can be seen that the issue in question is not the ontological status of sensible qualities, as I have already mentioned, but the judging of the adequacy of human sensibility to characterize what is represented or expressed therein.

If we approach this issue from a slightly different direction it will be seen that Leibniz is in fact emphasizing the (Kantian) distinction between the intuitional and the discursive. For Kant, concepts are the essential constituents of judgment; intuitions are represented in judgment by being expressed in conceptual form for it is the essence of intuitions that they (not being discursive) cannot qua intuitions be expressed in judgment. And Leibniz's point about sensible qualities, which are intuitional in kind, is that they can be expressed in judgment in only a limited fashion and like Kant, Leibniz thinks this is done by means of (clear) concepts. But

for Leibniz this simply means that to have a concept of a sensible quality is to be able to recognize an instance of it in perception. Now, given Kant's solid commitment to the sensibility/understanding distinction, can the having of empirical concepts like concepts of sensible intuitions, mean anything other than what it does for Leibniz, i.e. the ability to recognize or identify an instance of them in perception? Surely not, for what possible alternative role could empirical concepts have? Kant's model of the relation between concepts and intuitions dictates that intuitions, without concepts, would be unrecognizable and incomprehensible bits of sensation, sensation - yes, but not perception for perception involves the capacity for recognition ('intuitions without concepts are blind'); furthermore, this capacity for recognition is one of the functions of synthesis described in the 'Transcendental Deduction' (A) and synthesis is a function of concepts.

It is clear that Leibnizian position concerning the relation between concepts and sensible qualities and the Kantian position regarding the relation between concepts and intuitions share a common assumption or presupposition, viz. perception presupposes the power of conception. What it is crucial to recognize is that a position (of which Leibniz is sometimes representative) which characterizes the difference between sensibility and understanding as one of degree and not of kind, that is, according to which

knowledge is but a continuous decline from the pure intellectual object to the confused objects of the senses, could attach no ultimate significance to the distinction between perception and conception. And Yet, Leibniz either makes this distinction explicitly or assumes it implicitly throughout his work and those passages (only one of which I think is really definite - L580) that do convey the impression of the 'descending scale' view of knowledge are the exception, and inconclusive ones at that. Furthermore, although I cannot discuss this point, it is Leibniz's view that thought is made possible only through the combination of perception and apperception (self-consciousness) and since perception always involves sensation (excepting the possibility of unconscious perception) in the sense that the capacity for sensation is the result of the union of soul (apperceptive entity) with a body having sense organs, the more complete and fully comprehensible story of a Leibnizian view of the possibility of and limitations on, human knowledge, begins to emerge once these cognitive distinctions are appreciated seriously and not passed over in preference to the usually glib and generalized formulations of Leibniz's extreme rationalist tendencies. This excerpt from a letter of Leibniz's to Wagner in 1710 (W 505) exemplifies Leibniz's recognition of the different kinds of faculties or abilities required to account for what human knowledge seemed to be: "...soul is attributed not only to animals, but also to all other

percipient beings. In the strict sense, soul is employed as a noble species of life, or sentient life, where there is not only the faculty of perceiving, but in addition that of feeling, inasmuch, indeed, as attention and memory are joined in perception. Just as, in turn, mind is a nobler species of soul, that is, mind is rational soul, where reason, or ratiocination from universality of truths, is added to feeling. As therefore, mind is rational soul, so soul is sentient life, and life is perceptive principle."

As I mentioned earlier, when Kant took the opportunity of defining his own 'critical philosophy' vis-à-vis Leibnizian rationalism in the controversy with Eberhard, he seemed no longer to believe that Leibniz 'intellectualized appearances'. In fact, when Eberhard repudiates Kant's charge that the philosophy of Leibniz and Wolffe fails to distinguish the objects of sensibility and understanding in terms of their content and origin, or, as Kant himself said in CPR, that "The concept of sensibility and appearance would be falsified ... if we were to accept the view that our entire sensibility is nothing but a confused representation of things ..." (A43=B60), Kant falsely denies ever having made such a charge.<sup>18</sup> The point being not to examine Kant's moral rectitude but to emphasize that, even if Kant did forget what he had written in CPR, he obviously no longer thought that Leibniz falsified the concept of sensibility, at least not in the

straightforward way that Kant's criticism of Leibniz in the 'Amphiboly' would have us believe, for otherwise this was the ideal opportunity to press home such a criticism, in bold contrast to the position he wished to attack. To corroborate this suggestion I draw attention to Kant's almost complete turnaround regarding Leibniz's sense - understanding position. Towards the end of 'On a Discovery' Kant characterizes the Leibnizian position as one which is really concerned with explaining how sense and understanding, as heterogeneous sources of knowledge, combine in making experience possible. As the following passage shows, Kant's final word on the Leibnizian position finds Kant getting to the core of the issue, i.e. the problem which it was Leibniz's central purpose to explain and towards which Kant eventually accepts a secure kind of scepticism; this is the problem of explaining ultimately why (if not how) our sensibility and understanding should combine in just such a way to make possible our experience of nature, i.e. the objective world. And as should be evident from Chapter One, this is merely another version, another way of specifying, the problem that arises over the foundations or grounds of objectivity which, for Kant, means that he must explain the fit between our categorial concepts and the world. In the context of the sharpening of the debate with Leibniz the fit requiring explanation is between sense experience (which is veridical as such) and the different minds (subjects) whose experiences

(perceptions) agree; same problem, different terms. Kant states:

"The soul and the substrate of the appearances which we call bodies, a substrate which is completely unknown to us, are, to be sure, two completely different beings. These appearances themselves, however, which are conditioned by the form of their intuition belonging to the constitution of the subject (soul), are mere representations. Thus, one can well conceive of the connection, according to certain 'a priori' laws, between understanding and sensibility in the same subject, and at the same time the necessary and natural dependence of the latter upon external things, without surrendering these things to idealism. As for the harmony between understanding and sensibility in so far as it makes possible an 'a priori' knowledge of universal laws, the Critique has essentially shown that without it no experience is possible .... We could, however, still provide no reason why we have precisely such a mode of sensibility and an understanding of such a nature, through the combinations of which experience becomes possible. Nor could we explain why they, as two otherwise completely heterogeneous sources of knowledge, always agree so well as to permit empirical knowledge in general and especially (as the Critique of Judgment points out) as to permit an experience of nature under its manifold particular and merely empirical laws, of which the understanding teaches us nothing 'a priori', as if nature were deliberately organized in view of our power of comprehension. This we could not (nor can any one else) ((sic!)) further explain." (OAD, p 159)

Here Kant's deeper disagreement with Leibniz's programme becomes apparent when we place this particular argument within the context of the general problem of objectivity. First, the issue does not center around the question of the two independent sources of knowledge, sensibility and understanding and, we shall never understand the problem

if we consider it as an epistemological problem only. Consider: Even if Leibniz failed to distinguish between sensibility and understanding, that is, failed to make the kind of distinction which would keep Kant's theory of sensibility with its impositional (space and time) thesis, in tact, it is hard to see that the consequences are so damaging, for experience is essential for knowledge any-way; even monads must have experiences and experiences of phenomena (bene fundata) at that. So even if we granted that the Leibnizian could have no recourse to the sense-understanding distinction (and we have shown that there is good reason to think this simply false) it would not be an admission of immaterialism, or spiritualism. Human knowledge is knowledge of phenomena and at the level of experience the conception of the monad is not involved. In other words, like Kant, Leibniz accepts that experience is experience of phenomena but unlike Kant, does not construe this as an epistemological judgment, or more precisely, it is not a conclusion reached by epistemological considerations. It is a fact about objects that they are not experienced as they really are, i.e. in terms of their fundamental constituents, and this fact, far from having semi-sceptical consequences in respect to our access to the nature of objects (as it does for Kant) points to the necessity for postulating certain kinds of entities as the foundation of appearances. It is this ontological thesis that is the basis of Kant's disagree-

ment with Leibniz and in terms of which Kant defines his own position vis à vis the Leibnizian. It is this ontological reading which I believe the quoted passage helps to bear out. Kant begins by acknowledging that there are ultimately two types of being in the world, souls (mind) and the material substrate of appearances, bodies (matter) with the usual Kantian proviso that what underlies appearances is in principle unknowable. That the substrate or ground of appearances is unknowable need have no sceptical implications for our theory of knowledge once it is realized that objects are conditioned (constituted) by the nature of the subject (soul). And, once this is understood, that the relation between sensibility and understanding should be such as to make experience possible becomes conceivable, for both sensibility and understanding belong essentially to the subject; thus, the grounds of the objectivity of phenomena lie in the nature of the subject (in the subjectivity of the subject) in the form, for Kant, of the specified categorial concepts and the forms of sensibility. Ultimately, objectivity is grounded in the nature of subjectivity and the foundation or ground of appearances is just the objectivity as constituted through specifications of the nature of the subject.

In the closing paragraphs of 'On a Discovery' from which the quoted passage is taken, Kant claims to be representing Leibniz's true position (OAD; p. 159); what Kant is really doing, as commentators have recognized, is

to read Leibniz in a way which is consistent with the critical system. Accepting what I have just said with respect to the grounds of objectivity this means trying to show that Leibniz's position is a crude anticipation of Kant's own transcendental idealism, for the fundamental thesis of transcendental idealism is that the grounds of objectivity lie in the nature of the subject. And between this position and Leibniz's there is a great gulf fixed, so great that Kant's attempt at bridging it seems spurious indeed. Monadism, at both the metaphysical and physical levels of theory is a systematic formulation of the nature of reality; it is a rendering of the order of being in the universe into a hierarchy and the existence of phenomena at the level of experience is one kind of being with a fixed place in the order. The point which it is important to grasp here is that this order is grounded in the structure of the universe, it is an order that is determined by ontologically ultimate entities. Kant's transcendental idealism breaks radically with both the metaphysical realism of Leibniz and the scientific realism of Locke but it is with respect to ontology (grounds of the world order, of objectivity) not epistemology, that the break is genuinely radical. In fact, Kant does come very near to adopting a position which looks very much like monadism (as he interpreted it), i.e. that the known world is an auto-affection of the soul ("... for why should one accept bodies in general, if it is possible that

everything which occurs in the soul can be viewed as an effect of its own powers ..."; *ibid*) in the 'Second Paralogism' (A358 - A359). Here, Kant in effect argues that if we assume the soul (thinking subject) to be something in itself and matter as appearance or a species of representations in us, then there exists no grounds for distinguishing matter, as one kind of entity, from mind, as another kind of entity. Indeed, the epistemology of transcendental idealism is structured along the lines of Kant's version of monadism; Kant, like some contemporary interpreters of monadology, gives the latter a strong phenomenalist reading and interpreted along these lines, the metaphysics of monadism is compatible with Kant's epistemology. For according to this interpretation of monadism, the known world is at once completely autonomous from the realm of being while remaining dependent on the realm of being and Kant's transcendental idealism implies just such a separation between knowledge and being. There is however an absolutely crucial difference between the two (monadism and transcendental idealism); Leibniz provides an account of how individual substances provide foundations for phenomena (*phenomena bene fundata*) without which, Leibniz took for granted, the known world floats in a metaphysical limbo. Kant cannot give any such account for to do so would be to deny the ascribed function of the transcendental subject - the transcendental unity of apperception. Kant cannot provide an

account of how the known world is grounded in the noumenal world for he must be agnostic with respect to any purported characteristics of noumena. This restriction is rooted in the epistemology of transcendental idealism; there is another more consequential restriction on the legitimacy of any appeal by Kant to the grounding function of the noumenal world, vis: any such explanation stands in direct conflict with what is in effect the doctrinaire explanation provided by the 'Analytic' of CPR - the constitution of the known world by the transcendental subject. This restriction is rooted in the ontology of transcendental idealism for it is the result of making the known world ontologically equivalent to the world. This of course is not Kant's intention for the world apart from our knowledge of it, i.e. the world simpliciter, is permanently inaccessible. But Kant's actual formulation and use of transcendental idealism tells another story for if it is not assumed that the known world is isomorphic with respect to the world as it actually or really is then the order apparent in the known world at all levels, from the most basic and unspecified level of experience in general to the more particular and complex level of the laws of nature (science), must be without a real source in the world and must therefore be a product solely of the constituting powers of the knowing subjects. And what is this a statement of if not a kind of ultimate idealism; that is, transcendental idealism is a more philosophically respectable way of saying that,

after all, the world is ultimately ideal even though for the purposes of everyday experience and science we must regard it as empirically real. However, for Kant and I should argue for any philosophically-oriented reflection, philosophy is the final court of appeal on this and related issues. The question, what is the grounds of the world-order? is one which must be answered philosophically even if the answer itself or the approach to an answer lies in science. To say that the answer to such a question lies in science is just to say that the foundations of the world order, the grounds of objectivity, the establishing of objective knowledge - this kind of question - are in the world itself, not outside it. Whatever the flaws of monadism, it does locate the grounds of the world order in the world, in the basic stuff of the world, and it thereby allows for the possibility of a science of nature which has complete knowledge, i.e. knowledge of both the conditioned and the unconditioned, as its goal. Leibnizian realism is structurally capable of countenancing or providing for just such an explanatory system. Monads, atoms, corpuscles, as candidates for the basic stuff of the world are unconditioned, that is, they do not depend on any other entity for their being; but they are not therefore outside the world (as Kant thinks they must be). To claim to have knowledge of the unconditioned is not to claim to have knowledge of something not standing in causal relations with other things. Nor is it to claim knowledge

of the intelligible world or knowledge by means of intellectual intuition. It is to claim that as far as our knowledge has progressed (= as far as science has progressed) nothing more basic or fundamental exists than this type of entity, e.g. monads, atoms, forces. Matter can be ultimately accounted for in terms of this type of entity and since nothing more basic than it is known we can say that it is (1) unconditioned in the sense that it does not depend on anything else for its existence; (2) it conditions everything else in so far as without it nothing would be.

In Chapter One I argued that spontaneity is the ontological foundation of reason and here at least Kant is required to acknowledge the existence of the unconditioned - the power of spontaneity. Furthermore, since there is one reason which manifests itself in different ways in our moral and theoretical experience, the unconditioned, far from being of marginal importance, lies at the heart of Kant's whole philosophy. There is at least one type of thing in the world which is unconditioned and it is central to Kant's whole philosophical enterprise. Now Kant does not, on the face of it, want to deny or even question, the existence of matter in the world; but the problem for Kant is how, given the claims about the ultimate ideality of the world and the grounding of the world-order in the nature of the subject, he can account for the existence of something - be it matter or space - which is other than

mind. I have said that Kant subjectivizes space and in the process attempts to execute the (ultimate) idealization of matter. But this destroys the credibility of the theory that transcendental idealism affords an objective knowledge of the world by introducing talk about appearances rather than things, for if we claim to have objective knowledge of the conditioned, then it must be the case that the ground of the conditioned objects of experience is not simply the ground for, or the subjective condition of, the possibility of knowledge or experience. The conditioned objects of knowledge must be related to a ground which is other than or not connected with, the conditions for knowledge; if not, then both the existence of the ground of the conditioned objects and the conditions for knowledge must be construed as deriving from the same source - the nature of the subject - and objective knowledge (knowledge of what is other than mind) becomes impossible. The solution, as I see it, is to make the ground of the conditioned objects of knowledge, the unconditioned, so that appearances really are concerned with some kind of independently existing thing, thereby providing for the possibility of a genuine 'objective knowledge' and something which is the foundation of appearances (phenomena bene fundata'), which is other than mind. Kant's theory of the ideas of reason provide us, if not Kant (who regarded the Ideas as having merely regulative value), with an account of how and why condition-

:ed totalities must have a conditioning ground if a deter-  
:minate structured knowledge of the world, and a science  
which has such knowledge as its goal, are to be possible.  
Now the conditioning ground of conditioned totalities  
must be unconditioned; the unconditioned for Kant is nec-  
:essarily unknowable, indeed it is incognizable. Conse-  
:quently, Kant's denial that the unconditioned plays a  
role in knowledge amounts to a denial of the possibility  
of a determinate structured knowledge of the world and of  
the possibility that science can move in the direction of  
completing itself, i.e. a knowledge of the material world  
which is structurally complete. When we align this  
interpretation of the ideas of reason with Kant's theory  
of science in general, the story is different, for, on  
Kant's theory of scientific theorizing, science has the  
unconditioned, or knowledge of the unconditioned, as its  
goal; and in MFNS Kant's analysis of matter into forces  
is meant to be a demonstration of the conceivability of  
Newton's laws of motion given that matter is composed of  
the parts it is composed of. Newton's mechanical system  
derives its explanatory power from the kind of thing which  
makes up the basic stuff of the world - forces of attrac-  
:tion and repulsion. And this looks like offering a just-  
:ification of the explanatory power of mechanical laws in  
terms of what is itself unexplained, for forces are the  
most basic type of thing and thus not explicable in terms  
of anything else; they are, in a world, unconditioned,

despite Kant's attempts to show that nothing could be known to exist which was unconditioned.

6. We saw that Kant's argument with respect to spontaneity proceeded from the possibility of action and (free) thought to the requirement of an ontologically structured spontaneity - minds with the power of spontaneity; in Chapter V, I shall argue that we get a kind of variation on this pattern of argument proceeding once again from an argument concerning the 'possibility of knowledge' (epistemology) to an ontological thesis about the world. In this case, our starting point is the transcendental unity of apperception read (as I have argued for) in the Leibnizian mode as the requirement that any representing must be a whole of representing even though no whole of representing is a whole represented, as objects of knowledge are, for Kant, conditioned objects. But the ideas of reason specify that we must 'think' the unconditioned ground which is the whole represented and that this is the proper domain of reason rather than the understanding. In this way we arrive at the ontological thesis (once the architectonic restrictions on the full use of the ideas of reason as regulative principles have been lifted) that we must have or strive towards a whole of representings which is also a representing of a total whole (the totality of the world). Both these arguments, or argument-patterns end in an ontological conclusion, the former with

respect to minds and the latter with respect to the world; there must be a kind of entity which exists independently of our knowledge of it and which can be postulated as the ground of the conditioned objects of experience, otherwise our claims to possess objective knowledge of the world cannot be supported; there must be minds or something other than appearances since we know we possess the power to initiate the series of conditioned events. There are minds and there is a world. Kant's central doctrine, transcendental idealism, obliges Kant to locate the ground of the relation between minds and the world, in minds, i.e. the conditions necessary for the possibility of experience are injected into experience by the knowing subject. While this 'transcendental' shift of Kant's is fully comprehensible when placed within its problematic context (*vis à vis* Leibniz, Locke and Hume), I have tried to argue in this chapter that Kant's solution fails when considered specifically as an assault on the central thematic claims of Leibnizian realism. In the remaining two chapters, I shall argue that Kant's theory or philosophy of science not only lends support to this conclusion but helps us to proceed a step further with it. Science, according to Kant, has the unconditioned as its goal and the necessity which binds theories together into a hierarchial arrangement is ultimately derived from an unconditioned ground. This amounts to stating that the necessity in the world, between the conditioned objects of the world, is itself

derived from the relation these conditioned objects have to their unconditioned ground - thereby showing that the Leibnizian doctrine of the 'grounding' of phenomena cannot be dismissed after all in favour of transcendental idealism. With the help of an argument borrowed from P. Krausser, I attempt to demonstrate that science presupposes the existence of things in themselves for its possibility and that this requirement is met in the form of the unconditioned. Dismissing the theological associations with the unconditioned, we are left with the postulation of unconditioned entities in the world, such as atoms and forces or monads. A case can be made out for postulating the forces of MFNS as the unconditionally real, constituting monad-like entities which are, in turn, stripped of any phenomenalist or idealist connotation. Kant has a very good argument against the acceptance of Leibniz's own conception of the monad, i.e. that monads do not enter into real causal connection. This makes the rejection of monadism in its original form necessary. Kant's own force theory of matter is not at all very different from Leibniz's and Kant does more or less accept Leibniz's own previously worked - out theories of matter, substance and space (as we have briefly seen already). If the fundamental forces of repulsion and attraction postulated by Kant in MFNS are unconditioned then we have a candidate for the unconditioned ground of the world-order or, what amounts to the same thing, a vindication of the Leibnizian concep-

:tion of the grounding of phenomena. Kant of course wants to say that we can have no knowledge of these fundamental forces because they are unconditioned (and therefore incognizable) and do not stand or cannot be known to stand in real causal relation with other conditioned entities. If, however, it is possible to describe these fundamental forces (or monads) in terms of the 'real in perception', i.e. Kant's intensive magnitudes of the 'Anticipations of Perception' then, we shall have a perfectly comprehensible (knowable or cognizable) description for them. Forces are known, or can be known, under this limited description. Their existence must be presupposed because without them nothing else would be. I am not arguing on behalf of a scientific theory about what the basic constituent of matter is - I hope that much is apparent. Rather, the argument is that it is this kind of metaphysical theory of the nature of reality, a metaphysical theory concerned with the explanation of the grounds of the world-order, which it is the proper function of philosophy to propose. The alleged reduction of matter to forces is not, from the philosophical perspective important because of the actual physical reduction, but for the fact that one kind of entity is being explained in terms of another. In the 'Second Antinomy' Kant argues, or seems to argue, against there being knowable unconditioned matter in experience, which is of course consistent with the central claims of transcendental

idealism. Kant's attempts in MFNS, to end up with two basic forces as the constituents of matter, must be regarded as science and science, as we know from the CPR, belongs to the realm of the empirically real. Having argued against the claims of transcendental idealism however, we are justified in judging this final gesture of Kant's at preserving the transcendently ideal status of matter, a failure. Kant's argument in the 'Second Antinomy' can hardly be judged successful anyway, for he doesn't show conclusively that unconditioned entities could not be met with in experience. Perhaps they could not be met with under the descriptions Kant always seemed to think such entities must have; that they can be known under some other limited description is another question and one which Kant never considered.

If all this is correct then there is no reason for not postulating, within the mode of philosophical theory with respect to the nature of reality, some entity as candidate for the unconditioned. I emphasize that what is of importance here is the philosophical prescription (of reality) which I believe it is possible to provide in this way; I have provided an account of what might be construed as a candidate for such a role, so as to complete the story, not because I think that I can show that forces really are the basic constituent of the universe. It is the type or kind of entity which forces are that identifies them as possible candidates for the

unconditioned or, to borrow phrase from Sellars, forces are the unexplained explainers which are required to support the theory of objects and more generally, a complete ontology, accounting for the variety of kinds of things in the world, as well as providing the justificatory grounds for our explanatory frameworks and conceptual schemes. Although I shall not be discussing this in detail, I indicate in Chapters V and VI that Kant's categories require an ontological interpretation to complement the accepted epistemological reading they receive; I have argued that Kant's ontological problems concerning living things and persons show that the categorial framework is not constitutive of certain kinds of things in the world and that therefore, there are things which fall outside the extension of the categories. As has been suggested to me by W. Hoffman<sup>19</sup>, it is possible to construe the categories as supplying a semantics for the concept of an object so that each categorial framework provides a theory of meaning for the objects falling within it. The semantical system provided by the categories of CPR for living things and persons (e.g.) is insufficient for understanding the kinds 'living things' and 'persons'; in so far as living things and persons are ordinary physical objects the categorial specification of CPR is sufficient to provide us with an understanding of them qua physical objects - and this of course is the whole point. If the exclusivity of the categories of CPR is rejected, then

there exists a plurality of categorial frameworks and a plurality of semantical systems within which, and according to which, we understand the different kinds of entities there are in the world. We require an additional semantics for living things and persons if we are to comprehend them as living things and persons. The categorial system of CPR is at best a semantics for the concept of an object at the most minimal and general level of explanation, in a word, it is the lowest-order conceptual framework for our understanding of the world. The categorial frameworks such as those specifying the ontological kind 'living things' and 'persons' are higher-order concepts or sets of concepts; the concepts of such kinds delineate the type of entity falling within the framework in question. Our ontology then, is built up from a formation of ontological kinds specified in this way so that a plurality of semantical systems providing a theory of meaning for the kind in question is equivalent to being able to comprehend a world in which there exist a plurality of ontological kinds. As I said towards the end of the third chapter, there is a distinction to be drawn between the categories as prescribing the when and where for their appropriate application and the categories as supplying the ontological predicates for determining the existence (=objective validity) of the kind of entity in question. The latter is a domain for empirical investigation, not a priori understanding. I conclude that

means a world consisting of ontologically essential entities.

the concept of an object initiated by Kant's categories in CPR and made applicable to the plurality of kinds of entities so that the predicates 'is a living thing' and 'is a person' are construed as sortal concepts of an object for that particular domain of entities, can only be filled out or completed by science or empirical progress in science. After completing the main business of the final chapter (matter and forces) the essay draws to a close with the remainder that if there is any importance in the general conclusions at which we have arrived, it must surely be this: from the perspective of Kantian (transcendental) idealism where the categorial concepts are considered as conceptually or epistemically necessary, and where the object is construed solely from the perspective of judgment, we must move (thereby complementing the Kantian account) to the perspective of Leibnizian realism where the categories, while they initiate the forming of conceptual frameworks, are themselves rooted in the foundations of phenomena, the structure of the world which it is metaphysically necessary to posit as the ground of the world-order; from the perspective of Leibnizian realism, to complete the account, the object is considered from the point of view of the unconditioned. We thus move from a consideration of the world as a world of appearances, or, a world in which physical objects are just what they appear to be, to a consideration of the world as constituted by things in themselves where this means a world consisting of ontologically essential entities.

Chapter V Kant's Philosophy of Science and the Ideas of  
of Reason : The Unconditioned.

"The Law of reason which requires us to seek for this unity, is a necessary law, since without it we should have no reason at all, and without reason no coherent employment of the understanding, and in the absence of this no sufficient criterion of empirical truth. In order, therefore, to secure in empirical criterion we have no option save to presuppose the systematic unity of nature as objectively valid and necessary." (A651=B679)

1. In this chapter I shall argue that Kant's philosophy of science amounts to a statement of the Leibnizian thesis that the ground of the world order lies in the nature of things. According to Kant's theory of system, science is a goal-oriented activity which has the unconditioned as its goal. Kant's cautious-sounding statement to the effect that we must proceed in science 'as if' nature was designed to be amenable to the system of classification by which we find unity within a widely diverse range of natural things, is simply an epistemologically safe way of saying that nature possesses natural forms and 'specifications of itself' into species and genera which make it comprehensible to us. The fact that Kant does not adopt an empiricist theory of scientific progress according to which the principles we use in constructing theories are used just because they give results, i.e. are explanatorily successful, but offers instead what looks very much like a rationalist theory of science, creates the suspicion that Kant thinks there is a strong connection between scientific theorizing and nature itself, a connection which might perhaps explain

why we are not really free to, for example, give up our belief in induction. What would count as evidence against such a principle? The fact that it fails on occasion is insufficient to make us adopt counter-induction instead. The necessity with which the laws in the systematic unity of nature are related to each other is, we shall see, derived from the unconditioned - the highest principle - which is necessary in itself and which refers to an entity or kind of entity necessary to the world-order. When it comes to the necessity binding together our empirical theories into a hierarchial system, Kant traces this kind of necessity - physical necessary - not to the transcendental unity of apperception, but to some unconditioned ground, hypothesized of course, since the unconditioned is not capable of entering into relations with the conditioned. On Kant's account science must proceed with its progressive search for the unconditioned because the unconditioned is what is required for a complete science; knowledge of the unconditioned is equivalent to knowledge of the one basic power of which those powers known to exist are simply different manifestations: "The logical principle of reason calls upon us to bring about such unity as completely as possible; and the more the appearances of this and that power are found to be identical with one another, the more probable it becomes that they are simply different manifestations of one and the same power .... the fundamental power." (A640 = B677)

A complete science or the possibility of a knowledge of nature in all its forms is thus seen to presuppose the existence of the unconditioned, and the unconditioned is, in Kant's scheme of things, the functional equivalent of the thing in itself. Since Kant argues that scientific activity presupposes that science have a unified system of laws as its goal (for the criterion of empirical truth is supplied by systematic unity) and, since that unity is derived from, or built up from, the unconditioned—which is the source of the necessity binding the system; I shall take it that Kant's theory of system can provide the metaphysical basis for a Leibnizian ontology, an ontology based on the unconditioned.

Kant, perhaps surprisingly, seems to have an account of physical necessity; it arises in the course of the empirical investigation of nature. We must regard causal laws as necessary in order to comprehend the laws of nature as laws at all: "This understanding is no doubt a priori in possession of universal laws of nature, apart from which nature would be incapable of being an object of experience at all. But over and above this it needs a certain order of nature in its particular rules which are only capable of being brought to its knowledge empirically, and which, so far as it is concerned, are contingent. These rules, without which we would have no means of advance from the universal analogy of a possible experience in general to a particular, must be regarded by understanding as laws,

i.e. as necessary - for otherwise they would not form an order of nature - though it be unable to cognize or even get an insight into their necessity." (CoJ; Intro. V) On this account we read the necessity into the particular causal sequences in order to form a conception of the order of nature, or, in other words, by regarding particular causal sequences as necessary we are able to understand laws of nature. Of course, for Kant, since we can never get an insight into how these laws hold with necessity, it follows that we are to regard the laws of nature as necessary whether or not we know what it is about the objects to which the laws apply that might explain the necessity of the laws. Thus Kant tries to account for the necessity of particular causal sequences, clearly regarding such an account as essential for the comprehension of nature and its laws, without any reference to the entities over which such laws range. Kant's difficulty here is that he is trying to explain the necessity of particular causal sequences and thus the necessity possessed by simple causal laws as well as higher order laws of nature, without having a theory of necessity other than his theory of a priori (conceptual) necessity operative at the level of experience in general. If we agree that there are different kinds of necessity - logical, physical (natural), conceptual - then presumably something other than conceptual necessity is required to demonstrate the necessity of a particular causal sequence. Kant does not think that necessity can be derived from objects standing in

causal relation with each other because objects of experience are all conditioned objects and the conditioned is always empirical and the empirical, in turn, never more than accidental. And this is just to say that Kant does not recognize other than conceptual necessity. There is a passage in CPR in which the transition from the necessity involved at the level of experience in general to that required at the level of empirical nature ('order of nature in its particular rules') is viewed, as we have seen in CoJ, as a transition from the necessity of 'rules' to the necessity of laws of nature. It is as if Kant was suggesting that we simply require a greater degree of necessity in order to regard causal sequences as subject to empirical laws of nature: "The representation of a universal condition according to which a certain manifold can be posited in uniform fashion is called a rule, and, when it must be so posited, a law. Thus all appearances stand in thoroughgoing connection according to necessary laws, and therefore in a transcendental affinity, of which the empirical is a mere consequence." (A113)

Now while it may be true that the objects of experience conform to the rules of the understanding and that particular causal sequence can be comprehended as subject to empirical laws, there is no obvious connection between the two, as Kant seems to be suggesting. In fact, as we shall see, it is Kant's considered opinion that only reason or judgment can, by treading where the understanding

dare not, secure the possibility of empirical laws with which nature might be systemized into a unity. As one recent commentator on Kant's theory of science remarks, "... we would still be left with the problem of 'laws', of explaining the sense in which they are necessary..."<sup>i</sup> Yet, just as transcendental laws are necessary for the possibility of experience, the possibility of a nature unified into a system would seem to require necessary empirical laws, in some sense of 'necessary' never fully explicated by Kant:

"A concept of this sort is that of experience as a system according to empirical laws. For although experience forms a system under transcendental laws, which comprise the condition of the possibility of experience in general, there might still occur such an infinite multiplicity of empirical laws and so great a heterogeneity of natural forms in particular experience that the concept of a system in accordance with these empirical laws would necessarily be alien to the understanding, and neither the possibility nor still less the necessity of such a unified whole is conceivable." (F. Intro., II; cf. CoJ, Intro. V - p.25)

Despite the systematic uniformity of nature according to the universal laws and principles of the understanding, we are left with a possibly unintelligible, i.e. unsystematic and undetermined, unity of nature at the empirical level; and for this, some added principle or law is required, a principle to discipline and direct our construction of the empirical unity of nature. Thus, Kant argues, the infinite detail of scientific knowledge could only be

brought to an empirical unity of nature with the aid of such a guiding principle of construction. Notice once again that the mere fact, if it is a fact, that the principles we use in constructing theories are adopted because they are successful, carries little weight with Kant, and this is because success in scientific investigation is itself a function of a theory's or principle's systemizability which ultimately is the sole criterion of empirical truth for Kant (see quotation beginning this chapter).

Kant thinks that nature in its particular forms and varieties must conform to the unifying capacity of our cognitive faculties, reason and judgment, and that only by thus conforming can the unity of nature be realized in a way which is comprehensible to us. For this purpose Kant introduces the Principle of Judgment, which he construes as a guarantee that the empirical laws of nature will form a systematic unity rather than, as Kant says, being "confronted by a crude, chaotic aggregate totally devoid of system". On analogy with the way in which representations are unified in an individual consciousness, there is supposed to be an affinity amongst empirical laws which explains why they are orderable into a single system:

"Therefore it is a subjectively necessary, transcendental presupposition that this dismaying, unlimited diversity of empirical laws and this heterogeneity of natural forms does not belong in nature, that, instead, nature is fitted for experience as an empirical system, through the affinity of

particular laws under more general ones." (F. Intro; IV) So we are to take it that the principle of judgment is a 'transcendental' principle in that it is a necessary pre-supposition for the possibility of regarding nature as a unified system describable in terms of empirical laws. But so far Kant has offered only the analogy of 'affinity' with the unity of consciousness to encourage us to regard the principle of judgment as a transcendental principle; it is true that the principle of judgment is only a subjective, transcendental principle but I shall simply understand this customary proviso of Kant's to be no more than a warning that the principle of judgment does not have a concept of an object of its own, i.e. we must not expect new knowledge with respect to objects from the use of such a principle (ibid; III).

Kant's characterization of the principle of judgment tells us that he clearly sees it or something very much like it, as a necessary pre-supposition for the rationality of scientific inquiry, indeed, the principle of judgment is the one means available to us by which the objectivity of science can be secured. How this is supposed to work brings us to the story of judgment and its essential principle, a principle intended to structure the rational outlook for science; the essential principle of judgment is: "Nature specifies its universal laws to empirical ones, according to the form of a logical system, for the purpose of the judgment." (ibid; V) It is difficult to see how this principle, seemingly personifying nature or

treating nature as the functional equivalent of a god who might be the source of the empirical order of the world, is supposed to secure the objectivity of the scientific enterprise; could we reasonably expect the objectivity of science to be established in this a priori way in any case? Does the assumption that it could, not imply that what science actually achieves or fails to achieve, is irrelevant to its objectivity as a systemized knowledge of nature? Surely, science could fail to establish itself as an objective form of investigation into nature, for example, nature could, in some respects prove to be resistant to our repeated attempts at comprehending it; indeed, it is almost a truism that certain phenomena within nature seem cognitively impregnable. The point is that the objectivity of scientific inquiry and thus the objective status of science depends much more on the actual progress of science than on an a priori principle alleged to justify our confidence in science, as it were, once and for all.

Once again we find Kant attempting to establish a structural truth about the world by means of a priori or epistemic necessity; the connection between judgment (reason) and science is effected by means of conceptual necessity whereby our empirical theories must be thought as systematically (i.e. by affinity) relatable to each other. Empirical theories which serve to explain natural phenomena derive their explanatory power in part from the fact that they 'hang together' in this way. One assumes

that, according to Kant, an empirical theory which cannot be made to fit into a logical order within the system is just not part of the explanatory hypotheses of the science in question. Thus, the unity of system is a necessary condition of the possibility of scientific theorizing and the necessary presupposition of the rationality of science, for the variety of empirical laws and not only can but must be thought as belonging to a system, "on the grounds that the special natural laws fall under more general laws, and that parsimony in principles is not only an economical requirement of reason, but is one of nature's own laws."

(A650 = B678) We have here a parallel in the degree of necessity of the principle of judgment for science and the degree of necessity of the principles of the understanding (constitutive) for knowledge of experience; because the principles of understanding are operative within the lowest level framework of the possibility of experience they are the necessary but minimal conditions for knowledge whereas the principle of judgment operative within the higher level framework of empirical theories is necessary for science but not with respect to knowledge in general.

Thus with respect to science the principle of judgment is indispensable but dispensable with respect to knowledge in general. However, we can also take this difference in degree of necessity as an indication, on Kant's part, that the categorial principles of the CPR require the additional scientific framework spelled out by the princ-

principle of judgment in order to establish the objectivity of science or, in Kant's day, of Newtonian physics; the categorial scheme of the CPR is insufficient for providing a justification (the ground for support) of Newtonian physics. And this provides us with a direct link between Kant's theory or philosophy of science and his attempt to show that, if matter is made out of, or, constituted by, the forces of repulsion and attraction, then, these laws (Newton's) will be true of it. If this is true, then it looks like making good my claim that the 'objectivity' of the categorial concepts in CPR is established, or can be established, only in conjunction with the framework of science, which is just to say, that the claims of Leibnizian realism with respect to the grounds of objectivity are vindicated.

Kant maintains that in the course of scientific investigation we build up a system of laws in accordance with a logical system and that it is this logical framework of laws which lends intelligibility to the scientific enterprise. Let us take a look at Kant's logical system. Kant uses the model of a genus - species classification system to spell out the kind of logical system he has in mind whereby lower order empirical concepts are subsumed under higher order concepts (just as particulars are classified as belonging to some universal); (F.Intro; V); classes of species are then grouped into their appropriate genus and the classes of genera brought under higher

genera until the one highest genus is reached (in principle). Kant also says that we can proceed from universal to particular, thus reversing the procedure, and he regards the system of classification as a derivative from the traditional (Aristotelian) model according to which 'matter' is the genus and 'form' the specific difference, so that "the genus, logically regarded, is as it were the matter or crude substrate which nature works into particular species and subspecies through multiple determinations; thus one can say that nature specifies itself according to a certain principle (or the Idea of a system) ...

"(F. Intro; V). This is the logical structure of the system which is to make comprehensible the orderly and systematic investigation of nature; but when we map this logical structure onto the physical world we get quite clearly a stratification of the natural world into the corresponding logical divisions of subspecies - species - genera - genus, in such a way as to render the logical structure of the system an anticipation of the physical structure of the world it is allegedly about, and in a way that lends some plausibility to Kant's claim that 'nature specifies itself according to the Idea of a system'. Of course, once the mapping has been effected, we are left with a world consisting of natural kinds ultimately and ideally, traceable to one fundamental kind of thing. Only this conception of science can account for the multiplicity of kinds and the variety of explanatory forms.

Indeed, Kant says as much himself:

"The various appearances of one and the same substance show at first sight so great a diversity, that at the start we have to assume just as many different powers as there are different effects. For instance, in the human mind we have sensation, consciousness, imagination, memory, wit, power of discrimination, pleasure, desire, etc. Now there is a logical maxim which requires that we should reduce, so far as may be possible, this seeming diversity, by comparing these with one another and detecting their hidden identity. We have to enquire whether imagination combined with consciousness may not be the same thing as memory, wit, power of discrimination, and perhaps even identical with understanding and reason. Though logic is not capable of deciding whether a fundamental power actually exists, the idea of such a power is the problem involved in a systematic representation of the multiplicity of powers. The logical principle of reason calls upon us to bring about such a unity as completely as possible..."  
(A649 = B677)

It must be emphasized that this sketch of the structure of science represents for Kant what a possible and cognitively significant science must be like if it is to be science at all, for the logical structure is meant to be tailored to the demands of judgment and judgment (reason) is in the present context no less than the necessary adjunct to the understanding in the domain of science. Now, one of the powers referred to by Kant is the causality of substance (ibid; A648 = B676) the various manifestations of which create the impression that here we have as many powers as there are different manifestations; the goal of science in this case is to seek to discover one

causal power which is the source of the different but related manifestations, thereby establishing the identity of a basic or 'fundamental' causal power in terms of which explanatory empirical theories can then be formulated. The nearer our approach to reducing the multiplicity of powers to the 'absolutely fundamental power' the more explanatorily powerful will be our empirical theories, that is to say, the search for and discovery of, basic entities is essential to scientific advance. Furthermore, Kant specifies three 'maxims' or "aphorisms of metaphysical wisdom" (CJ, Intro; V) as aids to the investigation of nature, all three of which are inherited from traditional metaphysics. They are the law of parsimony, the law of continuity in nature and in natural forms, and the principle that principles are not to be unnecessarily multiplied, and that Kant considers such maxims to be regulative in the construction of genus - species systems is clear from a number of passages in CPR (A652 = B680; A656 = B684). The status of these metaphysical principles and the principle of judgment as necessary aids in the construction of a system of empirical laws for understanding nature is underlined by Kant in his repeated claim that such principles are not psychological in origin nor in any way derived from experience. It is not a psychological necessity that drives us towards systemization with respect to natural forms but a necessity arising, Kant thinks, out of the need to guarantee the rationality of science.

As I have said, the logical structure of the system of laws is meant to reflect the physical structure of the world and this implies that as the logical structure is, as it were, filled out by the continual discovery of empirical theories, our knowledge of the structure of the world grows accordingly. And if we take seriously the notion of the logical system as a mapping of the structure of the physical universe, Kant's conception of the systematic unity of nature amounts to an unfinished picture of what a genuine science of nature must be like if it is to be capable of capturing, at least in principle, the structure of the world and doing it in such a way so as to make the science comprehensible to us. The logic of this system of Kant's is generated by the genus - species classification system which is of interest here if only because it demonstrates that Kant must have understood such a classification to have a legitimate use in the understanding of natural forms, i.e. it served to measure the actual division of nature into natural kinds from the lowest subspecies to the highest genus. All the ingredients are present for the construction of a physical system based on the explanatory equivalent of first principles or, the ontological equivalent of the source of the world order - the highest genus which is, when cashed out in real terms, the positing of some fundamental entity. In brief, it is beginning to look as if Kant's conception of the structure of scientific activity and science itself presupposes the

have to be merely hypothetical knowledge for Kant as it

truth of the basic claims that one would expect in a definition of the Leibnizian model for science, according to which, all knowledge including science (which incidentally Leibniz repeatedly claimed could not be replaced by theological - metaphysical truths) is essentially teleological and oriented towards knowledge of the fundamental structure of the universe, a structure which ideally could be revealed by the discovery of fundamental entities. It is salutary to reflect in this connection that as bizarre as Leibniz's original conception of the monadology appears to us, Leibniz had no doubt that it was logically required to explain the phenomenal world in a way that kept intact the world-view (the scientific world-view) based on a few metaphysical principles. Just as, according to Leibnizian realism, a full comprehension of the structure of the universe could only be based on a knowledge of the fundamental stuff the universe was composed of and thus an investigative approach to the natural world which embodied this as an ideal, Kant's conception of system is a model of scientific progress without which the comprehension of the vast body of empirical knowledge we have accumulated would be impossible; thus, the necessity for the systematic 'unity' of empirical knowledge, the necessity, that is, for each member of the system to be related by rules like the principle of parsimony, to some other member and through such interrelationships to unite into a totality. Knowledge of the totality, if attained (it would have to be merely hypothetical knowledge for Kant as it

is knowledge of the unconditioned), represents a comprehensive understanding of the world-order. In light of this, Kant's conception of empirical truth is really quite modern, anticipating as it seems to do, the inadequacy of the empiricist model of truth as the simple truth or falsity of empirical theories. The real criterion of truth is not whether a given theory corresponds with some state of affairs in the world, but how a given theory fits with the system of empirical theories as it is at the time; the 'fit' is simply a measure of the theory's expression of nature's stratification or multiplicity of natural forms so that, if the theory fits, what has been discovered is another manifestation of a more basic power. So also with empirical laws which have each their own place in the hierarchy of laws ranging over such and such a kind of entity. Empirical truth is thus to be seen as a function of the systemizability of empirical theories and empirical laws because such a hierarchial ordering is expressive of the real stratification of the natural world and the multiplicity of powers ideally reducible to the one basic power. Now I am aware that Kant would not agree that we are entitled to make any empirical claims with respect to the actual structure of the physical world; but this is irrelevant to my argument which is supposed to be showing that Kant assumes (and rightly) that nature must be divided into natural kinds according to the specification of the logical structure of the unity of system. Kant

argues towards the justification of his theory of system from the basic assumption that the natural world contains the 'specifications within it'; there are a number of passages which bring this out very clearly, suffice it to give the following from (F. Intro; V):

"The principle of reflection on any given natural object is that for all things in nature empirical concepts can be found; in other words, that one can always presuppose in the creations of nature a form which is possible under universal laws accessible to our knowledge. For were we not entitled to assume this, and were not to base our treatment of empirical representations on this principle, all reflection would be carried on at random and blindly, and as a result with no sound expectation of its agreement with nature."

2. My basic contention is that Kant's principle of judgment amounts to a specification of the structure and aims of science and that Kant's chosen mechanism in terms of which science can accomplish this task (essentially, of completing itself) is a conception of science as a system of laws and theories which is alleged to represent in advance the actual physical structure of the world. The kind of world which is prefigured in Kant's system is not the world of transcendental idealism but the world structured in accordance with the fundamental claims of Leibnizian realism or something resembling it in kind, i.e. a world the ontology of which can support a diversity of entities and within which complete knowledge is ideally a

knowledge of independently existing fundamental entities. As is becoming clear with respect to Kant's theory of science, the proper goal of scientific theorizing is the pursuit of just such a fundamental entity which, as we shall see presently, is characterized as the unconditioned. Throughout the sections of the texts I am dealing with here, Kant is emphasizing both the normative and teleological nature of scientific activity. The principle of judgment is, Kant says, a principle about how we ought to judge nature ("according to what rule our powers of judgment actually discharge their functions, and how we judge, but how we ought to judge; and we cannot get this logical objective necessity where the principles are merely empirical." CJ, Intro; V) which is just to say that the principle of judgment is meant to guide us in the construction of theories but not to effect the content of scientific theories themselves. Again at (F. Intro; II) we find that the principle of judgment "offers a principle for progression in accordance with empirical laws through which the investigation of nature is possible." By analogy with the understanding in accordance with the transcendental laws of which the objects of experience in general form a totality (=system), "in precisely the same way experience as well must ideally form a system of potential empirical knowledge according to universal as well as particular laws, insofar as this is objectively possible, at least in principle." (F. Intro; IV; emphasis mine) Science must, in

other words, strive to explain the structure of the world even if this proves to be unattainable, and Kant's logical picture of how science is to proceed requires that only the discovery of the one fundamental power or kind of entity which is the ontological ground of the existing world-order could count as the final aim of science. I shall argue in the next section on the unconditioned that this is because, as Kant's formulation of the Ideas of Reason will show, Kant really thinks that the ground of the world-order does lie in the unconditioned but the unconditioned is of necessity inaccessible so there is no point in postulating metaphysical theories with respect to it as the unconditioned ground. And of course Kant always thought of the unconditioned as necessarily super-sensible and never conceived of the possibility of the unconditioned being postulated as entering into causal relations with the conditioned - the unconditioned condition.

In arguing that systemizability is the sole 'empirical criterion of truth' Kant is arguing against the view that truth in science is a matter of simply determining the truth or falsity of individual theories, for on this account, science would be none the worse if it turned out that our empirical theories, even if true, were to prove resistant to our attempts at ordering them into a system; but the point behind the principle of judgment is that the rationality of the scientific enterprise depends

on this systemizability just because science is teleological. Without a knowledge of whether particular theories fit the system we would have no basis for criticizing them and thus, once again, no basis for determining their empirical truth according to the accepted principles of rationality. However, it is important to note that the source of Kant's rationality criterion - system - is judgment and judgment, Kant points out, is an "heautonomy", i.e. it prescribes laws to itself which is just to say that the principle of judgement is not empirical. This surely shows that the account of the possibility of a genuine nature provided by Kant is a metaphysical one (regardless of what Kant thought it was) and thus confirms my point that metaphysics does have a legitimate role to play in the acquisition of knowledge with respect to the structure of the world, a point I am arguing takes us back to a Leibnizian ontology of the world. I am taking Kant's suggestion that through science we must formulate normative principles on how nature ought to be judged as a suggestion that the proper function of metaphysical theories is to guide the construction of a full blown ontology. It has become almost a truism to say that our investigations into nature yield fruitful results only when we approach nature armed with an untested theory or cluster of theories, much in the way that we require concepts to make sense of experience. In the case of an ontology rooted in the basic stuff of the world we require

a metaphysics with which to sort out the multiplicity of phenomena and determine how the various kinds (e.g. organisms, persons, micro-entities) fit together. In order to accomplish this task we require theories with which to guide and interpret what we do even though the most we can establish (philosophically) are structural truths with respect to ontological kinds and the ontological hierarchy into which these kinds are ordered. As I said earlier in this essay, Kant's categories and principles of the understanding as well as the ideas of reason, can be construed as providing just such an ontological picture of the structure of the world. I shall not argue for this in any detail as it is a subject in itself but will present an account in the final chapter of what such a picture would be like.

Kant's transcendental idealism, as discussed in the first part of this essay, manages to be an 'empirical realism' at the same time, which means that despite the ultimate idealism of the form of the world, the world of everyday experience is real, just as we experience it. This is the heart of the epistemological doctrine of transcendental idealism: by allowing that the only world which could be a world for us is that which conforms to the categorial framework of CPR (because nothing could be experienced outside this framework) Kant effects the conflation of the world as experience or categorially conditioned with the world simpliciter. The consequence

in terms of epistemology is that we are no longer entitled to distinguish between the world as experienced and the world, at least not in a way which would be comprehensible to beings with our cognitive constitution. The world as experienced is the world of ordinary physical things and events, thereby keeping our faith in the empirically real nature of the world intact. By arguing that the form of the world viewed from the perspective of everyday experience is that legislated by the categories (thus holding with transcendental necessity) Kant makes good his contention that this is the only world for us; but with respect to the world as it is systematically unified by the mechanism of judgment, i.e. with respect to the complexity of its content and diversity of kind, Kant has to admit that here the best we can do is to suppose that the world conformed to our cognitive capacities, for judgment legislates laws for its own use, not for nature. Thus while we can be said to determine, through transcendental necessity, the form of the world of experience, the natural world cannot be so determined; instead, Kant relies on a kind of anthropomorphism with respect to the specification of the detailed structure of nature, viz. "nature specifies itself" (F. Intro; V). We are to suppose that nature or some personified form of nature (god) is the source of the natural order within the world and must suppose this for the sake of salvaging the rationality of scientific activity. As Kant makes clear, the work of

judgment in this respect is "art" for while judgment orders empirical laws into an organized whole, it is simply making explicit the form by which nature makes itself comprehensible: "Since this kind of classification is not ordinary experiential knowledge, but is rather an artistic knowledge, insofar as nature is thought in such a way that it can be rendered specific by this kind of principle, it is regarded as art." (ibid; V) Of course, if judgment works artistically then the systematic order brought about in our conception of nature can be regarded as purposive, and hence the judgment contains "a transcendental principle of the finality of nature" (ibid; VI). We can achieve objective knowledge with respect to the detail of nature only if we assume that nature or a surrogate of nature ordered the detail into a systematic unity comprehensible to us, just as we can have objective knowledge of objects in general because the understanding is the source of the principles whereby the 'unity of experience' is effected. Kant's maxim, "For we have complete insight only into what we can make and accomplish according to our conceptions" (CJ; A68) holds sway with respect to both our knowledge of experience in general and, it would appear, the detailed knowledge of nature. Kant's 'empirical realism' when seen in this context (its original context of transcendental idealism) is a realism which must have the idealist-sounding proviso - that the understanding or judgment effects the unity of experience or system - attached to it if it is

to make sense at all. However, that nature be suited to our cognitive faculties or that nature be systemizable - the necessary presupposition for the rationality of science - does not require that we posit God, Nature or some surrogate thereof who or which, actually organizes our empirical laws into a hierarchy, or otherwise "fitting nature for an empirical experience". It is the employment of a classification system, in this case, the species - genus model, which allows for the possibility that nature might be suited to our cognitive faculties because, as I have indicated, such a formal logical account of the division of nature into kinds presupposes (at least in principle) that nature is in fact divisible as anticipated by the metaphysical principles of differentiation. That some such classification of nature in terms presupposing the division of nature into kinds, is in Kant's mind, is particularly evident from the following:

"Now it is clear that the nature of the reflective judgment is such that it cannot undertake to classify the whole of nature by its empirical differentiation unless it assumes that nature itself specifies its transcendental laws by some principle. This principle can be none other than that of conformity to the power of judgment itself, finding in the infinite multiplicity of things subject to possible empirical laws enough kinship to bring them under empirical concepts (classes) and these under more universal laws (higher genera), and thus to achieve an empirical system of nature."  
(F. Intro; V)

The principles (such as judgment) guiding our investigations into nature are neither empirical nor psychological; they specify the kinds of objects, the systematic ordering of the 'multiplicity (of kinds) of things' so that a detailed knowledge of them is possible through a system of empirical laws and theories; this anticipation of the order of nature amounts to a sketch of a possible ontology in terms of the structural characteristics of the concept of an object. Thus Kant's theory of system is completing the task begun by the principles of the understanding according to which the features possessed by a possible object of experience are specified; however, that there exists objects which could or do possess such features cannot be demonstrated by a a priori means just as, with respect to the classification of nature according to Kant's theory of system, judgment cannot demonstrate that there exists the natural kinds specified by the genus - species system. It is one thing to say that such and such a concept or general feature must be presupposed for the possibility of experience or knowledge and quite another to suppose that a demonstration of the necessity for presupposing a concept's objective validity or a feature's possession by an object, implies the existence of the thing in question. This gap between what the principles (metaphysical) of Kant's theory of system and the principles of the understanding tell us nature in its particularity and nature in general must be like, and, how experience

and nature actually turn out, can only be filled by empirical knowledge of things and their relations. Thus, I am arguing that Kant's epistemological reading of the categories and the principles of the understanding ought to be revised so as to provide a sketch or detailed guide for the construction of a possible ontology. Kant's theory of system as presented thus far and when aligned with the conception of the ideas of reason, provides the rudiments for such a possible ontology, one that proceeds from the conditioned to the unconditioned, from the conditioned objects of knowledge to the unconditioned source of the world-order. Such an ontology can support a science of nature because it allows for the possibility that a complete science of nature can be achieved, at least in principle, which seems to be the idea behind Kant's conception of system as the principle of rationality or intelligibility of science. Of course this conception of ontology presupposes the plausibility of metaphysical or scientific realism, thus my defense of the metaphysics of Leibnizian realism.

3. In what follows I shall contend that Kant's theory of science prepares the way for acceptance of the unconditioned as ontologically ultimate, in part because science, on Kant's interpretation of it, presupposes the postulation of things in themselves for its intelligibility. In pursuing this line of argument I shall be following the

direction originally suggested by P. Krausser in a significant article on the relation between Kant's theory of scientific inquiry and things in themselves.<sup>2</sup> Finally, I bring this chapter to a close, appropriately, by arguing that Kant's attempt in the 'Second Antinomy' to show that the unconditioned is not to be met with in experience (because, as we have already seen, matter can only be appearance for us) can hardly be deemed a success, and therefore, we are at least tentatively licensed to proceed with an argument with respect to the unconditioned as the ontological ground of the world-order, in the final chapter.

According to Kant's theory of the world as a world of appearances and on the account provided by Kant's theoretical programme in CPR in general, 'nature' is just what is experienced as nature so that 'nature' is, insofar as it has any cognitive significance for us, 'experienced nature'. More specifically, experienced nature is constituted by the categories, the pure concepts of the understanding which when schematized assume the character of rules or principles allowing for the objective employment of the categories in the realm of the objects of possible experience. It is the principles of the understanding which guarantee that experienced nature will be a system of law-abiding objects of possible experience and it is the principles, as the necessary rules conditioning the possibility of any experience at all, which allow for the formulation of empirical laws of nature and empirical hypotheses pertaining to some particular detail of nature:

"The laws of nature, indeed, one and all, without exception, stand under higher principles of understanding. They simply apply the latter to special cases (in the field) of appearance." (A159 = B198) However, as the graph drawn up by Krausser to depict Kant's theory of the structure of empirical scientific inquiry shows,<sup>3</sup> and as Kant's own words support, the above account of experienced nature is insufficient. Quite simply, if experienced nature were entirely the result of the principles of reason - comprising the principles of the understanding, schematism and the categories - then, "reason would not have to learn anything from nature, and experienced nature could not contradict or disappoint logically expected consequences of laws and hypotheses thought up according to the principles of reason."<sup>4</sup> But, as we have already seen and as the following passage from CPR show, Kant insists that science, in order to progress, must be able to test laws and theories to discover if they are indeed a part of the 'system' of our knowledge of nature. In the 'Preface' to the second edition of CPR, Kant states: "Reason, holding in one hand its principles, according to which along concordant appearances can be admitted as equivalent to laws, and in the other hand the experiment which it has devised in conformity with these principles, must approach nature in order to be taught by it." (Bxiii) In connection with the legitimacy of formulating hypotheses Kant is no less clear that hypotheses must either be based on 'physical grounds',

not 'hyperphysical', or, if a hypothesis is a priori, it is acceptable only if it actually succeeds in explaining a fact of nature (A773 = B801); "... and the wildest hypotheses, if only they are physical, are here more tolerable than a hyperphysical hypothesis, such as the appeal to a divine Author, assumed simply in order that we may have an explanation." (A773 = B801)

Now reason can be taught by nature only if nature is or represents, an independent source of information, i.e. whatever 'nature' is, it must be more than what is 'constituted' by reason; otherwise, the possibility of a 'knowledge of nature' would be a misomer and all justification for the use of experience and observation with respect to nature would be absent. Graphically, if what goes into and what comes out of the block 'nature' is limited to the various phases of reason's goal-oriented, search-for-system, enterprise, from the initial questions 'put' to nature due to a particular puzzle or problem, through to the formulation of empirical laws by means of modus tollens, then, the search for an empirical knowledge of nature comes to no more than a process by which reason rediscovers, as it were, what it has already contributed. Hence, we must posit a source of information about nature which is completely and genuinely unconnected with 'experienced nature' as such, and which reason can be said to, in a cognitively significant sense, work into a systematic unity. It follows that such an independent input

must be the ontological equivalent of what Kant would call things in themselves; this implies no conclusions with respect to our knowledge of things in themselves, only that such an independent source of material must, a fortiori, be unknown (without making nonsense of the claim that it is independent). Kant's philosophy of science in general and his theory of system in particular presuppose the reality of things in themselves even though the latter remain unknown. If Kant's conception of scientific progress requires the postulation of some aspect of nature as the thing in itself, without which there would be no way of discerning if and how reason's planned system of empirical laws and theories failed in light of unexpected empirical (testable) consequences, then, a second important implication can be got as well from the basic structure of Kant's plan. Consider: It is a familiar point about Kant's theoretical programme that the principles of the understanding are necessary principles for the possibility of experience in general but insufficient to account for the order within nature itself, i.e. the systematic unity of particular experiences. Only specific empirical laws derived from experience and applicable to a certain range of natural phenomena can serve to explain the detail of the natural world. If our formulated empirical laws turn out unsatisfactory in that they fail to account for the range of phenomena in some way (e.g. new relevant information derived from experimentation and

further observation of experience), then, according to the basic plan prescribed by reason for science, viz. that the systematic unity of nature in its detail is the very basis for intelligibility in science and must therefore be preserved above all else, the unsatisfactory empirical laws must be withdrawn from the system of empirical laws and replaced by yet more laws which likewise are retained on the conditional basis that they explain the range of natural phenomena they allegedly cover. But if nature, or some particular aspect of nature, is to prove resistant to our even hypothetical empirical laws, it must be the case that not only is there some independent material which forms (partially) nature as we experience it, that independent material must possess at least a minimal order of its own, independent of the order 'imposed' by reason through empirical laws; if this is not assumed, then it would remain a complete mystery that a totally unordered, unstructured independent material should prove resistant to our empirical laws. Not only, it seems, does Kant's philosophy of science presuppose a reality which is the source of appearances, it must, as well, be an already structured and ordered reality. That Kant thought there must be some independent input to the overall learning situation, over and above that provided by reason, is certain; for example, the following from the 'Transcendental Deduction' (B): "But in the above proof there is one feature from which I could not abstract, the feature,

namely, that the manifold to be intuited must be given prior to the synthesis of understanding, and independently of it. How this takes place, remains here undetermined." And remains, we might add, for Kant, everywhere undetermined for its determination would imply that the realm of things in themselves could be assigned a function in the overall learning situation. And we know that for Kant this is impossible.

Unless we assume that nature's contribution to empirical knowledge was in some way already structured, we would have to admit that progress in science could not occur, or, at best, any progress would be incomprehensible to us: "For just as appearances do not exist in themselves but only relatively to the subject in which, so far as it has senses, they inhere, so the laws do not exist in the appearances but only relatively to this same being, so far as it has understanding. Things in themselves would necessarily, apart from any understanding that knows them, conform to laws of their own." (B164 - emphasis mine)

There would seem to be a lingering ontological thesis with respect to things in themselves, explicitly recognized by Kant in this passage, insofar as some such thesis is required in order to give due weight to the distinction between our empirical laws and the law-like structure of things in themselves. Without an ontological construal of things in themselves in this context, we would have no grounds for claiming that our scientific theories are

applicable to nature (i.e. that our empirical theories are objective). Kant acknowledges that nature must have some form of law-like structure of its own but argues that such a structure can have no significance for us since the only law-like structure we can understand is that which fits the prescription for objects of experience and their interaction issued by the understanding. But not only must we acknowledge that nature must have a law-like structure of its own, we must also recognize that things in themselves have such a structure and their having such a structure is essential for the progress of science and the growth of empirical knowledge. Kant comes closest to actually stating that the empirical association of representations in the reproductive imagination presupposes the associability of appearances themselves at (A100); after pointing out that it is a merely empirical law of the reproductive imagination that representations are associated with each other, Kant goes on to state: "But this law of reproduction presupposes that appearances are themselves actually subject to such a rule, and that in the manifold of these representations a co-existence or sequence takes place in conformity with certain rules. Otherwise our empirical imagination would never find opportunity for exercise appropriate to its powers....".

In order to accept that appearances are themselves associable (in contrast to their merely being reproduced

as associable representations in the imagination) it is necessary that some law-like structure of the postulated things in themselves be assumed; if this is correct then the empirical laws we do formulate are no more than an expression of our attempts to understand the law-like structure of things in themselves - a continuous series of attempts to grasp that structure in the only way we know how, viz. a hit and miss strategy within the wider framework of systematic progress and growth with respect to nature. And this systematic growth is possible only if we take seriously the claim that things in themselves have a structure of their own, i.e. reality has some kind of ordered structure which is presupposed by the representational character of the structure of appearances.

What emerges from this discussion is a conclusion I have touched upon previously but which could become fully evident only in the context of Kant's theory of science. Krausser gives partial expression to this important point towards the end of his article: "Kant's whole Critique qua philosophy of science and experience turns on the point that the a priori principles or forms of reason are necessary but not sufficient conditions of possible experience and experimental science."<sup>5</sup> As indicated, I am taking this as a measure of the range of the validity of the categories; the categories provide specifications of the concept of an object in general at the most general level and these specifications are extended

and filled in at the level of empirical knowledge of nature, the level at which our empirical laws are operative. Thus Kant's contention that empirical laws must accord with the general requirements of the categories: "Certainly, empirical laws, as such, can never derive their origin from pure understanding ... But all empirical laws are only special determinations of the pure laws of understanding, under which, and according to the norm of which, they first become possible." (A127 - A128)<sup>6</sup> Kant even goes so far as to suggest that the empirical laws of nature when regarded as specific determinations of the principles of understanding, express necessary (A159 = B198); the formulation of empirical laws can be seen to be an endeavour by which the validity of the categories can be demonstrated - investigating nature with a purpose to showing that the categories are indeed vindicated there. Thus, the categories initiate the construction of a provisional sketch of a complete ontology by providing the specifications for the concept of an object in general; this in principle complete ontology is detailed by empirical science, the proper workings of which are guaranteed by reason in making its aims (system) the aims of the activity of scientific theorizing - in the way we have just seen.

4. Kant says repeatedly that the proper task of reason is to render the diverse empirical activities of the understanding into a systematic unity and, in order to have any

hope of accomplishing this task, we must posit an 'analogon' of a schema of sensibility for the complete systematic unity of the understanding (A665 = B693). Kant thus comes to employ a sustained analogy to the schema of understanding for reason: "This analogon is the idea of the maximum in the division and unification of the knowledge of the understanding under one principle." (ibid) To arrive at the idea of a maximum in relation to the understanding entails that the normal restrictions under which the understanding functions be left aside, and as we would expect, such a suspension of the usual restrictive conditions under which the understanding operates, indicates that the use of the idea of unity with respect to the understanding is entirely methodological, i.e. does not yield objective knowledge (ibid). The problem however, is that if the concepts of the understanding are being applied to the 'schema of reason' in order that they might achieve systematic unity in respect of their empirical use, then it is not clear how reason is supposed to bring about such unity when its ideas do not possess objective validity. Indeed it would seem that an objective interpretation of the regulative principle of the idea of unity with respect to the understanding is essential because nature, according to Kant, can be legitimately thought only in accordance with the law-like a priori structure of the understanding, and reason is the means through which this law-like structure is unified in its special determinations

at the empirical level. To deny objectivity to the idea of unity amounts to a denial of the possibility of a unified law-like structure for nature, or, at least, a law-like structure that we could ever know. At (A646 = B674) Kant states that reason's drive toward further and further systemization is based on the evidently metaphysical principle, "that of the form of a whole of knowledge - a whole which is prior to the determinate knowledge of the parts and which contains the conditions that determine a priori for every part its position and relation to the other parts", with the suggestion that this idea in turn generates the idea of a law-like unity of the world. Kant's unambiguous recognition that a purely logical or methodological principle of unity is inadequate to ensure a unity amongst our empirical laws and theories without some commitment to the actual constitution of nature itself, comes in this passage at (A651 = B679):

"It is, indeed, difficult to understand how there can be a logical principle by which reason prescribes the unity of rules, unless we also presuppose a transcendental principle whereby such a systematic unity is a priori assumed to be necessarily inherent in the objects. For with what right can reason, in its logical employment, call upon us to treat the multiplicity of powers exhibited in nature as imply a disguised unity, and to derive this unity, so far as may be possible, from a fundamental power - how can reason do this, if it be free to admit as likewise possible that all powers may be heterogenous, and that such systematic unity of derivation may not be in conformity with nature?"

We can finally justify our confidence that nature will turn out as our investigation and research presupposes it to be by viewing nature from the combined perspective of the understanding and the unity of reason, i.e. from the transcendental perspective. But is this sufficient to justify talking "the systematic unity of nature as objectively valid and necessary"? (ibid); especially when we consider that Kant, on the one hand, says that regulative principles are not just methodological in character ("Hence these principles carry their recommendation directly in themselves, and not merely as methodological devices." (A661 = B689), and on the other hand, that the "systematic unity (as a mere idea) is, however, only a projected unity, to be regarded not as given in itself, but as a problem only." (A647 = B675) This ambiguity in Kant's position is not surprising for there is a tension in the account Kant has provided of the necessity of the systematic unity of nature. We have seen that Kant wants to place our empirical theories into a system in accordance with a specific arrangement, i.e. a hierarchy, such that lower order principles can be derived from higher order principles, etc. But the necessity which the members of the system have on this account, is simply derived from their place in the logical system so that the most they can be said to possess is epistemic or logical necessity. Yet there is another aspect to this involving the notion of the unconditioned. The system of empirical nature is in principle, a complete

system whereby the highest principle - which must be the unconditioned - does not and logically could not, derive its necessity from any other principle more necessary than itself; in other words, the highest principle must be necessary in itself; furthermore, it is because the highest principle is necessary in itself that the subordinate principles are necessary in relation to one another. Necessity is derived from the postulation of the unconditioned as the source of the order of appearances. Notice that with respect to nature in its detail, or, with respect to the connections between natural forms, the transcendental unity of apperception cannot, so Kant thinks, serve as the source or ground. And this is consistent with my contention that the categories and the framework for the objects of experience in general provided by them, are necessary but not sufficient conditions of the possibility of experienced nature. Conceptual necessity cannot account for the kind of necessity binding together our system of empirical laws since such laws range over physical things; only a necessity appropriate in kind with the laws and things they range over can provide such an account, i.e. a necessity derived from the source of appearances - the unconditioned. Of course, the unconditioned, on Kant's epistemological programme, cannot enter explanatorily or otherwise, into the realm of appearances where alone real causal interaction between appearances is possible, thus obliging us to construe the 'ideas' of the unconditioned as purely

methodological. A complete knowledge of nature aided by the guidance of reason can therefore never be more than a 'projected' unity of knowledge and insofar as our knowledge of nature is a knowledge of appearances, the necessity of the parts of the systematic unity of knowledge, our theories and laws, is derived from the transcendental necessity with which we presuppose the objective validity of that systematic unity of nature, or, as Kant says, from the 'focus imaginarius' of the system (A644 = B672). But when Kant says that the ideas or principles of reason as regulative ideas carry their necessity in themselves he clearly does not think that transcendental necessity is sufficient to account for the necessity required for our physical laws in their systematic order; Kant has no option but to deny the possibility of providing such an account of necessity (although, as we saw, he does in fact have the beginnings of such an account) since to do otherwise would mean that the things over which our laws ranged were ultimately real (rather than ultimately ideal or transcendently ideal). So Kant occupies the middle ground, using the ideas of reason to form a conception of an in principle complete knowledge of nature thereby allowing for the possibility of progress in science, but characterizing the goal of completing such a system as unattainable, not because of empirical considerations, but because the unconditioned can only be hypothesized as ground, never known as such. What Kant didn't realize is that on his epistemo-

logically - tailored account of science, epistemic or conceptual necessity is insufficient to account for the systematic interconnection of the empirical laws of nature and that therefore, the possibility of an even in principle complete knowledge of nature, i.e. science, is at the very best, problematic. The general direction of Kant's argument is from the long-standing premise that the unconditioned cannot enter into relations with the conditioned to the parallel thesis with respect to empirical knowledge, that things in themselves, since they are incognizable, cannot be postulated as the source of appearances in accordance with structure of empirical inquiry (ideas of reason).

Kant gives an account of three ideas of reason each of which, I shall maintain, are supposed to be things in themselves serving as the unconditioned ground of the conditioned totalities (A334 = B391). They are: (1) the self as that which is subject but never predicate; (2) the world as a complete totality; (3) the source or cause of the series of appearances - God. (A323 = B379; A334 = B391) Kant, not one to miss an opportunity for making use of his architectonic skills, sets out to generate the three ideas, of pure concepts, of reason, by applying the form of syllogisms to the three forms of synthesis for the relational categories, viz. categorial synthesis to the self, hypothetical synthesis to the world as totality and the disjunctive synthesis to the source of the series of appearances - God. Kant's argument here is peculiar to say the

least, but one can clearly see what he is doing. In brief, Kant argues that the basis (logical or intuitive) for syllogistic inferences is the relation of conditioned to unconditioned (A322 = B378-B379) and by using the faculty of reason in one of its proper domains, that of drawing inferences, we can, by applying the unconditioned to the forms of synthesis for the relational categories, arrive at the ideas of reason.<sup>7</sup>

"They (ideas of reason - JD) follow the guiding thread of the categories... it can be shown how reason, simply by the synthetic employment of that very function of which it makes use in categorial syllogisms, is necessarily brought to the concept of the absolute unity of the thinking subject, How the logical procedure used in hypothetical syllogisms leads to the idea of the completely unconditioned in a series of given conditions, and finally how the mere form of the disjunctive syllogism must necessarily involve the highest concept of reason, that of a being of all beings ...." (A335 = B392)

The world as the absolute unity of the series of conditions of appearances is the world as an unconditioned totality or unconditioned substance; as such, the world is that which is a subject and never a predicate, and in terms of, or from the perspective of, science, this is equivalent to the world construed as a system forming a law-like totality. The absolute of the categorial synthesis is the Self, which, since it is unconditioned must also be an unconditioned substance. Indeed, it is only the Self which Kant describes as the 'subject which is itself never a predicate' (A323 = B379); but if we take the ontological rendering of

the concepts World and Self seriously, a rendering effect-  
:ed by bringing the relational categories under the uncon-  
:ditioned, then we are left with two substances, the World  
and the Self, or things and persons. The moral law deter-  
:mines the Self and the categories do likewise for the World,  
or things in the World; but if the only subject which is  
never a predicate is the Self (according to Kant) then  
there is really only one substance - the Self or thinking  
subject. However, if the ideas of reason are to be gener-  
:ated by applying the unconditioned to the forms of syn-  
:thesis for the relational categories, then the absolute  
of the categorial synthesis should correspond to substance  
as the permanent in appearances, i.e. the First Analogy,  
becoming, when brought under the unconditioned, the total-  
:ity of the world as substance. In fact, since the three  
relational categories correspond, in Kant's architectonic  
scheme, to the three analogies, the ideas of reason genera-  
:ated should correspond in turn to the three analogies. We  
then get: the absolute of the categorial synthesis as the  
totality of the world as substance; the hypothetical  
synthesis as the totality of causal sequences; the absolute  
of the disjunctive synthesis as the community of substances  
in mutual interaction. Kant's derivation of 'that being  
of all beings' from the disjunctive syllogism rather than  
the totality of substances in mutual interaction, is of  
particular interest when we recall what the disjunctive  
judgment is supposed to express. In the disjunctive judg-

ment, all the propositions mutually condition each other so that together they form the sum-total of the sphere of knowledge even though, taken separately, each excludes the other. Kant makes it clear that what the disjunctive judgment expresses is not the mutual exclusion of each proposition by the other but the totality of knowledge which all the propositions taken together determine:

"Finally, the disjunctive judgment contains a relation of two or more propositions to each other, a relation not, however, of logical sequence, but of logical opposition, in so far as the sphere of the one excludes the sphere of the other, and yet at the same time of community, in so far as the propositions taken together occupy the whole sphere of the knowledge in question. The disjunctive judgment expresses, therefore, a relation of the parts of the sphere of such knowledge, since the sphere of each part is a complement of the sphere of the others, yielding together the sum-total of the divided knowledge. Take, for instance, the judgment, 'The world exists either through blind chance, or through inner necessity, or through an external cause'. Each of these propositions occupies a part of the sphere of the possible knowledge concerning the existence of the world in general; all of them together occupy the whole sphere. To take the knowledge out of one of these spheres means placing it in one of the other spheres, and to place it in one sphere means taking it out of the others. There is, therefore, in a disjunctive judgment a certain community of the known constituents, such that they mutually exclude each other, and yet thereby determine in their totality the true knowledge." (A74 = B99)

When we consider the disjunctive judgment in its categorial form as the synthesis in mutual interaction with one another,

the mutual exclusion yet determination as a community is that between substances, such that, while substances mutually exclude each other by repelling each other in contact, they mutually determine each other in so far as their individual existences are maintained by this mutual interaction. Now Kant thinks that the unconditioned of the disjunctive synthesis is expressed not by the community of interacting substances but by God, from which it can be concluded that Kant must think the totality of interacting substances to be a conditioned totality. Since the totality is the complete series of conditioneds taken together, and epistemologically, all that can be known, the unconditioned condition of the totality cannot be known. The unconditioned forms no part of the totality and therefore is essentially unknowable. Once again, we meet with this lingering ontological construal of the unconditioned: the whole is really grounded but because the unconditioned ground can form no part of the whole and only that which is part of the whole - the conditioned parts of the whole - can be known, then, the unconditioned must be unknowable.

Each of the ideas of reason are supposed to be expressions of the conditioning grounds of the conditioned totalities, viz. things in themselves. But the self in itself, world in itself and God, are all unknowable; therefore, as Kant repeatedly implies, we can have no knowledge of the inner nature of reality. When this thesis with respect to the unknowability of things in themselves because

things in themselves are unconditioned, is transposed to the domain of science or any system of empirical knowledge or knowledge of the world in its detail, it leaves us with the semi-sceptical position that empirical knowledge of nature can never form a complete system, for completeness depends on knowledge of the unconditioned and such knowledge is impossible for us. The true structure of the world is forever beyond our grasp. We can try to discover the inner structure of things, indeed, this is the very purpose of the ideas of reason; but it is a vain task if what we hope for is knowledge of the whole or a truly determinate knowledge of the world order: "How, then, can anyone dispute their (ideas of reason - JD) objective reality? He who denies their possibility must do so with just as little knowledge (of this possibility) as we can have in affirming it. It is not, however, a sufficient ground for assuming anything, that there is no positive hindrance to our doing so; we are not justified in introducing thought-entities which transcend all our concepts, though without contradicting them, as being real and determinate objects, merely on the authority of a speculative reason that is bent upon completing the tasks which it has set itself....What we then think is a something of which, as it is in itself, we have no concept whatsoever, but which we none the less represent to ourselves as standing to the sum of appearances in a relation analogous to that in which appearances stand to one another." (A674 = B702)

What is necessary is that we think in some way, under some limited description, the unconditioned thematically expressed in the ideas of reason as things in themselves and that we do think the unconditioned is a necessary presupposition of any systematic knowledge whatever; indeed, the unconditioned is itself the requirement for an even possibly complete knowledge of nature and the structure of the world but because we are not, or, more appropriately, cannot, form a determinate (i.e. objectively valid a priori concept) idea of the unconditioned, we must adopt a semi-sceptical attitude towards its possibility, while recognizing that it is essential to systematic knowledge of nature. Thus the problematic center of the drive towards a complete knowledge of nature. In connection with the problem of providing some account of the source of the world of appearances (the ontological source of which Kant always construed as God) Kant has this to say: "If, in connection with a transcendental theology, (God as the absolute source of the world of appearances - JD) we ask, first, whether there is anything distinct from the world, which contains the ground of the order of the world and if its connection in accordance with universal laws, the answer is that there undoubtedly is. For the world is a sum of appearances; and there must therefore be some transcendental ground of the appearances, that is, a ground which is thinkable only by the pure understanding." (A696 = B724)

As I indicated earlier, we are once again forced to

the conclusion that Kant's refusal to accept an ontological construal of the unconditioned and thing in itself looks like having more to do with a failure to provide an epistemological justification of the grounding relation between the unconditioned and the conditioned, rather than anything about the unconditioned as the ground itself of the world order: and it is this failure which might account for Kant's formulation of a transcendental condition as the ground of the world order, a transcendental condition made accessible by being placed in the nature of knowing subjects. Kant's thesis about the limits of knowledge would seem, on this account, to have been precipitated by a separate and long-standing ontological thesis with respect to things in themselves; things in themselves are unconditioned and the unconditioned is the source of the world-order, only we can no longer say so. But it is Kant's theological and dogmatic-sounding interpretation of things in themselves which leads him into the crisis whereby ontology and epistemology are separated in this way. Once these theological overtones are dropped and substituted with an account of fundamental entities such that appearances or the world of physical objects are construed as the manifestation of the nature of fundamental entities of one kind or another, it is possible to construct an ontology based on the phenomenal-noumenal distinction. I try to indicate what this might look like in the next and final chapter.

We know that Kant tries to avoid the dogmatism of a Leibniz while escaping the scepticism of a Hume; this means trying to construct an ontology with a matching epistemology, such that we do not have to account for the existence of a world-order in terms of necessary entities. But in ID, we saw that Kant construed the Creator as supplying the kind of bond between things which would otherwise be provided by necessary existents. The point is that Kant realizes that without some necessary entities or principles there could be no necessary relations between things for the world would consist of entirely contingent existents. But if all relations between the substances in the world are contingent then there can be no rules or laws governing their interaction. We must provide some account of an order or structure in the world and if God is unacceptable because unhelpful in the long run, and the categories and principles can provide at best, structural truths with respect to the concept of an object in general, then, we must search for an explanation for the justified postulation of fundamental entities in the world. And this is just what the ideas of reason, even in their original unadulterated Kantian form, are designed to do. They specify the paths towards the unconditioned by extending the legitimacy of the categorial concepts into the realm of things in themselves - in a regulative way of course. The ideas of reason, like the principle of judgment, guide the understanding in the construction of a system of em-

empirical laws, a construction which would effectively vindicate the categories at the level of nature. The understanding can demonstrate that the categories are transcendently necessary (perhaps) but reason must show that they are even empirically required. The sustained parallel between the understanding and reason is unmistakable - the unity of a priori principles at the level of experience in general, the unity of empirical laws at the level of nature in its detail. In ID, Kant, not yet having developed his Critical position, argues that in order to have a representing of the whole we must posit some ground for the whole; he still believes this come the CPR stage only now he must try and defend the claim within the confines of his newly discovered epistemological doctrine. This he does by means of the ideas of reason or, the conception of reason and its relation to the understanding. What is crucial, even at the time of ID, is that some ground or source of the world-order be postulated as simply being, as this passage from ID shows: "So, a whole of substances is a whole of contingents, and the world, in its own essence, is composed of mere contingents. Moreover no necessary substance has a bond with the world except as cause with caused, and accordingly not as a part with its complements to the whole (since the bond of coparts is one of mutual dependence which dependence does not enter into a necessary entity). Therefore the cause of the world is an extramundane entity and so is not the soul of the

world nor is its presence in the world local but virtual." (No. 19; last emphasis mine) That it is present at all is all that need be assumed, whether in the context of providing an explanation for a specific principle of natural philosophy, such as the principle of continuity or in the context of more general philosophical truths, such as the principle of sufficient reason. We still must think the world as being somehow (even if indefensibly) connected with the unconditioned because all empirical knowledge, indeed, all knowledge not falling within the range of the categorial framework, is possible only if we make the search for this connection a part of our scientific investigations, viz. the goal of science.

In Ch. II I argued that there is an ontological structure to Kant's conception of reason and that this structure could not be eliminated. We now see that this ontological structure is presupposed by Kant's theory of science, a theory articulated under the guise of a description of the proper domain for the function of reason. Kant's theory of reason points to the unconditioned as the ground of the order of the world which becomes the unattainable goal of science thereby guaranteeing continuous progress. But Kant's reasons for thinking the unconditioned unattainable are unconvincing if only because he always conceived the unconditioned as essentially unknowable and therefore unable to enter into our explanatory theories with respect to the metaphysical structure of the world. We are thus entitled to push on with the attempt at specifying a

philosophical sketch of the unconditioned, and this means adopting some form of Leibnizian realism for, as we saw in the last chapter, it is Leibnizian realism which makes claims to the effect that the world of appearances is necessarily connected with and grounded in, unconditioned entities, and, as well, that such unconditioned entities need not be fully specified in order to be known as the ground, or source of appearances. The analysis of the unconditioned I shall present, as indicated, is in terms of the unconditioned parts of matter as argued for by Kant in his force theory of matter in MFNS. This follows naturally from what we have said for it will be recalled that Kant must provide some account of what is other than mind even at the level of transcendental idealism. Before setting out with this final chapter, it remains to argue that Kant's attempt in the 'Second Antinomy' to show that we can have no knowledge of, or experience (in any sense) of, matter as unconditioned, is unsuccessful. I have no knock-down argument to show that Kant's argument is false but I believe it is possible to demonstrate that the argument isn't strong enough to prove what Kant wants it to, i.e. the world (and therefore matter) is a world of appearances.

5. Kant's final objective in the 'Second Antinomy' that does seem to be to establish in experience the unconditioned, as matter, body or substance, cannot enter, but as has

been pointed out in some detail by W.H. Walsh, the Second Antinomy represents an indirect proof of transcendental idealism.<sup>8</sup> I shall take it that the Second Antinomy is an attempt to demonstrate that the matter of experience is mere appearance. In fact Kant's strategy in the Antinomy as a whole is to deny that the world is a world of things in themselves, indirectly, by arguing that the world can only be a world of appearances for us. In one of the many remarks which he makes to this effect, he says:

"It is therefore also false that the world (the sum of all appearances) is a whole existing in itself. From this it then follows that appearances in general are nothing outside our representations - which is just what is meant by their transcendental ideality.

This remark is of some importance. It enables us to see that the proofs given in the fourfold antinomy are not merely baseless deceptions. On the supposition that appearances, and the sensible world which comprehends them all, are things in themselves, these proofs are indeed well-grounded. The conflict which results from the propositions thus obtained shows, however, that there is a fallacy in this assumption, and so leads us to the discovery of the true constitution of things, as objects of the senses."

(A507 = B535)

The argument of the Second Antinomy is that from the assumptions (thesis and antithesis) that the world is composed of simples and that the world, in so far as it is matter or substance, is infinitely divisible, it follows that neither of these contentions could be proved true. The first thing I want to say about this argument is that, while it may follow from the assumption of both thesis and

antithesis that neither proposition can be shown to be true in terms of their a priori conceivability, it does not follow that neither can (in the future) be true as empirical theories. Thus, the most Kant can hope to establish is that both thesis and antithesis cannot be shown to be true on grounds of a priori conceivability. There is a second point which is important here because it determines my reading of the argument of the Second Antinomy as a whole. Kant's position with respect to the infinite divisibility of matter is that the infinite divisibility of space entails the infinite divisibility of matter and, therefore, the postulation of infinitely small substances as the centers of attractive and repulsive forces must be rejected as impossible (as such substances could not be found or discovered in space). (MFNS; 551-553) This however, is just the view of Leibniz with respect to space, matter and substance and it is the view that Kant himself comes to accept, i.e. matter is not composed of simples (monads or otherwise) because simples cannot possibly be the proper parts of matter. "In this way it remained open to the metaphysician to compound space of points and matter of simple parts .... Now, the composite of things in themselves must certainly consist of the simple; for the parts must here be given before all composition. But the composite in the appearance does not consist of the simple, because in the appearance, which can never be given otherwise than as composite (extended), the parts can be given only through division and thus not before the composite but only in it.

Therefore, it was not Leibniz's intention, as far as I comprehend, to explain space by the order of simple entities side by side, but rather to juxtapose this order as corresponding to space while yet belonging to a merely intelligible (for us unknown) world." (ibid; 508)<sup>9</sup> Now, accepting that Kant approves of this more or less Leibnizian view, including the thesis that bodies are aggregates of infinitely many nonsensible entities ('On A Discovery; 203), we can read the Second Antinomy, and the argument of the antithesis especially, as an indirect defense of the thesis that there are unconditioned simple and nonsensible entities, which cannot be discovered in space. This implies that the Second Antinomy is best understood as proffering a disguised ontological thesis, an interpretation not undefended in the literature.<sup>10</sup> This reading of the Second Antinomy in no way interferes with Kant's actual arguments in either the thesis or antithesis but represents an attempt to interpret the direction of the overall argument of the Second Antinomy. The thesis I understand to be a defense of the Newtonian position with respect to simples; matter is composed of inelastic atoms. The antithesis represents the Leibnizian position on simples, viz. composite things are infinitely decomposable and nowhere in the world (spatial) can there be found simple entities. According to Kant's procedure in the first two antinomies, the argument is that neither the Leibnizian nor Newtonian positions with respect to simples can be firmly

established and therefore neither position can be seriously entertained as the basis for cosmological views of the world. Structurally, this conclusion is meant to be a kind of support for transcendental idealism since in a world of appearances no simple entities can be found. But, at best, the argument might persuade us to simply wait upon experience and see if our physical investigations turned up new information regarding the structure of the simple entities of the world; the argument does not establish that either the Newtonian or Leibnizian position are absolutely false, if only because it would have to demonstrate something like the necessary impossibility of either position and that, we can agree, it does not even come close to doing. Kant's argument allows for the possibility that one or either of the positions might be empirically verified so that if atoms were postulated as the simple parts of matter - or, the simplest discovered at the time - then it would have to be acknowledged that there exist unconditioned simple entities in the world. Kant presents the opposing positions as intellectual and rational views once removed from empirical theory but this, surely, could never be sufficient to establish the truth or falsity of what after all, are physical theories pertaining to the basic stuff of the universe. Once aligned with a demonstration of the empirical impossibility of either position, the impossibility on the grounds of a priori conceivability would undoubtedly add weight to the overall argument, but

alone it is inadequate for the task assigned it. Of course, since Kant's presupposition throughout the antinomies is that the world is a world of appearances, the antinomy of simplicity cannot be resolved and from the fact that the antinomy is irresolvable we can infer that unconditioned simples of any description will never be discovered in experience. Thus Kant is in this sense arguing from entirely a priori grounds to the impossibility of a physical discovery; Kant would say, for example, if atoms were discovered at some point, that we must assume them to be infinitely divisible even if we cannot conceive this from the point of view of its empirical possibility. This is what Kant must demonstrate if he is to lend support to the ontological position that no unconditioned entities can be found in experience; if he fails to do this then we have at least prima facie plausibility for disregarding the thesis of transcendental idealism with respect to the matter or substance of experience.

The argument of the thesis can be condensed as follows: If we assume that composition can be removed from a body we are assuming there are simples. If it is impossible to remove all composition from a body, then the composite would not be made up of substances; composition, as applied to substances, is an accidental relation apart from which substances are self-subsisting. Since this contradicts the original supposition that composite substances are not made up of simple parts, we are left with

only the thesis, i.e. every composite substance is made up of simples. Kant succeeds in carrying through the reductio only by plugging in, at the middle of the argument, a definition of substances, viz. that they are self-subsistent, unconditioned beings, and of course this contradicts the original supposition. But if substances really are self-subsisting simple entities, then composition of substances (even if only an accidental relation) must be of simples and likewise all removal of composition will leave only simples. To inject this into the reductio as a definition is surely begging the question at issue. The argument on behalf of the thesis cannot be considered valid; in any case, construing the overall argument as I am - to show that no unconditional entities can be met in experience - makes the possible failure of the thesis argument of little consequence. For even if the thesis isn't false as an independent argument, it will still be confronted with the antithesis and exposed as no more than a fanciful illusion. By showing that the antithesis of the Second Antinomy is true, Kant can provide indirect support for the argument that there are no unconditioned entities to be met with in experience, for the antithesis purports to show that all parts of matter must be conditioned. The argument in the antithesis follows the reductio pattern as did the thesis argument; in brief, if the parts of things were themselves simples, then the parts could not be spatial because space is not made up of simple parts; anything non-spatial, is incognizable. Now, in the

'Observation' on the antithesis, Kant makes it quite clear that he thinks it follows from the argument of the antithesis that, granted the infinite indivisibility of matter, if someone (namely, the monadists - A439 - A440 = B467 - B468) wanted to maintain that matter was made of simples, these simples would be mathematical points as well as physical points conceived as "having the distinguishing characteristic of being able, as parts of space, to fill space through their mere aggregation." (ibid) This conclusion, Kant regards as quite unwarranted, indeed, absurd, especially in view of his doctrine that the world is a world of appearances; we thus see the rationale behind the conclusion representing the true position of Leibniz, viz. absolute simples cannot be parts of wholes (material). Hence, atomism must be false. Unfortunately for Kant, this argument is not without its flaws. Kant's argument, first of all, assumes that all extended things are composite, i.e. non-simple and his intuitive support for this assumption consists in the belief that, if a thing is extended, then it is conceivable that it be capable of further and further division; but we cannot grant the real possibility of further extension from its mere conceivability. Once again, Kant's mode of argument is insufficient to support the rather empirically-grounded conclusions he wants to get from them. Consider what might 'conceivably' occur if the attempt to divide an atom alleged to be extended but simple, was carried out. There are three well rehearsed

possibilities here; the atom might resist all attempts at splitting it and remain absolutely impenetrable; the atom might be annihilated; the atom may undergo a transformation, i.e. turn into pure energy. These are plausible if not very likely possibilities for they say no more than; the atom remains the same or is destroyed (entropy supports this possibility in so far as according to the laws of entropy the amount of energy in the universe is decreasing, i.e. not available in usable forms), or is changed. The second unacceptable aspect of this argument concerns Kant's dismissal of the possibility of unextended points being the center of what fills space; this is especially curious because Kant's position in MFNS does postulate attractive and repulsive forces as what fills space, only there, space is filled not by the repulsive force radiating from a point center but by a continuous field of repulsive (and attractive) forces: "...and it is clear that the hypothesis of a point filling a space by mere driving force and not by means of other likewise repulsive forces is completely impossible." (MFNS; 504) We shall be looking at MFNS in more detail in the next chapter, especially Kant's force theory of matter. Now, while Kant is no doubt correct in dismissing the idea of space being filled by the aggregation of mathematical or physical points as an absurdity, the idea of a field of attractive and repulsive forces constituting the substance of the world is not, in any obvious way, non-simple. While a force field just is the

continuousness of forces in space, points are still in space with either a repulsive or attractive capacity or power which is realized in the context of the field. Also, forces, even in MFNS, are not compounded out of anything else, and in this sense, can legitimately be described as simple. This cannot be discussed properly before the MFNS and its background have been introduced but I hope that it has been possible to show here that even if we assume the infinite divisibility of matter it is not clear that this necessarily entails that all parts of matter are conditioned, i.e. non-simple. Atomism may be false but that alone is not sufficient for Kant's overall argument in the Second Antinomy to go through since something else, some other kind of entity can be posited as that which fills space, entities like Kant's forces of attraction and repulsion. They fill space and there exists nothing from which forces are made - they are the fundamental 'stuff' of the world.

I conclude then, that Kant has not demonstrated that transcendental idealism with respect to the matter of appearance is true. This failure leaves open the possibility that an account of the source of appearances can be provided in terms of the unconditioned. What I have described as the main direction of Kant's argument in the 2nd Antinomy, viz. the ontological possibility of there being simple entities which cannot be found in space, has at least a prima facie plausibility in light of Kant's

doctrinal stance on issues epistemological and ontological. Something other than mind really is the source of appearances but we can no longer say that it is; hence, it must be pushed into the realm of the unconditioned - like all ontological problems - and the order of appearances made to rest on a transcendental condition. We have seen that transcendental idealism cannot support this sort of move because it cannot account for the constraints placed on knowledge by what is other than, or is derived from a source other than, knowing subjects. These constraints are the foundations of objectivity. In the final chapter I shall try to provide an initial outline of the kind of metaphysical theory, based on the unconditioned (Leibnizian realism), which might complement Kant's epistemological programme.

Chapter VI Realism: Matter and the Ontology of Forces

"Thus the whole discussion of essence, attributes, and so on, absolutely does not belong to metaphysics (where Baumgarten, along with several others, has put it) but only to logic . . . . the real essence (the nature) of any object, that is, the primary inner ground of all that necessarily belongs to a given thing, this is impossible for man to discover. For example, extension and impenetrability are the whole logical essence of the concept of matter, that is, they are all that is necessarily and primitively contained in my, and every man's concept of matter. But to recognize the real essence of matter, the primary, inner, sufficient ground of all that necessarily belongs to matter, this far exceeds the capacity of human powers. We cannot discover the essence of water, of earth, or the essence of any other empirical objects; even the real essence of space and time and the reason why the former has three dimensions, the latter only one, are unknowable." (Kant to Reinhold; May 12, 1789)<sup>1</sup>

1. We have seen that science, according to Kant's philosophy of science, is teleological, that is, science is a goal-oriented enterprise; as such, and for its possibility as such, science must presuppose the existence of things in themselves. It is the continuous striving after knowledge of things in themselves (the independent and unknown source of information in nature) which is the essential activity of science, and since according to Kant's epistemological programme, all knowledge is necessarily knowledge of appearances and appearances are phenomenal and conditioned while the real is noumenal and unconditioned, science is the continuous search for knowledge of what is unknown, that is, science has knowledge from the perspective of the unconditioned as its aim. In this final chapter, as

indicated, I try to complete - at least in outline - this argument, by suggesting that Kant's own conception of forces as the fundamental constituents of matter is a plausible philosophical candidate for the unconditioned. The unconditionally (i.e. Leibnizian) real are forces understood in terms of Kant's conception of intensive magnitudes; only the real has intensive magnitude and only the real as such has Being. As we shall see, intensive magnitudes cannot be classified as either primary or secondary properties; primary and secondary properties are not, or cannot be, categorized as, the real, if for no other reason than the real as that which alone possesses being is the ground of the manifest primary and secondary properties. Forces as the unconditioned can be described as monad-like in so far as forces are not in space and time (in Kant's sense of 'in' where something must be observable or constructible or picturable) while they condition everything that is in space and time. Forces do not however, share that feature of monads according to which substances do not enter into real causal relationship with each other; forces, as the 'parts' of matter are unconditioned but not in such a way as to make causal relations impossible. Nor, of course, are forces no more than the changing series of perceptions in each monad; on this idealist reading, monads are incapable of producing transeunt forces which can be said to actually cause changes in the states of entities existing outside the entities producing the force in question.

It is not crucial to my interpretation of forces as the fundamental stuff of the world that they be characterized as monads; it is simply an appropriate description of forces as a kind of entity in view of the unconditionally real status of monads in their original Leibnizian form. I shall return to this shortly.

I shall proceed with the argument as follows: (1) I begin with a brief discussion of the problem of matter from the atomist cosmology through to Descartes and concluding with Leibniz and Kant. Leibniz's theory of force is unacceptable as it stands only because it fails to explain, as Kant charges, real causal interaction amongst substances or entities. We thus adopt Kant's force theory of matter which, apart from the question of causal interaction, is Leibnizian in all other important respects. Thus my contention that we have in MFNS the postulation of the fundamental forces of attraction and repulsion which provide for a Leibnizian (realist) ontology. Kant thought that a realist interpretation of the physical world was the correct one, or so one must assume from the empirically real nature of physical objects which his epistemology countenanced and which his analysis of the concept of matter in MFNS demands; Kant's philosophical theory that the physical world was transcendentally (= ultimately) ideal restrained him from making strong claims with respect to the 'real' nature of fundamental forces constituting matter. Once, however, we have argued against the priority of trans-

:cendental idealism as an epistemological theory over the very different story which Kant's theory of science seems to tell, there is no reason for Kant not to admit that forces are the unconditioned-conditioners of the world order. Forces emanate from point centers of influence and point centers of influence are unconditioned in that there are no entities beneath point centers holding them up or sustaining them; point centers do not depend on any other entity for their being. In order to make themselves manifest however, there must exist other point centers which do condition them in so far as point centers must be prevented from dispersing themselves to infinity. It is difficult to describe this unconditioned-conditioned character of fundamental forces but it does help to think of forces in this respect analogously with the power of spontaneity as the ground of freedom and reason. (2) I shall present a defense of the interpretation of forces as intensive magnitudes; Kant's attempt to construct bodies from point centers of influence in the 'Metaphysical Foundations of Dynamics' represents, or, can be construed as representing, the further specification or detailing of, the real in perception being an intensive magnitude; this is of course, just as Kant himself suggests in the Anticipations of Perception of CPR. Since forces do not seem to be describable as primary or secondary properties, there would seem to be little else for them to be but intensive magnitudes. We can, as has been considered by some commentators, construe Kant's force theory of matter

as a remarkably advanced articulation of field theory. In fact, the picture of the physical world as a system of point centers of influence attracting and repelling one another and requiring the existence of surrounding point centers to prevent their dispersion to infinity is the beginnings of a field theory; however, the point centers within the field are ontologically distinct and unconditioned entities even though they depend on the field for their manifestation. It is not the task of this essay to address questions of detail such as this; nor am I competent to do so. The point is, and it is worth repeating, that I am not trying to address the empirical question as to whether forces in fact are the basic stuff of the universe but defend the possibility (and this is a philosophical question) that something like forces - that kind of entity - could count as the unconditioned, the fundamental stuff of the universe. In other words, it is the Leibnizian problem to the effect that experience must have foundations which are ultimate even if we can't discover these ultimates; Kant's answer to this is to say that it is precisely because we can't discover them that we can't postulate them in any but a provisional way. Both are philosophical responses, Kant's challenging the possibility Leibniz never even questioned. (3) Finally, throughout the discussion and argument I shall remark as to the characteristics of the crude sketch of the possible ontology based on the unconditioned as here conceived, for example, a theory of ontology based on unconditioned sources of the world order

must incorporate both a theory of reality which takes up the perspective of knowledge and a theory of reality from which the object (physical reality and laws pertaining to it) is viewed from the perspective of being, or, from the perspective of the object (ontically). This will be of necessity very brief as indeed, shall be this chapter generally, for it is essentially an attempt to sketch the kind of ontology required to complement the structural truths with respect to the world specified by Kant's categories, principles and ideas, an account which can be supplied not by transcendental idealism but Leibnizian realism. And this is as it should be for only science, which adopts the perspective of the unconditioned, can fill in the story begun by the categories, and Leibnizian realism, which is the philosophical framework for science, provides the kind of ontology required by science and in turn, possibly filled in or realized by science in its pursuit of the unconditioned.

The postulation of atoms as the material or stuff out of which physical things are composed represents a possible answer to the problem of explaining the basic constituents of matter; the substance of the physical world are atoms. Kant rejects atomism because simples cannot form a part of the world of appearances; true simples, as we have seen, would have to be ontologically independent entities and if they are ontologically independent, then there exists nothing to condition them, as it were, from below; this

amounts to recognizing things in themselves in the empirically real world and for Kant, things in themselves cannot enter into real causal connection with conditioned entities. It follows that atoms, as the simples of matter, cannot be postulated within the world as the basic constituents of the world. The world of appearances is a world which forms a totality of conditioned entities, that is, there exists nothing within the world of appearances which could serve as the ground of that world. It follows that all knowledge is knowledge of the conditioned, of appearances, and thus we arrive at one of the central claims of transcendental idealism. Notice, however, that this tenet of transcendental idealism arises naturally from Kant's views with respect to the ontological status of self-sustaining entities like simples. The problem of simples and matter is, for Kant, the problem of explaining how unconditioned entities could enter into relations with conditioned entities; because Kant saw no way that this could be explained without serious epistemological risk, atoms, monads and the like must be considered illegitimate, at least, such entities could not be construed as existing within the world.

The atomist world view has as its most distinguished proponent, Newton, to whom the most sophisticated form of atomism is ascribed: all material things are composed of basic corpuscles which are absolutely impenetrable. The best, or one of the best, statements of this view by Newton is found in 'Query 31' of the Opticks:

"All these things being consider'd, it seems probable to me, that God in the beginning formed Matter in solid, massy, hard, impenetrable, movable particles, of such Sizes and Figures, and with such other Properties, and in such Proportion to Space, as most conduced to the End for which he form'd them; and that these primitive Particles being Solids, are incomparably harder than any porous Bodies compounded of them; even so very hard, as never to wear or break in pieces; no ordinary Power being able to divide what God himself made one in the first Creation."<sup>2</sup>

As the basic or ultimate constituents of bodies, atoms or particles, were designed on the analogy of ordinary, physical, observable bodies so much so that the properties ascribed to macro-objects were likewise believed to be possessed by the atoms out of which they were composed.

Again, Newton provides the most articulate expression of the general beliefs and reasoning underlying the atomist world-view; the following passage is taken from the third

'Rule of Reasoning in Philosophy' at the beginning of

Bk. III of the Principia:

"We are certainly not to relinquish the evidence of experiments for the sake of dreams and vain fictions of our own devising; nor are we to recede from the analogy of Nature, which is wont to be simple, and always consonant to itself. We no other way know the extension of bodies than by our senses, nor do these reach it in all bodies; but because we perceive extension in all that are sensible, therefore we ascribe it universally to all others also. That abundance of bodies are hard, we learn by experience and because the hardness of the whole arises from the hardness of the parts, we therefore justly infer the hardness of the undivided particles not only of the bodies we feel but of all others.

That all bodies are impenetrable, we gather not from reason, but from sensation. The bodies which we handle we find impenetrable, and thence conclude impenetrability to be an universal property of all bodies whatsoever. That all bodies are movable, and endowed with certain powers (which we call inertia) of preserving in their motion, or in their rest, we only infer from the like properties observed in the bodies which we have seen. The extension, hardness, impenetrability, mobility, and inertia of the whole, result from the extension, hardness impenetrability, mobility, and inertia of the parts; and hence we conclude the least particles of all bodies to be also all extended, and hard and impenetrable, and moveable, and endowed with their proper inertia. And this is the foundation of all philosophy."<sup>3</sup>

This characterization of material bodies indicates that the essential power of bodies and by extension, of matter, is the power to remain in motion or at rest, i.e. the power of inactivity. Atomic particules move and are moved but they cannot move themselves because they do not possess an active force. For Newton, the vis inertiae of bodies is a merely passive principle by which bodies receive motion depending on the force impressing itself on them, and resist motion depending on the forces of resistance which they meet. Without an active principle, however, motion remains unexplained for the principle of inertia alone cannot account for the possibility of motion in the world. We require some other principle which could be responsible for putting bodies into motion and maintaining or conserving motion. Newton recognized the necessity of some such principle as this for he believed that the total amount of motion in the world would be dissipated unless

it was continuously renewed; that motion is lost was clear to Newton from the evidence of the apparent loss of motion in inelastic collisions.

Descartes can be classified as an atomist, at least in so far as his theory of matter takes shape, size and motion to be the basic properties of bodies. It is true that Descartes understands matter to be continuous because there cannot, for philosophical reasons, be any truly empty space, but to this it must be added that Descartes also thought matter was divided - into particles of increasing size in proportion to conditions of heat and light. The important point is not after all, whether Descartes was an atomist similar to Newton but that, as Buchdahl states, "his hypothetical scheme is still particularistic, and this helped considerably to reinforce the seventeenth - century fashion for corpuscularism."<sup>4</sup> Since shape, size and motion are the only clearly observable properties of bodies, Descartes comes to identify spatial extension with bodily substance so that where there is space there is body. This, coupled with the denial of the possibility of empty space means that the universe is in fact a plenum. Descartes' vortex theory of motion follows from this quite naturally for if the universe is a plenum any motion ascribed to a single particle must result in a circular motion of bodies moving together. The principle of inertia, as is well known, was stated by Descartes (before Newton) in the Principles of Philosophy (ii, 37, 39): "Every reality, in

so far as it is simple and undivided, always remains in the same condition so far as it can, and never changes except through external causes" and "Any given piece of matter considered by itself tends to go on moving, not in an oblique path, but only in straight lines." Thus, like Newton, Descartes is left with the problem of explaining how bodies come to be in motion and how the quantity of motion in the universe is preserved.

We come next to Leibniz who attacked both the Newtonian and the Cartesian conceptions of matter, argued against atomism in general and denied that extension could be the basic property of bodies. Because Leibniz does not identify matter with substance he can consistently regard extension as an attribute of bodies without regarding it as a primitive attribute of substance; extension is, in other words, not ontologically primitive because it is not an essential constituting attribute of substance:

"....I do not think that substance is constituted by extension alone, since the concept of extension is incomplete. Nor do I think that extension can be conceived in itself, but I consider it an analyzable and relative concept, for it can be resolved into plurality, continuity, and coexistence or the existence of parts at one and the same time. Plurality is also contained in number, and continuity also in time and motion; coexistence really applies to extension only. But it would appear from this that something must always be assumed which is continuous or diffused, such as the white in milk, the colour, ductility, and weight in gold, and resistance in matter. For by itself, continuity (for extension is nothing but simultaneous

continuity) no more constitutes substance than does multitude or number, where something is necessary to be numbered, repeated, and continued. So I believe that our thinking is completed and ended in the concept of force rather than that of extension. And we need seek no other concept of power or force than that it is the attribute from which change arises, and whose subject is substance itself." (L516)

The concept of extension cannot be the constituting concept of substance because it is an incomplete concept, i.e. something must be extended or, more accurately, there must be something which is extended implying that the somethings and extensions cannot be identical. For a Cartesian, however, this is not quite good enough for it could be argued that it is enough that extension is an essential attribute of bodies such that statements about extensions entail statements about bodies and statements about bodies entail statements about extensions. Leibniz of course does have a ready made rebuttal to this challenge: not only is extension an incomplete concept, it is also a relative concept, that is, extension is properly attributed to pluralities ('it can be resolved into plurality') of substances, e.g. coexistence and continuity. Following Leibniz's argument in the above passage, continuity is itself insufficient to constitute substance since there must be something which is continuous and this something must be presupposed. And these somethings are, for Leibniz, centers of force and activity, called variously, entelechies, monads, substances; the continuous activity of these substances existing together is what really constitutes an

extended thing. Leibniz's argument against the atomists amounts to a defense of the continuity of bodily substance. All parts of extended things must be likewise extended and the division of extended things must be continuable to infinity; to suppose otherwise, i.e. extended things are not divisible to infinity, implies that body lacks continuity and thereby extension. Thus Leibniz reasons to the conclusion that there can be no smallest extended thing. Leibniz also uses this argument to good effect against Descartes. Since extension is ontologically derivative, extended wholes, regardless of how small they may be, must be ideal. But it is not just extension which is ontologically derivative; both inertia (principle of inactivity) and the concept of motion are 'relative concepts', i.e. they are proper to bodies not substances. For Leibniz, a body's resistance to motion is explained by its impenetrability and its inertia as he makes clear in this letter to de Volder in 1699:

"Thus the resistance of matter contains two factors: impenetrability or antitypy, and resistance or inertia. And since these two factors are everywhere equal in a body or are proportional to its extension, it is in them that I locate the nature of the passive principle or of matter, even as I recognize, in the active force which exerts itself in various ways through motion, the primitive entelechy or in a word, something analogous to the soul, whose nature consists in a certain perpetual law of the same series of changes through which it runs unhindered. We cannot dispense with this active principle or ground of activity, for accidental or changing active forces and their motions are themselves certain modifications of some substantial thing, but forces and actions cannot be modifications of a merely passive thing such as matter."  
(L 517)

Before commenting on this and continuing our discussion of matter, it will be appropriate at this point to clarify my position with respect to Leibniz's scattered references to the active force as analogous to the soul. That Leibniz was not identifying the substantial activity of primitive entities with the perceptual changes in the soul, at least not in a literal way, can be seen in the guarded approach in the letters to de Volder with which Leibniz introduces and discusses the conception of substance he wishes to defend; Leibniz is aware to the possibility, indeed, the strong likelihood, of being misunderstood in this respect for he is himself unclear as to how to describe the kind of entity whose nature is constituted by active force. This unclarity leads to a sometimes excessive dependence on the use of analogy, analogy with examples taken from optics, the nature of the soul, and even biology. There is a wonderful passage from a letter to de Volder (1706) which captures Leibniz's sense of frustration: "... he still desired one thing - to know the reason for the union between the two (soul and body) which he held to differ from their agreement. I replied that this metaphysical 'union' - I know not what - which the School assumes in addition to their agreement is not a phenomenon and that there is no concept and therefore no knowledge of it. So neither could I think of a reason that might be given for it."

"I fear that the force which is thought to be in extension or mass, yet outside of the percipient beings and their perceptions, is of this nature. For there can be nothing real in nature except simple substances and

the aggregates resulting from them. But in the simple substances themselves we know nothing besides perceptions or the reasons for them. Whoever assumes more must give the marks by which the additional natures are to be verified and explained. I consider it demonstrated - as I have written several times, although I cannot yet order everything in such a way as to present the demonstration conveniently to the eyes of others....." (L539) And again in an earlier letter to de Volder (1699): "But est aliquid prodire tenus (an allusion to Horace: 'One can advance to a certain point, even though nothing further is possible' - JD): what is not yet ready to be defended by rigorous demonstrations will meanwhile recommend itself as a hypothesis ..." (L515) More often than not, the 'hypothetical' explanations Leibniz put forward were dressed in analogical reasoning to such an extent that what emerged was more a picture constructed from concrete and readily comprehensible images, of the nature of the sort of entity constituted by active force, than anything resembling a literal and direct explanation. I am not suggesting that we ought to accept this use of analogy as a substitute for reasoned argument in explanation - Leibniz himself did not consider it permanent - but that we understand it for what it is, a metaphysical analogue, if you will, a metaphysical characterization of the only fundamentally real or basic constituent in the universe. Leibniz did not present his metaphysical descriptions of substantial entities instead of physical

recall Wittgenstein's metaphysical scheme as presented in

analyses of bodies endowed with force, for his conception and grasp of the latter was adequate to rebut the challenges of the atomists and Descartes. Leibniz's use of the expression 'as if' anticipates Kant's employment of the analogical term in the context of reason's pursuit of systematic unity in nature. The important point is not the historical question as to whether Leibniz understood his analogies as analogies or whether he perhaps meant them literally - a question for which one could unearth in the texts evidence for both sides, but whether Leibniz's conception of substantial entities constituted by a basic active force, makes good philosophical sense and fits in with attempts in physical theory to define the nature and essence of things in terms which can stand up to criticism, both logical and dynamical. Kant comes to accept a good deal of Leibniz's analyses of the dynamical nature of substances and the consequent theories of space and matter. Buchdahl has documented the function of analogy in Leibniz's metaphysical scheme and argues that we can go along with reasoning by analogy when there exists no alternative but must recognize that the analogy breaks down eventually, i.e. analogies are replaced by explanation.<sup>5</sup> That there are such things as individual substantial entities constituted by active force is a logical requirement or perhaps more accurately, a conceptual requirement, of a metaphysical scheme which <sup>was</sup> alleged to represent the real order of things in the universe, and it is instructive in this respect to recall Wittgenstein's metaphysical scheme as presented in

the Tractatus Logico-Philosophicus: Leibniz thinks there must be substantial entities much in the same way that Wittgenstein believed that the logic of our language required that there be simple objects named by logically proper names. Leibniz could do no more than argue to the necessity of substantial entities just as Wittgenstein argued to the conceptual necessity of the existence of simple objects as such; of course, it is irrelevant that neither philosopher was able to produce a sample of the putative object or entity operative in their respective systems, irrelevant, that is, to the success or failure of the attempt to produce, in a philosophically idealized mode, a metaphysical theory of the nature of reality. One final passage from Leibniz's first published account of his 'system' will serve to warn us against taking Leibniz's 'picture-talk' literally; the true concept of substance, for Leibniz, is the concept of an entity essentially active and endowed with a living force concentrated at a putative point, and we shall see that both Boscovich and Kant come to present a theory of forces according to which forces emanate from point centers of influence:

"To find these real unities, therefore, I was forced to have recourse to a formal atom, since a material being cannot be at the same time material and perfectly indivisible, or endowed with true unity. It was thus necessary to restore and as it were, to rehabilitate the substantial forms which are in such disrepute today, but which in a way makes them intelligible and separates their proper use from their previous abuse. I found then that their

nature consists of force and that there follows from this something analogous to sense and appetite, so that we must think of them in terms similar to the concept which we have of souls. But just as the soul ought not to be used to explain the details of the economy of the animal's body, so I concluded that one ought not to use these forms to explain the particular problems of nature though they are necessary to establish its true general principles. Aristotle calls them first entelechies. I call them, more intelligibly perhaps, primitive forces, which contain not only the actuality or the completion of possibility but an original activity as well." (L 454)

I shall take it then that Leibniz's metaphysical analogies are projections as to what the universe must be like with respect to the kind of entities which are necessary to the world-order and to the possibility of explaining the world-order in terms of such necessary entities. The fact that Leibniz himself never clarified the precise nature of the relation between these metaphysical analogies and his dynamical theories needn't prevent us from doing so, of course, from the perspective of metaphysical or scientific realism. Such an endeavour takes the form of specifying the kind of entity, the ontological posit, which could possess the features required by the sort of thing capable of being the unconditioned and basic 'stuff' of the world.

To return to the main discussion. According to Leibniz, the presence of forces and activity require the postulation of the active principle of substance for mere passive existents could not explain modifications such as force and action. This leads Leibniz to distinguish

secondary motive force and secondary matter from the living force which characterizes substantial entities; body, on this account, can be characterized as secondary matter possessing secondary motive force, i.e. motion. In this way Leibniz derives all the primary qualities which the atomists ascribe to simple corpuscles, from the relations of continuity and coexistence which hold amongst pluralities of substantial entities, as Leibniz more or less states himself in the passages we have quoted. The important point here is that Leibniz thus effects an explanation of the forces active in the world by reference to the substantial entities whose existences are postulated within the world rather than outside it. There are stock objections which any defender of Leibniz's theory must confront, the most significant of which would appear to be that (1) substantial entities are not really discoverable; (2) Leibniz relies too heavily on metaphysical principles in moving from one step in his argument to another but it is the criticism which Kant makes that poses a serious problem for a theory of force such as Leibniz's. Substantial entities, as I have indicated earlier, do not causally interact with each other so that one cannot use substantial entities to explain the production of transeunt forces which in turn bring about the state-changes in entities existing outside the entity actually producing the force. This drives Leibniz to his notorious conclusion that phenomena (which, it must be remembered, are what are to be explained here)

do not really interact with each other. There is a genuine gap here between Leibniz's metaphysically-oriented theory of dynamics and the way the world really is, or for that matter, even appears to be. There is no justification for explaining the causally constructed and causally grounded order amongst phenomena in terms which contain not even the possibility of causal interaction for the entities underlying that order; in brief, there is a serious lack of structural isomorphism between the order apparent in the world and the order responsible for it in the realm of substantial entities. We have already met such non-isomorphism with respect to Kant's doctrine of things in themselves in the context of science.

Thus both Leibniz's theory of force, and atomism, as kinds of reductionism of one type of entity to another will not do. One of the flaws of atomism at least in its Newtonian version is that it does not seem to be able to explain why, on its account of things, the amount of motion in the world isn't steadily diminishing. The problem, as Boscovich pointed out, concerned the supposed interaction amongst inelastic bodies (the atomist corpuscle). In order to explain inelastic collision, that is, force exerted by one inelastic body on another such body, we must suppose instantaneous acceleration and this latter is equivalent to infinite acceleration, or supposing infinite acceleration on the part of one of the bodies involved. The possibility of infinite acceleration presupposes the existence of infinite forces

but according to Newtonian principles infinite forces ought not to be really possible. As I said, it was Boscovich who presented a proof of this in his A Theory of Natural Philosophy<sup>6</sup>:

"Suppose there are two equal bodies, moving in the same straight line and in the same direction; and let the one that is in front have a degree of velocity represented by 6 and the one behind a degree represented by 12. If the latter, that is the body that was behind, should ever reach with its velocity undiminished, and come into absolute contact with the former body which was in front, then in every case it would be necessary that, at the very instant of time at which this contact happened the hindermost body should diminish its velocity and the foremost body increase its velocity, in each case by a sudden change ... without any passage through the intermediate degrees ... For it cannot possibly happen that this kind of change is made by intermediate stages in some finite part, however small, of continuous time, whilst the bodies remain in contact. For if at any time the one body then had 7 degrees of velocity, the other would still retain 11 degrees, thus during the whole time that has passed since the beginning of contact when the velocities were respectively 12 and 6, until the time at which they are 11, and 7, the second body must be moved with a greater velocity than the first; hence it must traverse a greater distance than the other. It follows that the front surface of the second body must have passed beyond the back surface of the first body; and therefore some part of the body that follows behind must be penetrated by some part of the body that is in front. Now, on account of impenetrability, which all Physicists in all quarters recognize in matter, and which can be easily proved to be rightly attributed to it, this cannot possibly happen. There really must be, in the commencement of contact, in that indivisible instant of time which is an indivisible limit between the continuous time that preceded the contact

and that subsequent to it ... a change of velocity taking place suddenly, without any passage through intermediate stages; and this violates the Law of Continuity, which absolutely denies the possibility of a passage from one magnitude to another without passing through intermediate stages."

Now if it is granted that infinite forces are impossible and that all action is continuous<sup>7</sup>, then ultimate entities cannot be atomic particles i.e. the ultimate constituents of matter cannot be massy, impenetrable corpuscles.

2. We are now prepared to examine Kant's own force theory of matter. At (551-553) of MFNS Kant offers a proof, or more accurately, an argument to the effect that causation by contact of atomic bodies is an impossibility. The argument is almost identical in essentials with Boscovich's. Kant, however, differs from Boscovich with respect to the characterization of forces responsible for a body's motion in the following very important way. As we saw in our discussion of the 'Second Antinomy' Kant maintains that the infinite divisibility of space entails the infinite divisibility of matter and hence that no infinitely small substance of the sort normally postulated as responsible for the attractive and repulsive forces, are to be found in space. And we also saw that in this regard Kant can be taken to follow the true Leibnizian position as to the nature of space, substance and matter; matter is not made out of simples, whether these be monads or atoms or anything else. Simples can be postulated, if not as the parts

of matter, then as the parts proper of the non-sensible and unknown ground of the appearances which we call matter (to be distinguished from the composite matter constituting appearances ('On a Discovery'; 203). Accepting the proviso that things in themselves are, or, can be said to be, composed of simples, Kant agrees with Leibniz's argument that matter, as extended, must be continuous.

Since the assumption that bodies are inelastic or composed of impenetrable, hard atoms, leaves the possibility of collisions between bodies unaccounted for on strict Newtonian principles, it follows for one accepting the truth of the overall Newtonian picture of the physical world as Kant did, that one should deny that bodies are composed of inelastic parts at all; and if matter is not composed of inelastic parts then the impenetrability of the parts is not absolute but relative and this is just how Kant argues in the chapter on 'Dynamics' in *MFNS* (499-503). Matter fills space by the "repulsive force of all its parts" (*ibid*, 499) and because the power to fill space in this way must be relative, Kant argues that the forces filling space should possess a determinate degree always greater than zero but always less than infinity (*ibid*, 499). From this Kant reasons to the conclusion that all matter is "originally elastic" (*ibid*, 500) and in the process avoiding the problem of inelastic collisions. Kant is now free to argue that even if one matter could compress another matter to infinity, this would not and

could not, imply that one matter could completely penetrate another matter so as to completely abolish the space of that matter; since matter is originally elastic, complete penetration would require the existence of infinite forces and these are an impossibility (ibid, 501). The success of Kant's argument here can thus be seen to depend on the impossibility of infinite forces: matter fills space in virtue of its relative repulsive forces and since there can be no infinite forces, one body cannot conceivably pass beyond the surface of another body. Kant thus arrives at the same conclusion as Boscovich did in the quoted passage we discussed; Kant however is able to explain bodily contact in a way that is in keeping with Newtonian dynamics while at the same time avoiding the problem that arises under the assumption that bodies are inelastic and impenetrable:

"Absolute impenetrability is indeed nothing more or less than a qualitas occulta. For one asks, what is the reason why matters cannot penetrate one another in their motion? He receives the answer, because they are impenetrable. The appeal to repulsive force is free of this reproach. For although this force likewise cannot be further explicated according to its possibility and must hence be admitted as a fundamental one, it nevertheless yields the concept of an active cause and of the laws of this cause in accordance with which the effect, namely, the resistance in the filled space, can be estimated according to the degrees of this effect." (ibid, 502)

The problem with absolute (and thus primitive) impenetrability is that we have no means of measuring it quantitatively, a problem which does not arise with respect to forces; poss-

Assessing a degree, forces can be measured by comparing their repulsive powers with each other. In this way Kant provides us with a candidate for the dynamical stuff of the world which is both primitive and fundamental (its possibility cannot be demonstrated) while remaining subject to quantitative treatment. Forces can be cognized and treated by science; from the perspective of a possible ontology based on the real and unconditioned which is at the same time 'in' the world, according to the prescriptions of Leibnizian realism, forces as thus conceived would appear to satisfy all the requirements. This possibility receives further ontological 'embellishment' from Kant who, in the 'Anticipations of Perception' of CPR speaks of that alone which is real as that possessing being - the real in perception which possesses a determinate degree (intensive magnitudes).

By postulating a fundamental repulsive force Kant accounts for the impenetrability and solidity of material things; this is insufficient, however, to construct a complete theory of material bodies. If matter consisted entirely of repulsive forces and space, as we must assume, possessed no quality by which the manifestation of these repulsive forces could be limited, then matter "would disperse itself to infinity, and no assignable quantity of matter would be found in any assignable space. Consequently, with merely repulsive forces of matter, all spaces would be empty; and hence, strictly speaking, there

influence. It is sufficient for my purpose that the phy-

would be no matter at all." (ibid, 509) Kant says that even though we do not have immediate sensory evidence of attractive forces, they must be recognized as fundamental forces (ibid, 509-10). A solid body will thus be a collection of attractive and repulsive forces in which the repulsive force of the aggregate is greater than the attractive, thereby explaining the ability of the aggregate to resist penetration by other solid bodies. Now, the qualities of impenetrability, hardness and extension are the essential qualities possessed by matter in the atomist or corpuscularian world - view. The possibility that Kant's theory of forces might be capable of accounting for these primary qualities can be shown in the following way, suggested by R. Harré<sup>8</sup>. Harré designates as the surface of a body a 'point' at which the actual nett force amongst the aggregates is equal to zero. In order to carry this out, Harré postulates that the repulsive force of a body will have a larger absolute value near the center of the body (near the point center of influence) than the attractive force. As the repulsive force approaches the body's surface, its absolute value falls off rapidly, so that at the surface the two forces are equal and in balance. I do not, as I have indicated, propose to pursue this in detail. The reader is referred to Harré's account of the possibility of showing that the fundamental qualities of hardness and impenetrability can be understood as the effect of powers of mutual attraction and repulsion between centers of influence. It is sufficient for my purposes that the phy-

sical possibility exists which would admit initial plausibility to the philosophical conceivability of such an account. So far, Kant's theory does appear to be prima facie plausible in this respect although we must now consider an important difficulty which arises in connection with Kant's account of repulsive forces and his account of attractive forces. The problem here, as M. Hesse has explicated with admirable clarity<sup>9</sup>, concerns the lack of symmetry in Kant's account of the two kinds of forces. Repulsive forces act by contact, that is, in order to act they must do so where they are and not where they are not, so to speak. If we were to postulate a repulsive force acting on a distant matter, we would have to suppose that such action was effected by means of an intermediate matter. Attractive forces, on the other hand, can act 'at a distance' or, without a medium, through empty space. But there is a problem here: if space is filled to some degree with repulsive forces in all places it is impossible that attractive force should have an empty medium through which to act unimpeded. The only solution is that attractive forces must be different in kind from repulsive forces, or, quite simply, have a different status. As Hesse points out,<sup>10</sup> attractive forces cannot be substantial in that they penetrate space without filling it: "If it were (if attractive force were substantial - JD), it would be subject to the same antinomy as that concerned with infinite divisibility of matter, and Kant would have to regard the question

of action at a distance or continuous action as one to be settled by regulative principle and not as factual. But he nowhere suggests this, and appears to regard the existence of attractive forces at a distance as an a priori truth of the metaphysics of matter."<sup>11</sup> Indeed, Kant must regard attractive forces - the existence of attractive forces - as an a priori truth of the metaphysics of matter in a way which is more fundamental than that of repulsive forces. If we look at how Kant speaks of the possibility of action at a distance, the distinct impression emerges that he considers the concept of continuous action to involve a non-sequitur: "Therefore, attraction acts directly in a place where it is not - something that seems to be contradictory. But it is so far from being contradictory that one can say, rather, that everything in space acts on another only in a place where the acting thing is not. For if the thing should act in the same place where it is itself, then the thing upon which it acts would not be outside it; for "outside" means presence in a place where the other thing is not." (MFNS, 513)

Because attractive force is a condition for the possibility of material bodies, Kant thinks that, regardless of the counter-intuitiveness of the idea of attraction at a distance, attraction must not be limited to attraction by contact. In other words, because Kant appears to believe that attractive forces are a condition for the very possibility of matter, or material bodies, attractive forces

are in some sense (logical, conceptual) prior to, the possibility of contact and thus cannot be made dependent on contact as its only possibility (ibid, 514-515). So Kant argues to the conclusion that attractive forces do not act continuously, from the conceptual or logical priority of the existence of attractive forces with respect to the possibility of matter. But all that is required for the possibility of material bodies is that repulsive and attractive forces exist in a body, or, that there exist attractive forces in a body to prevent the repulsive forces from dispersing the body to infinity. And this does not carry any implications regarding the non-continuousness of attractive forces. In fact there is an argument usually put forward by proponents of field theory to the effect that continuous action through a medium gives a much simpler and more readily comprehensible model of causal action in space. Take two separated bodies E and F and suppose that E moves quickly with respect to F; because of the motion of E, F will itself come to experience a change in motion. However, it cannot be assumed that F will experience a change in motion at the same time as E for that involves the further assumption that a change in the force field surrounding E and F could be transmitted at an infinite speed, and such an assumption cannot be admitted. If the velocity of the change through the force field is finite, then the energy and momentum of the body will be given up to the space surrounding it. And this, according to field

theorists, requires the adoption of a field theory for its explanation; for in order to plot the initial conditions of the system we must specify the actual relations holding between bodies (or atoms, point atoms) and not just the individual momenta of all the bodies or atoms in the system only: but in order to specify the relations holding between the point atoms we must specify the momentum present at each point in space.<sup>12</sup>

According to Kant's theory then, attractive forces prevent the repulsive forces of bodies dispersing to infinity. However, Kant thinks that because attractive forces are what makes contact between bodies possible, gravitational action (action at a distance) acts independently of the filling of space:

"The original attractive force itself contains the ground of the possibility of matter as that thing which fills a space in a determinate degree, and hence contains the ground of the very possibility of a physical contact of matter. Therefore, this attractive force must precede the physical contact of matter; and its action must, consequently, be independent of the condition of contact. Now, the action of a moving force that is independent of all contact is also independent of the filling of space between the moving thing and the thing moved, i.e. such action must take place without the space between the moving thing and the thing moved being filled, and hence take place as action through empty space. Therefore, the original and essential attraction of all matter is an immediate action of one matter upon another through empty space."  
(MFNS; 512)

The problem here is that later in MFNS (from 524 -535, esp. 534 - 535) Kant comes very near to denying the existence of empty space and he certainly does not consider it to be 'actual' but at most, a mere hypothesis the reality of which can never be shown. Of course, Kant also states that it is repulsive force which fills space but in the present context we are dealing with gravitational force which Kant claims to act independently of repulsive force. It follows then, that Kant would require the postulation of the void to explain the action of gravitational forces. Now, if gravitational action is to be thought of as independent of repulsive forces (ibid; 516) then what are we to make of the claim that material bodies are made possible by attractive forces (gravitational) interacting with repulsive forces to prevent their (repulsive forces) dispersal to infinity? The interaction of attractive and repulsive forces is supposed to explain bodies possessing determinate boundaries and thus definable with respect to other bodies and this is possible only if both the repulsive and attractive forces are in bodies. But, if gravitational (attractive) forces act independently of all contact, i.e. are not in continuous and immediate contact, then how are attractive forces supposed to prevent repulsive forces within bodies from dispersing? For it surely follows from Kant's description of attractive and repulsive forces that each requires the existence of the other in order to manifest itself. This problem can only be solved by amend-

ing Kant's theory so that, in order to preserve the conceivability of the two forces interacting to explain relative impenetrability and thus material bodies, the action of attractive forces is continuous. Once again, I can do no better here than refer the reader to the 'proof' of the Law of Continuity offered by Harré as an improvement to the original presented by Boscovich.<sup>13</sup>

The point is that even if (say) quantum mechanics exemplifies a conceptual system in which discontinuous changes in states of entities are regular occurrences thereby paving the way for the possibility of treating space and time themselves as quantized and likewise, discontinuous, this is hardly sufficient to make us overthrow a law like continuity which is, for the most part, exemplified in nature. The law of continuity is coherent while concepts like discontinuous time and space remain inscrutable to our cognitive comprehension; considering this and the fact that most natural phenomena continue to unfold in such a way as to renew our faith in such a law, we can be allowed to grant it a priori rational conceivability.

3. Accepting the argument thus far, and recalling our attempt in the last chapter to show that Kant's 'Second Antinomy' proof against the possibility of there being ultimate constituents in the world (simples), is unsuccessful, then we are entitled to proceed with the task of

presenting a philosophically-oriented theory of what such discoverable entities might be like. A metaphysical (philosophical) theory of the nature of reality on my account functions as a possible ontology which can anticipate from the perspective of Leibnizian realism (that is, from the perspective of ontology and not only epistemology) the structural properties appropriate to different kinds of things. So, in the present case, philosophy can determine, a priori, that matter must be endowed with attractive and repulsive forces, even though only the physicist can calculate the particular magnitude of such forces.

We know that Kant in the MFNS wants to provide impenetrability with an explanatory basis that is dynamical, for on this account, impenetrability is relative to the density of a repulsive force in a given space, not, as it would be under the atomist picture, explicable in terms of the unconditioned parts of body. According to the force theory put forward by Kant and amended as above, the substance of the world is a continuous field of repulsive and attractive forces. Further, and as we argued in the last chapter, a continuous field of forces in space is infinitely divisible but it does not follow from this that forces need be construed as conditioned, at least not in the sense in which I want to understand the concept of unconditioned with respect to simples existing in the world. Forces are simple insofar as they are not reducible to any other kind of thing nor constituted by any other thing, and, there will be either an attractive or repulsive

force for every point in space. The unconditionedness of forces consists in this: unlike Kant, we can construe unconditionedness as purely ontological so that forces, which require no other existent for their existence, are ontologically unconditioned: and since forces are the only unconditioned entity there is, qualities such as extension, which for the atomist is primitive, are derivative with respect to forces. This implies as well that although a body may be divisible because it is an extended thing, forces need not be so divisible since extension is merely derivative, i.e. does not constitute an essential part of them. Another interesting aspect to this, and one which has been discussed by J. Bennett,<sup>14</sup> is that Kant's argument about the divisibility of simples makes sense only if we assume that the simples in question are countable items which are in turn composed of countable items. Kant has however, rejected this atomist view and replaced it with a dynamical one according to which it is nonsense to suggest that the division of a field results in 'parts of the field' for fields are not really divisible in this sense. Forces are continuous yet simple insofar as they are ontologically unconditioned, to wit, do not depend on anything else for their existence. There is nothing, so to speak, which props them up from below even though they require the existence of other forces in order to manifest themselves. Now Kant would have assumed that any entity which required the existence of other entities to manifest

itself would not, just because of this, be unconditioned. But look at the example of spontaneity with respect to the power of the will. My free willing is unconditioned by any other factor, state of mind, etc., it is pure spontaneity. However, the moral law is a necessary condition for the realization of that free willing, as we saw in the second chapter. In order for my free willing to manifest itself as such, something against which it can realize itself, is required. This in no way effects the absolute unconditionedness of pure spontaneity and it is spontaneity which is the ontological and unconditioned source of both freedom and reason. As for spontaneity, so for a point center of influence from which forces radiate. Without other forces emanating from point centers, repulsive forces would disperse to infinity. This, however, leaves unaffected their ontological irreducibility (unless, of course, something else is discovered which constitutes them). Because Kant possessed such an epistemologically oriented conception of the unconditioned, it remained inconceivable for him to regard the unconditioned and the conditioned as able to enter into causal relations without the unconditioned thereby becoming completely conditioned. An entity can be unconditioned in its being without being unconditioned in the way that it manifests itself.

Spontaneity is the ontological ground of both rationality and freedom and the powers which make them-

selves manifest as a result of this ontologically unconditioned source eliminate any need to demonstrate the a priori possibility of spontaneity. Indeed, Kant ought to maintain that no demonstration of the possibility of spontaneity can be provided for the unconditioned cannot be so 'proved', which may perhaps explain why he nowhere attempts such a demonstration. He clearly thinks that no such demonstration of the possibility of attractive and repulsive forces is possible and just for this reason, to wit, what is fundamental cannot be shown to be possible: "For to comprehend original forces a priori according to their possibility lies generally beyond the horizon of our reason. Rather, all natural philosophy consists in the reduction of given forces apparently diverse to a smaller number of forces and powers sufficient for the explication of the actions of the former. But this reduction continues only to fundamental forces, beyond which our reason cannot go." (MFNS; 534) Both spontaneity and fundamental forces are unexplainable because unconditioned, yet they are themselves the explainers of the manifest powers of the mind and material bodies respectively. To adopt a phrase of Sellars, explanations offered in terms of such unconditioned entities will be the unexplained first principles of a system - the unexplained explainers.<sup>15</sup> This is how such explanations would function if there were such first principles and it may be that we must adopt some principles as first principles if

only to justify, in the sense of providing an explanatory basis for, the whole system of explanation in question. Kant however, refuses to accept even the problematic status of entities such as fundamental forces which might possibly function as the unexplained explainers of the system, since, as the passage quoted above clearly shows, the fact that we cannot go beyond fundamental forces is taken to indicate, not a provisional characterization of forces as the unconditioned, but that there must be more to comprehend than such fundamental forces; there must exist something else which could explain them even if it be inaccessible to our cognitive apprehension. Kant, in other words, cannot, for epistemological reasons built into the structure of his system, accept something as unconditioned in its being even if there exists nothing else with which to explain it. But as I have argued throughout, Kant's only defense of this lies in his repeated claim that all knowledge must be knowledge of the conditioned series and as I have also argued, the unconditioned manifests itself as conditioned but is itself unconditioned in its being. It is this possibility that Kant cannot account for. That something can be conditioned with respect to our knowledge of it but unconditioned in the order of being should be evident from Kant's notorious difficulty with the self as an object of knowledge and as an experienced existent. Why should we not assume the existence of the spontaneous power of the self from our own experiences of the moral law

and the will in conflict? Beck identifies this structural (built-in) ambiguity of Kant's theory:

"When Kant in his precritical period believed that there was an intellectual intuition it was to the faculty of spontaneity that he ascribed consciousness of the self. With the denial of intellectual intuition Kant hedges the question of our knowledge of our own spontaneity but the experience is not denied."<sup>16</sup>

Kant no doubt thought that unconditioned entities, if they did exist, could not be described simply because, like the self in its spontaneity, they could not be experienced items. However, it is possible to give a limited description of such unconditioned entities in terms of powers, and force fields and point centers of influence have both been characterized in this way. Unconditioned entities can be understood as point centers of influence or centers of power distributed in space. The powers of influence being the forces of attraction and repulsion and the point centers which constitute the field are characterized by nothing more than attraction and repulsion. The state of the field can be described or specified by a vector (which Kant himself considers in MFNS) which indicates the strength and direction of the force that a unit charge would experience if it were at that point. Fundamental material things such as atoms or corpuscles which are normally defined in terms of their primary properties, can be described as a collection of centers of power, of "mutual influence, which are jointly such that a continuous limiting surface of an infinite region of zero repulsive 'force' surrounds it. The surface

is created by the mutual effect of the constituent centers of influence."<sup>17</sup> Forces are fundamental if they are not generated by or through the composition of other forces; only those purely original point centers of influence whose being is just the attractive and repulsive forces with which they are endowed, are genuinely unconditioned entities. I do not propose to pursue this analysis of the unconditioned in terms of pure powers of point centers, nor is this the place; for the important point for our purposes is that we can reasonably expect that some specification of the unconditioned parts of experience can be provided despite Kant's epistemological strictures. Indeed, Kant himself provides us with a possible limited description of such unconditioned entities, a description which reflects Kant's epistemological attitude towards the conditioned and the unconditioned: Kant offers a dynamical theory of matter in terms of forces; as such, forces are the real responsible for the constitution of the physical world and even Kant must admit that forces are the fundamentally real stuff of the world. This description however, meets the description of the real in perception as an intensive magnitude presented in the 'Anticipations of Perception'. Consider: the 'Axioms of Intuitions' present the formal or structural characteristics of matter in its spatial relations while the 'Analogies of Experience' present the formal and structural characteristics of objects in their temporal relations.<sup>18</sup> The Anticipations are designed to characterize the dynamical

aspect of matter in terms, essentially, of the degree of intensity of the real in perception, or more accurately, of the degree of intensity corresponding to the real in perception. As such, an intensive magnitude ought to be characterized as a measure of such intensity pure and simple, that is to say, in a way which is not related to any metric of space and time. To suppose otherwise would destroy the plausibility of making the distinction between extensive and intensive magnitudes in the first place. Force fields composed of point centers are distributed across space but not in such a way as to imply that space and time exist prior to the field. We must remember here that for Kant spaces and times are themselves extensive magnitudes; considered by themselves, spaces and times are pure intuitions of spatial and temporal manifolds. However, in order to have empirical manifolds we require the matter of experience, so that even the possibility of spatiotemporal empirical manifolds depends upon there being more than just space and time. It is this necessity which I believe is described in the Anticipations as intensive magnitudes and which can serve as a description of the unconditioned forces of attraction and repulsion.

The primary qualities of the atomist corpuscle such as shape, size, extension all relate to our conception of what observable bodies must be like. It is this collection of determinable qualities essentially connected with space and time that Kant describes as extensive magnitudes. What of secondary qualities? Colour, taste, smell, and the

rest, as sensible qualities, would seem to depend on a basic spatiotemporal frame of reference in order to be displayed to our senses. Colours are magnitudes displayed in space and time as are the smells and tastes the being of which is partially in their being perceived; the forms of our perceiving are space and time so it would be difficult to argue that smells and tastes are not extensive magnitudes. It follows then that the accepted list of primary and secondary qualities is characterized as belonging to extensive magnitude. We are left with just one problem, that common to all philosophical attempts at listing primary and secondary qualities, to wit, what to do with 'solidity'. It is clear that solidity cannot be classified in any direct way as a primary quality if only because solidity in bodies is a matter of the varying degree of intensities in bodies themselves. The problem is that this degree of intensity does not depend on the display in space and time of anything recognizable as either a secondary or primary property. I shall take it that solidity is a secondary quality which differs from our usual secondary quality in that it is not displayed across a spatiotemporal framework. In any case, solidity (or impenetrability) is a derivative quality of bodies on the basis of a force theory of matter such as Kant's, being produced by the interaction of attractive and repulsive forces which, at the surface of a body, are balanced. Now, since intensive magnitudes are neither primary nor

secondary properties, and all primary and secondary properties of bodies are, on the basis of a force theory of matter, derived properties, intensive magnitudes can be characterized as ontologically primitive, or, if you like, ultimate. Secondary qualities, as is customary, can be accounted for in terms of primary qualities but there must be both primary and secondary qualities in our ontology for there must be something which possesses extension, or, is extended, and has shape, etc. Only the real in the field of appearances have a degree, that is, only the real has intensive magnitude (as opposed to extensive magnitude); if the forces of attraction and repulsion are the real, then only forces are intensive magnitudes and only forces or point centers from which they emanate, have being without being spatiotemporal. Not being either primary or secondary properties, intensive magnitudes do not depend for their being on a spatiotemporal spread of some kind. Forces, therefore, as the unconditioned characterized as intensive magnitudes, fill space without themselves being located in space as are shapes, sizes or motions; nor are forces temporal like change or motion.

It remains to bring this sketch into line with Kant's doctrine of the real and sensation in the Anticipations, thereby demonstrating that the real which corresponds to sensation - the what of a thing - can only be what is unconditionally real. In the following analysis I pick up clues provided by Heidegger's reading of the 'Anticipations

of Perception', especially his claim to the effect that the historical precedent of the topics discussed in the Anticipations is Baumgarten and his pre-critical metaphysics of the real and the "whatness" of a thing.<sup>19</sup> According to Baumgarten, what distinguishes the real is determinateness with respect to the essential nature of a thing (rather than knowledge). Determinations belong to the 'res' or body as such and Baumgarten thought that such determinations were extension and materiality. The important point for us is the notion that the real is what determines what a thing is. Without the real, whatever it may be, actuality and inactuality remain but empty concepts, for there would be nothing to be 'actual', or, we would not be able to judge as to what was and was not, actual. The opposite of the real is "a what which does not determine a thing positively, but in regard to what is missing in it..."<sup>20</sup>, i.e. the opposite of the real is privation or "negation". And this we find stated by Kant in the Schematism:

"Reality, in the pure concept of the understanding, is that which corresponds to a sensation in general; it is that, therefore, the concept of which in itself points to being (in time). Negation is that the concept of which represents not-being (in time). The opposition of these two thus rests upon the distinction of one and the same time as filled and as empty." (A143 = B183)

What this tells us is that the real which corresponds to sensation in the world is being, not, as we might expect from the Analytic, appearance or existence. The differ-

ence between time-filled and time-empty is a difference between being and non-being. This implies quite clearly that an empty time is one in which there is nothing to be known; it doesn't imply that there is something which cannot be known. However, even here in the Anticipations we find Kant arguing that, granted there is something real in sensation, or corresponding to sensation, since it determines a thing in time and time, as we know, is the form of intuition, then, we must assume that whatever corresponds to sensation in the object is not the transcendental matter of all objects as things in themselves (A143 = B183). But we have already dealt with this position of Kant's and have tried to show that such a position drives Kant into admitting that the world really exists only in inner sense or the soul and we simply make do with the appearances lingering outside it. Without repeating our reasons for rejecting this, once we do reject it, we can reach the conclusion that indeed, what corresponds to sensation in the object is the transcendental matter of objects, and this transcendental matter, furthermore, provides us with the (as Kant says) the thinghood of the things, or as we choose to say, the basic stuff of the world. In view of this the Anticipations take on a different meaning. Once the inner sense doctrine is rejected, the real which corresponds to sensation - the what of a thing - its quality or as Heidegger says, its "quale", which must occupy the void of space and time,

can be used to provide the basis for an ontological theory which in turn is centered around a force theory of things. Heidegger's suggestion that the real in sensation is what must occupy space and time supplies us with the key to understand the Anticipation in the ontological way we require. The difference between a void and occupied space is just the difference described (conceptually) by Kant as negation corresponding to not-being and reality corresponding to being. We have at the theoretical level Kant's categorization of the real and negation (being and not-being) fulfilled at the physical level by what could possibly fill space and time, and complete nothingness. How, the question is, do we characterize what fills space and time? We cannot choose to characterize what fills space and time in terms of secondary qualities since they are reducible to primary qualities (at least in principle). Primary qualities, on the other hand, satisfy the requirements of extensive magnitudes provided by Kant in the 'Axioms of Intuitions' and besides, as we have stated, primary qualities are not primitive insofar as it can always be asked of them - what is it that is extended, has shape and figure, etc. If we are granted, at least in a tentative fashion, that Kant's concept of the real in perception does not require for its existence a presupposed spatiotemporal system, and since Kant himself identifies the real in perception as a quality, then, we can postulate intensive magnitude as the only quality which might

possibly characterize the real. Kant's definition of the anticipations of perception in the first edition CPR is more easily appropriated to our purposes here: "In all appearances sensation, and the real which corresponds to it in the object (realitas phaenomenon), has an intensive magnitude, that is, a degree." (A166-A167) Every sensation and every reality in the field of appearance, Kant tells us, has its own degree of intensive magnitude and the range of possible degrees of intensity of such magnitudes can fall anywhere between reality (complete being) and negation (not-being = 0) (A169 = B211). In this sense, it is true that secondary properties such as colour can and do have some degree of intensive magnitude but this does not count against my attempt to discount secondary qualities as intensive magnitudes since there are no secondary qualities which can be entirely accounted for in terms of intensive magnitudes, e.g. red has a degree of intensity, according to whether it is a bright or dull red, but it also requires a spatial and temporal layout, so to speak. The same holds true for all the primary and secondary qualities., with solidity being the possibly problematic exception (for which we offered at least a plausible explanation). As manifest qualities the primary and secondary properties of objects cannot possibly be the real in perception for they are not self-sustaining "types", indeed, the real, whatever it is, is designed to provide a foundation for just the kind of properties represented by

primary and secondary qualities. Kant seems to be not unaware of this fundamental difference between primary and secondary qualities, on the one hand, and the real, on the other hand: "The quality of sensation, as for instance in colours, taste, etc., is always merely empirical, and cannot be represented a priori. But the real, which corresponds to sensations in general, as opposed to negation = 0, represents only that something the very concept of which includes being..." (A175 = B217). On this account, the difference between the quality of a sensation and the real which corresponds to it, is the difference between being in some way affected sensorily and there being something which is affecting me sensorily. It follows from this that statements reporting matter-of-fact sensory experiences do not capture the necessity of there being ('in general') something which fills space and time, i.e. Being = the Real. In other words, the real cannot be described simply by observational reports because primary and secondary properties are not what fills space and time, for only the real fills space and time, and the only means we have of describing the real (which fills space and time but is not in space and time) is in terms of intensive magnitudes. Aligning this with Kant's MFNS doctrine that only attractive and repulsive forces radiating from point centers of influence can fill space and time (and thus account dynamically for impenetrability and solidity), forces are the unconditionally real, describable in terms of intensive magnitudes. That the Principle of the Anticipations of Perception can

be interpreted in this manner is defended by Heidegger who says: "But, the principle wants to assert that the real has first and properly as quale a quantity of degree - and therefore also does sensation, whose objective intensity rests upon the prior givenness of the reality character of what can be sensed. The wording of A is, therefore, to be modified in the following way: 'In all appearances sensation, and that means first the real, which lets the sensation show itself as an objectivity, has an intensive magnitude.' "21 Only the real can fill space and time which amounts to saying that, not primary or secondary qualities, but intensive magnitudes used to describe (say) forces or basic powers, can explain appearances. Kant's category of Quality with its moments of reality and negation can thus be seen to be vindicated only in such a way (paradoxically for Kant) as to provide for an account of an unconditioned power which can be postulated as the source of phenomena.

To complete this account it would be required to provide a detailed description of how powers function as an explanatory basis for understanding objects and their primary and secondary properties; the properties of objects, for example, become powers objects possess in virtue of their internal structures and these powers account for the way in which we are affected by objects. It will have to suffice here to suggest in rough outline, the picture that needs to be constructed. As a guide in the presentation

of this account I have relied upon Harré's account of the constitution of ultimate entities.<sup>22</sup> If we identify the ordinary properties of objects with their powers we can explain how the distinction between the real and the un-real (negation) is the conceptual category required for treating forces as intensive magnitudes.

We can characterize fundamental entities solely by what they are able to do and thus by their powers. Forces, identified as ultimates, satisfy the description of intensive magnitudes as the real; as point centers of influence, however, forces are intensive magnitudes which can exist for a point instant. As such, forces are simply pure powers:

"Fundamental entities of the world will be those which, having no nominal essence of manifested qualities of any kind cannot be altered, and being the bearers of numerical identity cannot be transformed: that is whose real essences are permanent." <sup>23</sup>

Ultimate entities can have neither primary nor secondary qualities because such qualities are manifestations of a more basic potential. Point centers of influence are the foci of such potentialities and can thus be described as powers or the bearers of powers. Though such powers may be in space and time, since they are what are constitutive of spatial and temporal things, they are not in space and time in Kant's sense, because they are not demonstrable (they cannot be manifested qualitatively). Powers are of course spatially distributed insofar as they are potentials

attributed to points in space. There is no plausible reason against characterizing powers therefore as intensive magnitudes. In addition, Kant's own warning to the effect that forces cannot be constructed, or, they cannot be explained by being constructed, fits rather well for ultimate entities whose properties are just their powers. The powers of a field are thus intensive magnitudes and the only unconditioned entities in the world. In this sense, powers are intensive magnitudes - the Real in perception. The advantage in characterizing fundamental entities in terms of powers describable as intensive magnitudes, is that it provides us with a way of attributing a state or constitution to a thing in virtue of which it behaves as it does, causally or otherwise. To do this with talk of forces or monads would be awkward to say the least. Notice, however, that monads, once we have rejected the proviso that they do not enter into real causal interaction, fit in with the analysis of forces, point centers of influence and powers. Monads are constituted by their centers of activity (force) and what is infinitely indivisible in space is simply the sphere of activity of the point center. We can in this way identify regions in space from which different forces or force fields radiate. Whether we characterize unconditioned entities as monads, powers, or point centers of influence, is not of major importance, at least not for the purpose of this essay. The rough picture sketched above is thus not meant to be satisfactory in this

respect; it will be agreed that to provide such an account constitutes a project all its own. What is important is that our argument in the second part of this essay entitles us to seek for a theoretical characterization of the unconditioned in terms which would provide a philosophical basis for the construction of an ontology which is essentially Leibnizian (realist). It is a distinct and in my view, likely possibility that Kant thought the only complete (in principle) explanation of the source of appearances could come from an explanation grounded in the postulation of the unconditioned; of course Kant didn't think such an explanation was possible but that does not mean he didn't continue to believe that it was the proper one:

"Wherever there is action - and therefore activity and force - there is also substance, and it is in substance alone that the seat of this fruitful source of appearances must be sought." (A204 = B250)

"...because alterableness is to be met with only in certain determinations of appearances, and because, whereas (in fact) the cause of these determinations lies in the unalterable, experience alone can teach what they are." (A171 = B213)

We can, finally, present one concluding picture of the sort of ontology we envisage: the world consists of material things and their states and these things are in complete (thoroughgoing) interaction with each other at any given time. Since these bodies or material things are composed of attractive and repulsive forces and these forces are essentially parts of a field of force, then, material

things are ultimately pure forces specified or grouped off within the field by the particular power which constitutes them and in virtue of which they manifest the properties they do. These forces, powers, point centers, or monads, are the ultimate constituents of the world and the real which fills space and time; as such they are describable as intensive magnitudes. Phenomena like change, are reducible to state-changes in the force field, since matter is the continuous flow of forces from point centers in the force field. But the point centers or powers which are the foci of forces radiating from them, are themselves unchanging. Forces as the unconditioned or fundamentally real do not change fundamentally although they do of course take on different manifestations depending on the varying degrees of intensity with which they are active. Our laws will be applicable to the Real in perception and govern the manifest changes therein. The various powers of things which Kant attributed to things as in principle reducible to one fundamental power can, on our tentative account of things, be construed as due to the putative existence of attractive and repulsive forces. These forces are the powers of point centers of influence (or monads with our proviso attached) to attract or repel. These forces must be basic and unchanging for there exists nothing which could explain their changing fundamentally.

4. It only remains for me to conclude by specifying the

structural and controlling principles of the metaphysical theory of the nature of reality which can be constructed on the basis of an ontology derived from the postulation of an unconditioned ground as the source of the world-order. The key structuring principle of such a theory is that things in the world be considered (from the point of view of philosophical theory) from a double perspective. We must adopt the perspective of being and the perspective of knowledge and this means that it is crucial to recognize that the object of judgment is an ideal object because it is judged only from the perspective of judgment and all that implies. Kant's complicated story about how we identify, reproduce and synthesize empirical manifolds, must remain incomplete as an account of objectivity if only because it fails to take into account the fact, and it is a fact, that the features of things constrain and direct the judging but they do not determine it. An essential feature of concepts and language (not the only essential feature) is their classificatory and identificatory function. We identify and classify what is given "in intuition", in the manifold of experience, by imposing our conceptual clamps, as it were, upon it. But in doing this we are constrained by the actual features which things already possess before we arrive on the scene, and if what we are interested in is providing explanations and theories which will help us understand the world and the order of the world (and our place in it), then these features of things in the world

will act as constraints against which we must theorize and investigate. In this light, to propose to deduce or otherwise arrive at, knowledge of the world by deriving our basic structural truths from concepts (even if they be categorial) alone, amounts to placing our faith blindly in a kind of conceptual idealism. Leibniz stands radically opposed to this methodology despite the traces of idealism in his writings. Knowledge for Leibniz is obtained by deducing the effects of things from their true natures and the fact that the true natures of things are hidden from us need not imply that we must give up all knowledge of things. Because we do not have direct and immediate knowledge of how phenomena are grounded and what, precisely, grounds them, doesn't imply that what knowledge we do have is not due to the effects of things caused by their true natures. There exists ways of deducing the effects of things from their true natures, for example, we might discover the rules or principles connecting appearances with things in themselves; indeed, by describing things in terms of fundamental powers we are doing just this, to wit, claiming that the manifest properties of things result from their inscrutable but not incognizable natures. To adopt the perspective of the unconditioned is to adopt a perspective different from that of judgment for it is to view things with respect to their real ground.

If this is true, that is, if the distinction between the perspectives of judgment and the object is a legitimate

one, then, Kant's description of the structural features of things (material) is or represents, a partially idealized one. The categories as specifications of the concept of an object in general are specifications operative within the domain of judgment. This is not to say in advance that the categorial specifications must be false or inadequate to how things really are; it is to say that the objective validity of the categories and any a priori system of 'determining' concepts, seen as specifying the structural features of things, cannot be determined by means of conceptual necessity alone. For there is a difference between having justification for employing the categories or any system of concepts like them and their being objectively valid in this sense, and the categories being constitutive of things, i.e. telling us in advance what structural features or defining predicates different kinds of things possess. It is not that the latter isn't possible; indeed, it is this possibility which a theory of ontology based on the unconditioned can fulfill. It isn't possible for a system of concepts the origin of which is in the nature of knowing subjects. Kant's categories and the principles of the understanding can be interpreted fruitfully as supplying the specifications for the concept of an object at the most general and the minimal level of explanation, namely, at the level of the possibility of experience. In order to discover whether these specifications are or can be, fulfilled, we must turn to the things they are specifications of and check out our prescriptions. In

this way, Kant's categories can be genuinely validated by completing (if possible) the specification begun by the understanding. This process of completion is the business proper of science. I suggest that we can show this in the following way: I have argued that there are different kinds of things in the world and different features characterizing each kind. From the perspective of science, the detailed defining structures or features of different kinds will be determined by, for example, the use of genetic codes for the various kinds in question. A certain kind of organism is identified according to its specific genetic code not in accordance with any general features in terms of which that kind could become a possible object of knowledge for us. Physical things are identified, as a matter of course, by their atomic properties, so that anything not having the atomic number 79 (and everything else this means) is not a piece of gold and will not be expected to behave like gold; likewise, anything which is not H<sub>2</sub>O is not water. If categorial frameworks are to be relevant in the sense of being fully applicable to the world, then, they must do more than simply mark off conceptual boundaries with respect to the legitimate and illegitimate use of concepts. Categorial concepts must function as sortal concepts which identify ontological kinds. Kant's concepts are thus the specifications for the most general features of an object but each categorial framework can be construed as possessing its own concept

of an object for all the objects falling within the domain in question. If we can define the essential features of every particular kind then we would have within our grasp the possibility of understanding (= explaining) everything there is, from the most general types to the most particular. This is, as I argued, the driving force behind Kant's classification scheme for understanding the diversity of forms in nature and it is in terms of natural kinds that the ideas of reason can receive vindication.

Categories are thus semantical in nature for they tell us what any given domain of objects consist in and by doing this, they tell us how they are 'constituted' from the point of view of meaning. Every categorial framework specifies for its own kind the concept of an object and thereby injects meaning into the constitution of that kind as separate and distinct from any other kind. In this sense, ontological kinds are accompanied necessarily by a theory of meaning or semantics specifying how we are to understand the kind in question. It follows from this that language and concepts embedded as they are in the world, will be ontologically revealing and discriminatory as to the sorts of things there are and, even more important, there will be an isomorphism between our conceptual structures and our ontological structures. On this account then, ontology is inseparable from a system of categories for the system of categories is simply the semantics for the ontology. It is in this way, according

to this conception of a possible ontology that the two perspectives of knowledge and being (judgment and the object) form the basis for a metaphysical theory of the nature of reality which takes the unconditioned as the ground of the world-order. Only in this way can Kant's categories receive their required 'filling-out'. Science, and the progress of science (in the search for the unconditioned) can secure the objective validity of our categorial frameworks. We move from the point where the categories are initiated in advance (prescribed) from the perspective of judgment to the categories considered ontologically, from the perspective of the metaphysically necessary structure of the world. From epistemology to ontology and back again. From the point of view of knowledge, necessity is what is defined by the transcendental conditions of the possibility of experience whereas from the point of view of the object, what is necessary is a complete ontology (in principle) based on the unconditioned and a semantics to accompany such an ontology including the physical laws with which to explain it.

Kant's central problem was that he never appreciated that an ontology which allowed for, or even required, a degree of necessity stronger than conceptual or epistemic necessity, might be able to justify the attribution of necessity to certain entities within the ontology, by appeal to an unconditioned ground in the world rather than outside it. If there are existents whose being is necessary to

the world-order then we can never understand them (=explain them) unless we suppose that everything is related to everything else necessarily, thanks to a pre-established harmony. In that case, however, we have only necessary entities. Kant's "way out" of this dilemma was to ground all necessity in a transcendental condition, in the nature of the thinking subject, thereby effectively replacing God with man. I have argued in this essay that this move of Kant's is a failure and that it is possible after all to construct an ontology, in the light of science, based on a postulated unconditioned ground within the world - an ontology the historical and philosophical precedent for which, is Leibnizian realism.



## I Transcendental Idealism and the Problem of Objectivity

1. As I have said, this presentation of outer sense makes nonsense of any purported distinction between the objects of outer and inner sense. For the objects of outer sense really exist in inner sense but only appear to hover outside us; if space and time are forms of human intuition, then there can be nothing which is, strictly speaking, outside us, even for sensible intuition. Anything which is really outside us is, as Kant never tired of saying, unknowable.
2. Sellars' reading of Kant's phenomenalism appropriates a phenomenalistic interpretation of material objects to the conceptualism of transcendental idealism. On this view, material objects are fundamentally physical but are bracketed within the representational mode, i.e. for the purposes of description, physical objects are regarded as not existing outright (outside the representational mode). For the relevant sections in Science and Metaphysics, see pp. 48 - 53, p. 60.
3. Ibid., pp. 48 - 53
4. In connection with the problem of getting from judgments about representations to judgments about the extended world when the extended world is alleged to exist only in representations, my position in this essay is that this contrast does not require the adoption of the phenomena - noumena distinction, a point which is supported by J. Bennett, albeit, in the context of judgment specifically. Bennett says: "From the premiss that we must handle the extended world in judgments about possible experience, what Kant infers is not that the extended world is not our ultimate topic but rather that we must handle our ultimate topic in judgments about possible experience." (Kant's Dialectic, p. 49) When we ask why the extended world must be handled in judgments about possible experience, we are in effect asking for the grounds of objective knowledge; Kant's answer to this question is to say that because the real grounds of the extended world are in principle unknowable - since to have such knowledge implies having knowledge of the inner nature of things which Kant thinks is unconditioned - the only alternative is to locate the grounds of the order of things in the world, in the nature of the knowing subject himself, or, in Bennett's case, in the nature of judgment.

5. See pp. 213-219 in Kemp Smith's Commentary.
6. MFNS: 475; p. 13n.
7. R. Walker in his recently published Kant makes out a case for regarding the concept of the transcendental object as a category, or, a pure concept derived from a category. The non-empirical conception of an object is, he states, "... simply the idea of a thing which exists independently of me and of all other perceivers. But like the concept of cause it can be called transcendental, for we cannot (Kant thinks) dispense with it if experience is to be possible. We may naturally ask why in that case he did not consider it a category; but it turns out that at one time he did, for in the Duisburg'sche Nachlass (c. 1775), where we can see the doctrine of the transcendental object developing, it is quite clearly this that Kant means by 'substance'. "But Walker goes on to say, mistakenly I think, that once we accept Kant's use of 'transcendental object' as the concept of a non-empirical object it becomes apparent that when Kant applies the term to noumena, he is simply using a category in its unschematized form, i.e. to transcend the limits of possible experience. What is puzzling about this is that one suspects that Walker thinks it is harmless to use unschematized categories and that such use is somehow cognitively different from using the term transcendental object to refer to noumena. But this is simply question-begging for the point is why Kant uses the concept of the transcendental object at all, whether it be as pure category or to refer to the object = X. Dressing up, as it were, the transcendental object in pure category clothing doesn't explain what is presumably, some kind of ontological posit on Kant's part, even if it is a purely hypothetical one. I discuss this in the pages that follow. For Walker's discussion, see Kant, p. 107

II Freedom and Reason: Ontology

1. J. Silber, 'The Ethical Significance of Kant's Religion' in Religion Within the Limits of Reason Alone, p. xcii.
2. Ibid., esp. pp. xcvii-ciii. The articles by Silber which have most influenced my thinking with respect to Kant's moral philosophy are given in the bibliography. The underlying conviction of Silber's work on Kant-and it is a conviction that I share - is that it must be shown how Kant can account for the heterogeneity of the formal and material elements of experience, all experience and not just that legislated by the categories of CPR, i.e. moral, cognitive, artistic and teleological experience. All these kinds of experience are structured by a relationship between matter and form which Kant's synthetic a priori emphasizes.
3. Ibid., p. xcix.
4. A.C. Ewing, Kant's Treatment of Causality, p. 201
5. D. Davidson, 'Mental Events', in Experience and Theory, p. 101.
6. Kant's Treatment of Causality, p. 220
7. The concepts of heteronomy and autonomy are central to Kant's argument in the Foundations of the Metaphysics of Morals but most important for my discussion of these concepts in this chapter is Book One of the Religion, esp. pp. 19, 40, 45n.
8. 'The Ethical Significance of Kant's Religion', in Religion, p. lxxxix.
- 8a. J. Hintikka, "Cogito, Ergo Sum: Inference or Performance?", in Descartes, ed. W. Doney; pp. 128-129.
9. 'The Ethical Significance of Kant's Religion' in Religion, pp. cxxviii - cxxxiv.
10. The relationship between Kant's theory of personality, the fulfillment or destruction of one's personality, and Kant's theory of the will (in moral struggle) is represented diagrammatically by Silber in Ibid., p. cxxvi. In brief, Kant claims that sustained heteronomous action results in the gradual diminution of autonomy and moral goodness since only autonomous action is morally good. The steady loss of moral goodness has a dispositional effect on the Willkür

whose originally good disposition is gradually transformed (by constantly subordinating its moral incentive - the Wille - to its non-moral ones) into an evil one. In all of this, Wille - the voice of the moral law - is still present in the form of the awareness of what the Willkür is doing. The Wille, however, becomes less and less effective as it is continuously ignored and finally becomes totally ineffective through disuse. At this point, the personality is non-existent and the individual is reduced to no more than an animal. Thus it can be seen that Kant's splendidly tailored and rigorous theory entails the fact that an evil disposition feeds on the continuous denial of the condition for personal fulfillment, indeed, as Silber points out, a person's evil "consists in his abandonment of the conditions of free personal fulfillment in favour of the adoption of the conditions of his fulfillment as a natural creature of desire." (Ibid., cxxiv)

11. ID, No. 5 - No. 8.
12. 'The Ethical Significance of Kant's Religion', in Religion, p. xcii.
13. Ibid., pp. xcix - ciii., cf. L.W. Beck's suggestion to the same effect in his A Commentary on Kant's 'Critique of Practical Reason, pp. 191 - 194.
14. Ibid., p. ci.
15. Heidegger's two works concerning Kant: Kant and the Problem of Metaphysics and What is a Thing?
16. What is a Thing?, p. 146
17. In both works on Kant, Heidegger attempts to demonstrate the priority of intuition over thought in Kant's formulation of his theory of human knowledge. The clearest presentation of his arguments for this position, which is central to his entire interpretation of Kant, can be found in What is a Thing?, pp. 140 - 147.
18. Kant and the Problem of Metaphysics, p. 123
19. What is a Thing?, p. 243

Chapter III Teleology and Living Things: Ontology

1. A point appreciated by R. Walker in Kant, p. 167
2. See especially A. Woodfield's Teleology, pp. 26-33. Woodfield's analysis of teleological descriptions within the context of the problem of objectivity has proven very useful in my attempt to characterize the nature of Kant's problem of recognizing the objectivity of objects not legislated by the categories, in the present case, organisms.
3. Ibid; p. 26.
4. Ibid; pp. 31-32.
5. Ibid; p. 32.
6. Ibid; p. 32. For a full presentation of Woodfield's attempt to show that teleological descriptions are objective, i.e. do describe objective features of the world, see pp. 124-140 of Teleology.
7. J.D. McFarland in Kant's Concept of Teleology, p. 139.
8. Without metabolic processes living things would quite simply not be the kind of things they are. In an essay in The Phenomenon of Life, p. 83, Jonas comments on this essential feature of organisms: "Its can is a must, since its execution is identical with its being. It can, but it cannot cease to do what it can without ceasing to be."
9. See especially p. 493 and p. 567 of Metaphysics and the Philosophy of Science.
10. Buchdahl, who supports the interpretation just given, states: "For, if we read on, we soon find that as usual Kant couples the notion of 'construction' with that of 'possibility'. His main concern is that of demonstrating the 'possibility' of the phenomenon of 'communication of motion', in the course of which the law of action and reaction is likewise derived..." (ibid; p. 680)
11. McFarland; Kant's Concept of Teleology, p. 138
12. McFarland; ibid, p. 109 and p. 119 for the quotation immediately following.
13. Metaphysics and the Philosophy of Science, p. 681. I follow Buchdahl here and shall, in Part II, make further use of the notion of supplying a foundation for laws.

Part Two

Leibnizian Realism, Science and the Perspective  
of Ontology

Chapter IV The Ontology of Leibnizian Realism: Toward  
the Unconditioned.

1. J. Silber, 'The Context of Kant's Ethical Thought' Part II; Philosophical Quarterly (1959); p. 317
2. What is a Thing?; p. 92
3. Metaphysics and the Philosophy of Science; p.467
4. Leibniz's theory of space is most clearly presented in the 'Fifth Letter' to Clark and I have limited my textual resources to it and the Leibniz-Clarke correspondence as a whole. See 'The Controversy Between Leibniz and Clark' in Loemker; pp. 675-721. For my later remarks with respect to Leibniz's conception of place, especially the notion that space is a logical construction out of the aggregate of places, see esp. Loemker, pp. 702-706. Leibniz does not only advocate acceptance of the relational theory of space; he argues against the views that space is substance or space is a property of substance (Loemker, pp. 700-701). I discuss Leibniz's theory of space with respect to the notion of place below; here I present a condensed version of Leibniz's actual argument on behalf of the theory that space is relational. Suppose bodies C, E, F, and G to be coexistents that do not change their position relative to each other. Suppose further that a body A coexistent with C, E, F and G does change its position relative to these. Again suppose that body B acquires the position relative to C, E, F and G formerly held by A; Leibniz describes this relation as 'B's being in the same place as A was'. Place is that which is common to A and B when the relation of coexistence of A and B with C, E, F and G is identical. It would appear that in this analysis place is reduced to a logical construct, a construction of the 'relations of coexistence'. It should be noted that Leibniz must suppose that C, E, F and G constitute a fixed system from one moment to the next, so that when the relations of coexistence of A and B to the fixed system C, E, F and G is the same, the relation can be defined as the relation of 'occupying the same place', and this seems to amount to a definition of place as a (quasi) logical construction out of similar relations of coexistence amongst bodies. Space then is a logical construction out of places, and can

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be said to be ideal in that it is a mapping of the order of coexisting things; this however, could be misleading especially when aligned with the common belief that Leibniz denies the reality of space. What Leibniz denies is that space is an absolute existent, a substance within which things move and can be said to deny the absolute reality of space (space as a container).

5. See B. Russell's Philosophy of Leibniz for a full discussion of this point; pp. 118-119.
6. Metaphysics and the Philosophy of Science; pp. 406-407.
7. Ibid; p. 445.
8. M.J. Scott-Taggart, 'The Ptolemaic Counter - Revolution' in Kant's Theory of Knowledge, edited by L.W. Beck (1974).
9. ID; No. 16.
10. 'The Ptolemaic Counter-Revolution'; pp. 16-17.
11. Ibid; p. 19
12. W.H. Walsh, Kant's Criticism of Metaphysics; pp. 28-33. See also sections No. 17 and No. 29 for a full discussion of Kant's theory of the world as a world of appearances.
13. Ibid; p. 29
14. Ibid; See Section No. 17, pp. 91-93 for Walsh's arguments in defense of this position.
15. Ralph C.S. Walker, Kant; p. 174
16. Kant's stated views on, and objections to, the Leibnizian philosophy are provided for the most part in the following two texts: the section of CPR entitled 'Amphiboly of the Concepts of Reflection' (= 'Amphiboly') and 'On a Discovery According to which Any New Critique of Pure Reason Has Been Made Superfluous by an Earlier One' (= 'On a Discovery' or OAD) in The Kant-Eberhard Controversy; Henry E. Allison.

Support for my contention that it is not the case that according to Leibniz's theory of knowledge, sensory experience is merely confused thought, can be provided by showing that Leibniz rejected Locke's

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alleged identification of 'image' with 'idea'. The following passages from the New Essays Concerning Human Understanding (= New Essays) make this quite clear: Leibniz speaks of "how necessary it is to distinguish images from exact ideas, which consist in definitions." (BK.II, Ch. IX, sec. No. 8); In (Bk. II, Ch. XXIX, sec. No. 13) of the same work, Leibniz soon resorts to his customary and unfortunate habit of using 'idea' when he must mean 'image', for Leibniz is here criticizing Locke for just this confusion: "However this clear image, or this feeling which we may have of a regular decagon or of a weight of ninety-nine pounds, consists only in a confused idea (sic!), since it is of no use in discovering the nature and the properties of this weight or of the regular decagon, which requires a distinct idea. And this example served to show better the difference between ideas, or rather that between idea and image." And finally, "It is the same qui pro quo of the image for the idea which I am astonished to see so confused." (Bk. II, Ch. XXIX, sec. No. 16)

17. Leibniz's article 'Meditations on Knowledge, Truth and Ideas' (=MKTII), in Loemker, pp. 291-295; R. McRae's statement concerning Leibniz's article, in Leibniz: Perception, Apperception and Thought; p.3. Reference to Loemker's collection of Leibniz's writings in the body of this essay is with L, followed by the page number, and to P. Weiner's collection of Leibniz's writings with W followed by the page number. In his recently published book, McRae attempts to piece together a theory of knowledge from Leibniz's unsystematic presentation of three central notions: perception, thought and the relation between the understanding and sense with Leibniz's concept of apperception always kept at the center of the discussion. This is the first effort to confront Leibniz's notorious views on epistemological topics with a measure of thoroughness they deserve. The book's greatest merit is that it demonstrates how misleading, with respect to Leibniz's epistemological views, is the conception of Leibniz as the creator of the fantasy world of the monads. Indeed, in the final chapter of Leibniz: Perception, Apperception and Thought, McRae argues that (1) the accepted view that sense perception is confused thought, for Leibniz, does not bear close scrutiny: "Leibniz's scale of ideas from obscure to clear, and from confused to distinct, is throughout knowledge of essence or possibility, and comes under the heading 'thought', although

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sanctioned by distinct perception of the existent, either immediately in the case of the merely clear but confused idea, or in the end in the case of the relatively distinct or incompletely analyzed ideas. Distinct perceptions, feelings, or images, or what come under the heading 'sense', are not part of this scale. Sense perception is not confused thought (emphasis mine), even although it never exists apart from the clear, but confused idea of possibility." (p. 129) This close detective work of Leibniz's text, when aligned with my argument, given in the next few pages, to the effect that the perception and conception were for Leibniz, on philosophical grounds, different kinds of cognitive capacities affords a strong case for re-thinking the received opinion that for Leibniz the arch-rationalist, sense experience played no role in the overall cognitive situation. Finally, McRae makes an attempt to show that (2) far from regarding the senses as having at best a derivative role in knowledge and thought, Leibniz argues that the senses are necessary to thought in that the senses, which are, according to Leibniz, by nature intentional, are responsible for the intentionality of thought: "Thought begins with the apperception or recognition of sensory images as expressing, and without this consciousness of them as expressing there would be for thought no objects, not even the ego, for to be conscious of the ego is to be conscious of it as expressing." May it not be the case that where others had simply assumed that the senses make our awareness of the world possible, Leibniz thought it required an explanation? "Descartes and Locke could do no better than appeal to the involuntary nature of sense experience which leads the mind to infer the existence of an external cause of its experience. Leibniz finds the reason in the intrinsically intentional nature of sensation, such that to be aware of perceptions or sensations at all is to be aware of them as expressing what lies beyond the private states of the self." (this and previous quotation; p. 130).

- 18. Kant's erroneous denial of Eberhard's charge to the effect that he (Kant) claimed the philosophy of Leibniz and Wolffe had falsified the concept of sensibility and appearance, found in 'Kant's Letters to Reinhold' (Appendix A, OAD, p. 170).
- 19. In Kant's Theory of Freedom: A Metaphysical Inquiry (1979); pp. 37-39. Hoffman doesn't construe the categories themselves as supplying a possible semantics for the concept of an object but the

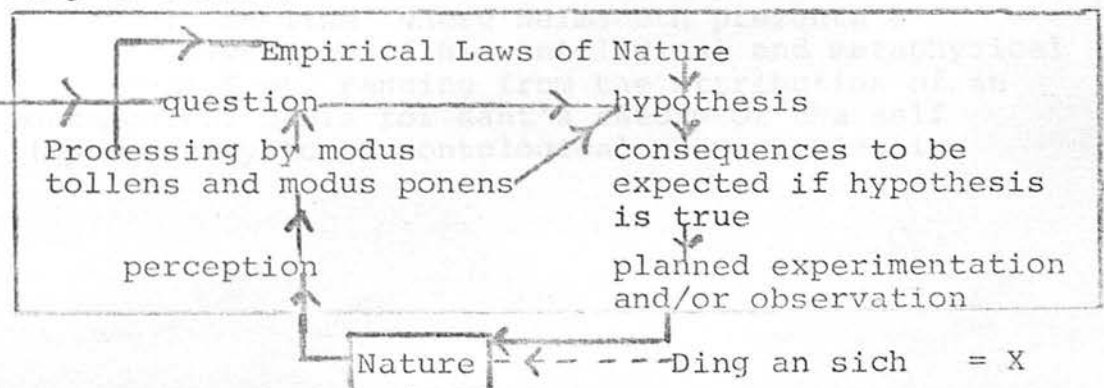
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schemata as providing a set of semantical rules of reference to render the categorial concepts of objectively valid; reason also requires a semantics for its activities both in the theoretical and speculative domains. While Hoffman's application of the notion of a semantics for the understanding and reason is different than mine, the principle is the same - using semantics to open up a domain (Hoffman's 'dimension' - p. 38) within which it is then possible to import a context of meaning - thus legislating for the kind of entities falling within the extension of the domain in question.

Chapter V Kant's Philosophy of Science and the Ideas of Reason: The Unconditioned.

1. Gordon G. Brittan, Jr., Kant's Theory of Science, p. 184. See also Buchdahl's discussion of the relationship between understanding and reason in the context of a general causal principle and causal laws with some causal sequence as an instance of them; for example, Buchdahl states: "Consequently, from the fact that the possibility of an empirical sequence (as part of 'nature') presupposes the abstract concept of cause, we cannot infer that such a sequence is an instance (even in principle) of some causal law or other." (Metaphysics and the Philosophy of Science; pp. 500-501)
2. Peter Krausser; 'Kant's Theory of the Structure of Empirical Scientific Inquiry and Two Implied Postulates Regarding Things In Themselves', in Kant's Theory of Knowledge edited by L.W. Beck; pp. 159-165.
3. I here reproduce the graph drawn by Krausser to represent Kant's theory of empirical scientific inquiry and especially, the two possible sources of input into the overall learning situation. Krausser's graph is split into two halves with the upper half indicating the connection of the Critique of Pure Reason as a whole with the theory of empirical inquiry in particular. As this part of the graph is not relevant in any important sense in the present context, I shall only reproduce the lower part. This part of the graph displays the dynamics of Kant's theory of empirical scientific inquiry or the dynamics of reason if such empirical inquiry is to be possible. The crucial point for my discussion is the necessity that there be a separate and genuine new source of information besides reason's contribution otherwise experienced nature would literally be a construct of reason, i.e. we would have no independent standard of empirical truth and falsehood. Hence, the necessity of postulating things in themselves as the source of previously unknown information regarding nature and, as I explain in the text, things in themselves with some form of law-likeness of their own, independent of the understanding or reason.

Needs and aims of Reason



Chapter V Kant's Philosophy of Science and the Ideas of Reason: The Unconditioned.

4. Ibid; p. 163
5. Ibid; p. 164
6. Cf. B165; "Nature, considered merely as nature in general, is dependent upon these categories as the original grounds of its necessary conformity to law (*natura formaliter spectata*)."
7. For further discussion of and elaboration on, the derivation of the ideas of reason or regulative principles of reason, see A682-A687 = B710-B714.
8. W.H. Walsh; Kant's Criticism of Metaphysics; Walsh states: "But it should be emphasized that Kant's motive in mounting the attack is not just to discredit a form of speculation which he saw as equally seductive and unprofitable. It is also to provide an indirect proof for his own thesis of transcendental idealism, a thesis which is central in his attempt to show that the sphere of knowledge is limited to possible experience..." (p.197) And again, "To solve the problem of the antinomies we must therefore recognize that the world of things in space and time, the world which is discussed by Rational Cosmologists, has a peculiar status: it exists not absolutely but in essential relation to mind, which means in effect only so far as it is constructed or constituted in judgment." (p.199)
9. For another statement of what Kant considered to be the 'true view' of Leibniz, see 'On a Discovery' (203): "Hence, if Leibniz at times expressed himself in such a manner that his doctrine of simple being can be interpreted as implying that matter is a composite thereof, it is nonetheless fairer to him, as long as it is reconcilable with his express teachings, to understand him to mean by the simple not a part of matter but the non-sensible, and to us fully unknown ground of the appearance which we name matter (which may be a simple being even if the matter which constitutes the appearance is composite)."
10. Especially in the work of Heinz Heimsoeth; see 'Metaphysical Motives in the Development of Critical Idealism' where Heimsoeth presents a condensed version of his ontological and metaphysical reading of Kant, ranging from the attribution of an ontological basis for Kant's theory of the self (spontaneity) to the ontological characterization

Chapter V Kant's Philosophy of Science and the Ideas of Reason: The Unconditioned.

with respect to substances causally interacting in space in Kant's critical philosophy. It is worth noting Heimsoeth's remark to the effect that "...Kant himself later regarded his theory of space and time as a consequence of what Leibniz meant...." (p. 182) And with regard to the Second Antinomy, Heimsoeth states: "In the Critique of Pure Reason the second antinomy battles against the fact that space resolves all simple substances into an infinitely divisible continuum. Its intention is to ground the ontological possibility of simple things that cannot be sought in space itself." (p.186) 'Metaphysical Motives in the Development of Critical Idealism' in Kant: Disputed Questions; edited by Moltke S. Gram; pp. 159-199.

Chapter VI Realism: Matter and the Ontology of Forces

1. In Kant: Philosophical Correspondence, 1759-1799; pp. 139-140.
2. Isaac Newton, Opticks, 4th edition, 1931; p.400
3. Isaac Newton, Principia, vol. II, Systems of the World (Cajori edition), 1966; pp. 398-399.
4. Metaphysics and the Philosophy of Science; p. 97
5. Metaphysics and the Philosophy of Science; pp. 393-405. It is a mistake to dismiss Leibniz's picture of the world as composed of monads each mirroring the world from its own privileged vantage point, as an outrageous fantasy. Leibniz thought (and argued accordingly) that this picture was logically required to explain phenomena and that such a picture was consistent with the apparent order revealed at the phenomenal level. Buchdahl, in concluding his discussion of Leibniz's use of analogy, points to the ambivalence which is the result of the Leibniz's heavy reliance upon analogy - ambivalence and strain - but never nonsense or inconsistency: "The problem of the relation between the empirical analogues and the metaphysical positions, the pull between 'identity and difference', apparently so neatly resolved through the concept of the analogical relationship, with its overtones of 'suggesting without proving', never quite disappears from the Leibnizian scene. It manifests itself in a certain vacillation, Leibniz sometimes stressing the immunity of his metaphysics from physical principles of enquiry and even its results, sometimes the great relevance of the latter for the former...." (p. 405)

In this connection, G. Brittan, Jr., in his attempted reconstruction of a realist interpretation of Kant's theory of science, presents a three-pronged definition of the problematic status of the objective reality of physics, i.e. of the reality of forces, and the central aspect of this problem Brittan identifies as the need to show the real possibility of the concept of matter. This involves, from Kant's perspective, simply showing that the concept of matter has application. Kant is concerned with demonstrating the real possibility of forces in this way because, in part, say Brittan, the claims of Descartes and Berkeley (and the traditions they are representative of - rationalism and empiricism) had to be defeated for their central idealism, with respect to physics, amounts to a denial of the possibility of a realist or materialist interpretation of it.

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Brittan's analysis or reconstruction of the problem-situation which supplies the background against which Kant might have possibly written the MFNS suffers from one, not insignificant flaw, to wit, he fails to confront the full implications of Kant's transcendental idealism (both for ontology and science) especially with respect to Kant's doctrine of matter. It must be shown why Kant should not be placed in the idealist camp if transcendental idealism is accepted within the context of science. It is incumbent upon Brittan to show that this is not the case since he accepts the feasibility of Kant's overall epistemological programme especially the prima facie plausibility of the legitimacy of the transcendental idealist - empirical realist distinction. (see p. 130 of Kant's Theory of Science). The point I want to make with respect to Leibniz is that Brittan notes, like Buchdahl, the difficulty posed by Leibniz's philosophical position, i.e. Leibniz is not really an idealist because he takes the reality of forces as fundamental: "Leibniz's view is complex in this respect and not so easily characterized. There is sense in which he is an "idealist" and yet takes the reality of forces as fundamental." (ibid; p. 129n)

6. In A Theory of Natural Philosophy, M.I.T. Press, pp. 24-25 (Article 18), 1966. This proof of Boscovich's was first brought to my attention in R. Harré's The Principles of Scientific Thinking, pp. 286-287.
7. For a proof of the Law of Continuity, see Harré's embellished version of Boscovich's original proof; ibid pp. 287-289 and for further discussion of the importance of the law see pp. 289-293.
8. Ibid; pp. 305-307.
9. Mary Hesse, Forces and Fields; p. 177
10. Ibid; p. 177
11. Ibid; p. 177
12. This particular example is Maxwell's; for a discussion of the concept of continuous action through a medium (aether) see Forces and Fields, pp. 206-222.
13. See note 7 above.
14. J. Bennett, Kant's Dialectic; 1974, ch. 9.

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15. W. Sellars, Science, Perception and Reality; 1963 pp. 120-122.
16. L.W. Beck, A Commentary on Kant's 'Critique of Practical Reason'; 1960, pp. 194-195.
17. Harré, The Principles of Scientific Thinking, from where this suggested analysis of powers is derived; see esp. p. 308.
18. See the layout of the Categories, Principles and Definitions of Matter, on separate page.
19. Heidegger, What is a Thing?; pp. 212-222.
20. Ibid; P. 213
21. Ibid; p. 219
22. Harré, Principles of Scientific Thinking, pp. 296-314. For an alternative account of ontologically fundamental entities in terms of powers, one which might conceivably be appropriate to my depiction of the world as containing a set of ontologically unconditioned entities which 'ground' the world 'from within', see R. Bhaskar's A Realist Theory of Science, Appendix, pp. 229-250.
23. Harré, The Principles of Scientific Thinking; p.302

Layout of the Categories, Principles and the Definitions of Matter: From the Concept of an Object in General to the Concept of an Object as a Physical Thing.

- Axioms (Intuition)..... (Quantity)..... Phoronomy = moveable in space = matter (content)
- Anticipations (Sense Perceptions).....(Quality).....Dynamics = occupancy of space = matter (form)
- Analogies (Experience) .....(relation).....Mechanics = interaction of opposite forces = matter
- Postulates (Empirical Thought) .....(Modality).....Phenomenology = object of experience = matter

To complete the story begun by the categories - the initiation of a semantics for the concept of an object in general - we must progress through the stages of the filling in (by science) of the concept of an object. As we progress, we find the need to differentiate more and more categorial frameworks with which to supply different domains of objects, i.e. different kinds of things in the world, with their own semantics. To give a domain of objects in this sense, a semantics, is just to acknowledge the existence of another kind of thing in the world, and thus ontology can be seen to be inseparable from semantics. The movement here is from the categories viewed from the perspective of knowledge to the categories viewed from the perspective of the unconditioned, i.e. the categories as ontological.

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