

THE INTERNATIONAL SOCIETY FOR METAPHYSICS
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THE NATURE OF METAPHYSICAL KNOWLEDGE

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INTRODUCTION

The preceding volumes in this series--devoted respectively to Person and Nature, Person and Society and Person and God¹--progressively delineated the basic issues of human and, indeed, of all existence. They took work on these issues beyond the horizon of the physical and social sciences, as well as beyond such philosophical methods as those of pragmatism and positivism.

In this process the questions raised regarding the method of metaphysics--not unknown to Aristotle and Kant--were seen to be in urgent need of attention: Is metaphysics a discipline; if so, what are its requirements; and how can these be met?

Answers to such questions are needed in order that metaphysics be able effectively to assimilate recent developments in human reflection, to evolve a rigor and insight in proportion to its task, and to plan its research agenda for the proximate future.

With this in view the present volume is divided into two parts. The first concerns approaches and methods for metaphysics: Is metaphysics a discipline; if so, what is its relation to truth, justification and the architectonic of systems? The second part concerns the implications of such a conception of the nature and work of metaphysics for its relation to science, to ethics and to human history.

Upon completion of its series of studies on the person, the International Society for Metaphysics (ISM) undertook a series of investigations regarding society in terms of its issues of unity, truth and justice, and the good. Further, having studied intensively both person and society it seemed appropriate to extend the investigation to the field of culture and cultural heritage understood as personal creativity in community and in history. In this manner the work of the ISM has constituted a cohesive and coordinated investigation of metaphysics as a living discipline in our day.

NOTE

1. George F. McLean and Hugo Meynell, eds. (Washington: Wniversity Press of America and The International Society for Metaphysics, 1988).

CHAPTER I
METAPHYSICS AS A DISCIPLINE: ITS REQUIREMENTS
IVOR LECLERC

INTRODUCTION: THE ISSUE

The issue of the requirements for metaphysics as a discipline faces us today with particular urgency. It is not primarily or merely because metaphysics in our time is strongly under positivistic and other attack. This issue must be given primary attention for the sake of the enterprise of metaphysics itself if it is to achieve the efficacy which, in the context of present-day thought, is required of it and indeed necessitated by virtue of its fundamental position among fields of inquiry.

This issue has always had to be faced anew in times of great changes of thought, because metaphysical fundamentals are ineluctably involved in them. A change of this order occurred in the late Hellenistic age as a result of religious developments, which brought theology into primacy for the intelligibility of those developments, and theology indispensably required metaphysics in the accomplishment of this task. Another such change occurred in the seventeenth century with the momentous development of modern science on the basis of a radically new conception of the physical, for the proper intelligibility of which metaphysics was necessarily involved. In this century once again a change of thought of this magnitude is occurring consequent upon scientific developments which have eventuated in conceptions of the physical profoundly divergent from those of the preceding three centuries. The role of metaphysics in respect of the understanding of the nature of the physical is now again as indispensably requisite as it was in the seventeenth century.

In these times of great change of thought it is not only that metaphysical fundamentals are involved, but also that the very conception of metaphysics itself--of its nature as an inquiry, of its object and of its method--is basically affected. The recognition of this is important from the point of view of the problem of the requirements for metaphysics as a discipline, for it is not possible to deal with this problem in abstraction or in disconnection from the question of the nature of metaphysics, and this question in turn cannot be considered apart from the issue of the relation of metaphysics to the other disciplines of inquiry.

The significance of that relation is evidenced in the very name "metaphysics": the preposition with the accusative connotes sequence or succession, a going beyond, and in this name indicates an inquiry of peculiar width, its object extending beyond, and thus being general to, that of every special inquiry -- the term itself originated after Aristotle under the influence of the prominence in Aristotle's work of the inquiry into physis, but the term has been correctly understood in the tradition as fully general, i.e. as going beyond every special inquiry, to embrace all which is.

But the connection with the special inquiries is vital to metaphysics, and in different ages different special inquiries have received pre-eminent emphasis in respect of this connection. Thus in the middle ages it was theology which had this prominence, and since the seventeenth century it has been what is usually called modern science which has enjoyed this pre-eminence. Accordingly in the medieval period the conception of metaphysics was fundamentally affected by theology, and since the seventeenth century the conception of metaphysics has been as deeply

affected by modern science. We today continue in this respect under the influence of modern science, as we shall see in some detail later.

METAPHYSICS AND THE PROBLEM OF KNOWLEDGE

As an enterprise of inquiry metaphysics is an endeavour to seek and obtain knowledge. The same of course holds for every other inquiry: each aims at knowledge. Thus the concept of "knowledge" is implicated in every inquiry, and is accordingly basic and general to all inquiry. Because it is general, the question or issue of what is "knowledge" is one which goes beyond each of the special inquiries and cannot be the concern of any one of them. It has therefore to be the concern of that inquiry whose object goes beyond all special inquiries, namely metaphysics.

The issue of what is "knowledge", of what is meant by the term, is neither self-evident nor is it one which can be settled antecedently to all inquiry. On the contrary, it has necessarily itself to be an object of inquiry. Thus metaphysics has as a primary task the inquiry into the problem of what is "knowledge." However, this cannot be an inquiry prior to and in disconnection from all the other issues of metaphysical inquiry; these issues are necessarily all interrelated, and the solution to the issue of knowledge must emerge as part of a whole solution to the combined metaphysical issues. This means that the conception of "knowledge" which is the outcome of the inquiry into the issue of what is knowledge, must be consistent with that involved in all the rest of metaphysical inquiry, as well as with the conception of knowledge involved in the special inquiries. We cannot here enter into details of the long history of the metaphysics of knowledge; we shall concentrate on the outcome of historical developments specially relevant to our present situation.

Medieval thinkers inherited from Greek philosophy the conception that the term "knowledge" necessarily connotes and entails certainty and truth. This conception was taken over and maintained in the seventeenth century and on through the eighteenth--as is clear in Hume and Kant--and the nineteenth. This conception was by no means restricted to philosophers and with regard to philosophy. In the seventeenth century the inquiry into nature was referred to both as "natural philosophy" and "natural science--the term *scientia*, "science", meaning "knowledge". The latter designation came increasingly to prevail as the conviction grew that the new empirico-mathematical method was that which demonstrably led to certainty and truth in the inquiry into nature, i.e. that it was that which led to genuine or real "knowledge", *scientia*. This genuine science or knowledge stood in contrast to the putative knowledge of philosophy and metaphysics particularly. Philosophy consequently came to be extruded from concern with the realm of nature and relegated to that of mind and the moral alone. With this division effected, the inappropriateness of the phrase "natural science" came increasingly to be felt--since the science of nature was in fact the only genuine science, i.e. knowledge in the strict sense of true and certain--so the phrase gave place in usage, from the nineteenth century on, to the single word "science."¹ The important point in this is that the basic conception of "knowledge" as entailing certainty and truth had been taken over by "modern science", by scientists themselves as by theorists of science--the position of the latter being epitomized in the doctrine of "positivism", i.e. that what is "positive", "sure", "certain", and thus constituting genuine knowledge, is that which is attained by the empirical method of modern science.

In this century scientific developments have led to a change in the conception of "knowledge" which is indeed far-reaching. Since the seventeenth century it had been held that the "knowledge" sought by the new empirico-mathematical science was constituted by the

discovery of the "laws of nature", epitomized by the laws of motion--it was in terms of these that nature was understood. These laws were what pertained with complete generality throughout nature, and as such were constant and unvarying. Accordingly when they were discovered one could be assured of certainty and truth, i.e. "knowledge" of nature. What has happened in this century is an increasing wavering in respect of the absoluteness of natural law. After the seventeenth century the earlier conception of natural law as divinely imposed was gradually replaced by the conception of natural law as empirical description. The crucial change came in this century when the previously supposed absoluteness of the Newtonian laws of motion was found to consist in statistical regularities pertaining to vast numbers of entities. After that the conception of scientific law in general as being statistical in character came to be increasingly accepted.

This abandonment of absoluteness pertaining to scientific laws entailed that these laws are merely probabilities. This implies that the "knowledge" which science seeks and attains is not "knowledge" in the earlier sense of certainty. This means that "scientific knowledge" today has come to have a new sense in which "probability" has replaced "certainty". Does it follow from this that present-day developments have landed thought in a contradiction in respect of the conception of "knowledge"-- the contradiction which Hume had sought to avoid by making a sharp distinction between "knowledge" and "probability"? It is evident that we have today run into a profound difficulty in respect of the conception of "knowledge", and this is one which affects not only so-called "science" but all inquiry, including philosophy. This means that philosophy today is faced with a task of the first order of importance, for all inquiry must be dependent upon philosophy in this respect. What is accordingly requisite is a renewed inquiry into the metaphysics of knowledge.

THE ISSUE OF METHOD IN METAPHYSICS

The problem of method or procedure in this inquiry immediately comes into prominence, and is indeed crucial in a respect in which this problem had not been so in the beginning of the modern period, nor indeed in the medieval epoch. In both of them fundamental presuppositions about the conception of "knowledge", of the essential meaning of the concept, had been taken over from the respective antecedent period. Whereas today it is precisely those fundamental presuppositions which have been revealed as somehow inadequate and which must now accordingly be subject to inquiry. Certainly in both those epochs the conception of "knowledge" had been rethought in terms of the general metaphysical schemes which had respectively been developed. This, for example, was what had been Descartes' concern in his *Regulae* (1628) and his *Discourse on the Method of Rightly Conducting One's Reason and Seeking for Truth in the Sciences* (1637), which were written after the essentials of his metaphysics of nature had become clear to him. But in both of those epochs there had been the inheritance of the presupposition of "knowledge" as connoting and entailing certainty, a presupposition which was not brought into question. The conception of the method of metaphysical inquiry is closely bound up with the conception of knowledge. This is clearly exemplified in the two antecedent epochs which we have brought into consideration above. In the medieval one the earliest and, for most of the period, the most influential metaphysics adopted by theology had been the Neoplatonic. In this scheme it was held that knowledge could not have the characteristic of certainty and truth unless the conditions of knowledge, that in terms of which knowledge was possible at all, were constant and unchanging. These necessary conditions of knowledge, in this metaphysical scheme, were

constituted by the exemplar forms, the requisite constancy of which was grounded in their derivation from God, the ultimate source of everything and thus also of that in terms of which there was knowledge. This was the metaphysics at the basis of Augustine's doctrine of "illumination". It was essentially this doctrine which was carried over in the seventeenth century by thinkers such as Descartes in their theory of "innate ideas" as that in terms of which there is knowledge.

It was entailed in this metaphysical scheme, as Descartes, Spinoza and others clearly saw, that the method of inquiry, more particularly the method of metaphysical inquiry, had to be a deductive procedure from ultimate certain premises. This determined the requirements of metaphysics as a discipline. The prime requirement was to find the ultimate premises, and this was possible only through an intuitive perception, their identity as ultimate and certain being recognizable by their clarity and distinctness. This metaphysics of knowledge seemed in the seventeenth century to be perfectly and admirably consistent with the new science which was fundamentally mathematical. Descartes indeed conceived thought *per se*, in so far as it proceeded soundly by deduction from ultimate premises, as essentially mathematical; this pertained particularly to philosophical, and especially metaphysical, thought in respect of which he developed the conception of a *mathesis universalis*, a conception which was taken over in its essentials by Spinoza and Leibniz-- and which inspired the development of mathematical or symbolic logic in the nineteenth and twentieth centuries.

The credibility of this metaphysics of knowledge was undermined by the increasing recognition in the eighteenth century of the empirical component in scientific inquiry, and that in respect of this the procedure of scientific inquiry was inductive and not deductive at all. This situation generated a momentous crisis in philosophical thought, particularly keenly appreciated by Hume: proceeding deductively, as in logic and mathematics, evidently led to conclusions which were certain, thereby fulfilling the claim to knowledge. Such certainty, and thus knowledge in the strict sense was, on the other hand, not possible by the empirical procedure of science, which could at most give probability. Kant came to see that philosophy was faced with the urgent necessity of re-thinking the conception of "knowledge," that unless a more satisfactory conception were attainable the entire spectacular movement of modern science was doomed to be recognized as not "science," i.e., "knowledge" in the strict sense, at all.

Kant's diagnosis of this crisis was that it was the outcome of an erroneous fundamental presupposition with respect to knowledge. As he put in the preface to the second edition of his *Critique of Pure Reason*²: "Hitherto it has been assumed that all our knowledge must conform to objects". What was necessary to resolve the crisis, Kant held, was a complete reorientation, in which the very opposite assumption had to be adopted, namely that "objects must conform to our knowledge", for only on this assumption would it "be possible to have knowledge of objects a priori, determining something in regard to them prior to their being given". His point is that knowledge, in the strict sense, of objects is not possible at all if it be a posteriori--that gives probability and not knowledge; hence knowledge must essentially be a priori. Only in this way could be secured, what Kant accepted from the tradition, that "knowledge" connoted and entailed certainty. Indeed he considerably enhanced this requirement by insisting on apodeictic certainty as the *sine qua non* of knowledge: "Only that whose certainty can be called apodeictic can be called science proper; cognition that can contain merely empirical certainty is only improperly called science."³ This held particularly for scientific knowledge of nature, since for it to be "science" or "knowledge" in the strict sense it had to consist in an understanding of nature in

terms of "universal law", and there could not truly be such law if it were merely empirically derived, i.e. a posteriori.

The Kantian reorientation turned on a reassessment of the "object". Traditionally the object had typically been identified with what was taken to be the physical being. Kant himself had done so in the physical monadology of his pre-critical period. It is this identification which Kant abandoned. If there were to be knowledge in the strict sense, then that identification of object known with physical thing-in-itself would have to be rejected, for only by that rejection would it be possible to secure the requirement of knowledge as a priori.

What was necessary was that the object in knowledge be determined by the ultimate conditions of knowledge, by that in terms of which there is knowledge at all, and this must be grounded in the knowing mind. To know necessarily presupposed ultimate categories in terms of which there is understanding. Traditionally these had been regarded as derivative from God; Kant held them to be grounded in the very structure of the mind as capable of knowing. But that alone, as was clear from Descartes' philosophy, was not sufficient for knowledge of the physical. Knowledge of the physical demanded an empirical component, but that seemed necessarily to entail the a posteriori. Further, the physical seemed to be essentially spatio-temporal, i.e. involving in itself a spatial and temporal structure, also cognizable only a posteriori. Carrying through the seventeenth-century development which had removed from the physical the qualitative sensory features, locating these instead in the experiencing subject, Kant took the radical step of removing from the physical also the spatio-temporal, which had seemed absolutely intrinsic to it, assigning this too to the experiencing subject, as the a priori form of its perception--this was Kant's crucial innovation. Thus the physical thing-in-itself was left deprived of all features in terms of which it could be a known object. Instead in this new doctrine the known object was revealed to be a synthetic product of the mind's activity of knowing. This meant that the physical thing-in-itself was beyond knowledge, unknowable.

This revision of the conception of knowledge had profound consequences for the conception of the nature of metaphysics, of its object and of its method. Traditionally the ultimate object of metaphysics had been "what is", in the strict sense that "what is" per se was the object, and as such was known. That is, in this view metaphysical knowledge had to conform to and be determined by "what is" as object. It followed from the conception of knowledge consequent upon Kant's reorientation that "what is" per se could not be the object of metaphysical knowledge. What was thus requisite for him was a rethinking of the nature of metaphysics as a discipline productive of genuine knowledge. Since the inquiry into knowledge is an inquiry which necessarily transcends all special inquiries it must belong to metaphysics. For Kant the inquiry into knowledge became the primary and essential concern and aim of metaphysics. That is, for him the object of metaphysics became knowledge per se. This then determined the requirements for metaphysics as a discipline. For Kant the primary task of metaphysics had to be a "transcendental critique" of knowledge, in other words an inquiry into the ultimate conditions a priori in terms of which there is knowledge. This meant that it had to be an inquiry into thinking per se as productive of knowledge, into the structure of thinking, and thus into the ultimate unconditioned grounds and sources of knowledge. The determinations regarding knowledge thus arrived at accordingly have a necessary priority to all other branches of metaphysics, such as the metaphysics of nature and the metaphysics of morals, and must be presupposed by these if these are to be accepted at all as constituting genuine knowledge. This means that upon the basis of these determinations respecting the ultimate conditions of knowledge it is then possible validly to proceed to the determination of the requisites of, e.g. scientific knowledge of nature--such as

what is meant by "nature," by "natural law," etc.--and to the determination of the nature of mathematics--this, according to Kant, being crucial since mathematics is indispensable to the science, in the strict sense, of nature.

Kant's transcendental inquiry led him to the recognition, on the one hand, of certain pure or a priori concepts or categories as the ultimates in terms of which there is understanding, from which derive certain ideas as principles of reason; and on the other hand, since knowledge is of natural things, to certain pure or a priori forms of sensibility as necessary for there to be experience of natural things. It will not be requisite for our purposes to enter into further details of this doctrine.

The question has now to be raised respecting the method of this transcendental inquiry or metaphysics, and of its justification. Kant is quite explicit that he found his categories of the understanding by an examination of judgment; they were what he saw to be entailed in the logical forms of judgment. This means that his transcendental inquiry rested upon the presupposition of judgment as the fundamental act of the mind, comprising within it all other acts of the mind--again he is quite explicit about this.⁴ The point which is significant here is that this is a presupposition of his inquiry. What is more, his inquiry involves some further presuppositions, namely those of certain "faculties" of the mind--such as the "understanding," "reason," "imagination," "sensibility." In other words, Kant's transcendental inquiry into the ultimate conditions of knowledge involves as a basic presupposition a particular analysis of the structure of the mind; that is, this analysis of the structure of the mind is not itself the outcome of inquiry, but is involved in his transcendental inquiry as a presupposition.

We need accordingly to ask, what is the justification for this set of presuppositions? Can it validly be maintained that they are self-evident? Such a claim could hardly be plausible in view of the fact that other analyses of the structure of the mind are possible and have in fact been made. Alternatively it could be held that their justification is constituted by their coherently being required for the consistent explanation of the possibility of knowledge as entailing certainty--and this would indeed seem to be Kant's position. But what does this imply with regard to Kant's method in his transcendental inquiry?

Evidently his method is not to start from a priori certainties; rather it starts from presuppositions--which as such, are not certainties, but are subject to justification. On the basis of these presuppositions he arrives at the categories in terms of which apodeictic knowledge is possible. Can it be maintained that having determined the categories in terms of which there is knowledge, we could then know, have certain knowledge of, "judgment," the "understanding," "reason," etc.? This cannot be, since for Kant knowing entails judging, as it entails the act of the understanding, so that none of these can themselves be "known"--they constitute the presupposed conditions of knowing. Moreover, the categories, according to Kant, are "pure concepts of the understanding which apply a priori to objects of intuition in general,"⁵ and "understanding," "reason," etc. are not "object of intuition"--for Kant "intuition" belongs solely to sensibility.⁶

I would submit that what is brought out by this examination of Kant's doctrine is that what we have in it is a particular theory, a theory of knowledge, one among possible theories, and as such standing in need of justification. Further, what is highly relevant to our consideration is that this theory of Kant's is based upon the presupposition of "knowledge" as entailing apodeictic certainty. It was the intent to secure that condition, as we have seen, which constituted the basic reason for Kant's philosophical reorientation and for his consequent theory of knowledge and his new conception of metaphysics.

But it is precisely that presupposition respecting knowledge which has in our time come into question. Accordingly it is no longer tenable simply to assume it or accept it as a presupposition; it has itself to be subjected to inquiry. But if that conception of what knowledge is be brought into question, therewith also is Kant's basic reorientation brought into question; and this fundamentally affects all those subsequent philosophical schools of thought which have followed Kant, explicitly or implicitly, in that reorientation.

KNOWLEDGE, SCIENCE, AND METAPHYSICS

It has been developments in scientific thought in the last hundred years which have had the result of bringing into question the inherited presuppositions respecting knowledge. These developments, as we have seen earlier, had resulted in the abandonment of the conception of natural law as absolute. As long as that conception of natural law persisted, it entailed that the discovery of natural law constituted knowledge in the sense of certainty. But if natural law be not absolute--perhaps being only statistical probability--then the discovery of natural law could not constitute knowledge in the sense of certainty. The consequence of this is that we are now being faced with the necessity of rethinking the entire issue of knowledge, and indeed in a more thoroughgoing way than has been done at any time since the classical period in Greece.

The issue of knowledge, as we have noted earlier, is not separable from the issue concerning method of inquiry. Since the issue of knowledge has become crucial in respect of science, the question of scientific method has to be brought into special consideration with respect to the issue of knowledge. In fact appreciable attention began being devoted, from the middle of the nineteenth century onward, to the understanding of scientific method and particularly of the logic of scientific method. The outcome has been the attainment of a vastly better comprehension than was had previously of the procedure and logical structure of induction. What especially became clear was the quite fundamental role of "hypothesis" in induction and in scientific thought as a whole.

It is now well recognized that scientific inquiry proceeds by the postulation of certain features as general to a field of relevant data, and by the testing of that hypothesis in respect of its applicability and adequacy. When an hypothesis receives a certain degree of acceptance as established it usually becomes characterized as a "theory." The terminological change signifies the loss of the earlier degree of tentativeness involved in the procedure, and which is signified in the word "hypothesis." Further, the word "theory," with its etymological sense of "a looking at, a view," has come to have the connotation of a system or scheme of ideas, so that what is termed a "theory" tends to be something more elaborate and coordinated than what is usually termed a "hypothesis." However, there is no essential difference between the two, particularly with respect to their role in scientific inquiry. The procedure of scientific inquiry is that hypotheses or theories are developed in terms of which the relevant data are interpreted. The data being "interpreted" in terms of the theory means that the data are revealed as exhibiting the general features postulated by the theory or hypothesis; in other words, the data are exhibited as conforming to "general laws." It is this exhibition which constitutes scientific "understanding": those general features are what "stand under" the data, characterizing their nature, what they are. The theories which are accepted at any stage of scientific development are the best attainable at that stage in respect of their comprehensiveness, applicability, and adequacy. Further research usually reveals limitations and inadequacies, necessitating amendment of the theories in question or their replacement.

With the recognition of theory as in this way fundamental in the method and nature of scientific inquiry, we can see that scientific theory, by virtue of its being "theory," is not something final, established, and beyond question; that is scientific theory, as "theory," does not connote certainty. This is to say that scientific theory does not constitute "knowledge" in the sense insisted upon by Kant; it is precisely that conception of knowledge as entailing and connoting certainty which is repudiated. Is the conclusion which is to be drawn from this that we have here a conception of knowledge which pertains peculiarly to science? This would seem improbably the case, for the following reason. There had earlier been a strong tendency to distinguish the method of natural science from all others--this is the tendency which had culminated in the doctrine of positivism. But that tendency has come in the last hundred years to be reversed. The recognition of the fundamental role of theory and hypothesis in scientific inquiry has gradually brought the realization that this role of theory is by no means confined to scientific inquiry. On the contrary it has become clear that theory is equally fundamental in a range of other inquiries, including for example, historical inquiry, theological inquiry, and philosophical inquiry in general and metaphysics in particular. It is now readily recognizable that earlier philosophers, such as for example those of the seventeenth century, despite their conviction and analysis of philosophy as a deductive procedure, in fact proceeded by the postulation of general theories--their deductive procedure being the elaboration of the implications of their general theories into consistent systems. Also, I have pointed out above that Kant's "transcendental critique" likewise was constituted by the postulation of a general theory of knowledge and a theory of the structure of the mind as requisite to his theory of knowledge. Since theory is fundamental in the method of all these inquiries, it follows that not only does scientific theory not constitute knowledge in the sense of certainty, but equally others, such as historical theory, theological theory, and philosophical theory, including metaphysical theory, do not constitute knowledge in the traditional sense of certainty. A conception of knowledge different from the traditional one is requisite in all these other fields as well.

THE THEORY OF THEORY

The delineation in detail of this new conception of knowledge is the task of metaphysics, and it is one which is required to be undertaken with some urgency. In other words, metaphysics has to engage in a renewed inquiry into the issue of knowledge and of all that is involved in this issue. One most important factor in this, as we have been seeing, is that of method of inquiry. What is now especially pertinent in this respect is the question of method in metaphysics. Now we have seen that method in metaphysics is not essentially different from that in science: in both the procedure of inquiry is by the postulation of theory and the testing of that theory.

But while science and metaphysics are fundamentally alike in that both are "theories" or "theoretical structures," yet there are some most important differences between them qua "theories." First, it is evident that they must differ in respect of subject-matter. Both are general theories, but in science the theory is general to certain restricted data, while in metaphysics there is no such restriction in respect of data--metaphysical theory must pertain to all which is. But there is another difference between them which is of basic importance; it could indeed be seen as a corollary of the former. The complete generality of metaphysics entails that it must pertain to not only all the special fields of inquiry, but also equally to itself. That is to say, metaphysics as a completely general theory must cover and apply to all special theories, and it must apply also to

itself. In other words metaphysical theory, in contrast to scientific and other theory, must be self-reflexive theory.

This requirement is one of the utmost importance, more particularly so in the light of metaphysics as "theory." This is specially pertinent to metaphysics in respect of its task of producing a theory of knowledge. That theory must cover, and be explicative of, knowledge in every domain of inquiry. That theory of knowledge, however, must hold equally for itself. That is, it must be able consistently to explain itself as a theory of knowledge, which means that it must exhibit itself in terms of its theory of knowledge as itself being an instance of knowledge.

This requirement of self-reflexivity can perhaps most readily be illustrated by considering instances of its failure. I will take the Kantian metaphysics of knowledge as such an instance. In Kant's transcendental doctrine knowledge is constituted by apodeictic judgment, the doctrine itself specifying the conditions of apodeictic judgment, such as that it has to be in terms of the pure concepts of the understanding. But this doctrine is not itself a judgment, i.e., it is not an instance of judgment, it giving only the conditions for apodeictic judgment. This doctrine, rather, stands above judgment; this is the very meaning of its being "transcendental." Thus in terms of that doctrine, the doctrine itself cannot be an instance of knowledge; that is the doctrine cannot exhibit itself as "knowledge."

Now we have seen that Kant's transcendental doctrine is in fact a "theory," and herein lies the fundamental difficulty in this doctrine. It is a "theory" of knowledge, and it includes a "theory" of judgment, but--and this is its basic deficiency--it has no "theory" of theory. The intention of this analysis of Kant's metaphysics of knowledge is both to make clear the requirement of self-reflexivity in metaphysical thought and theory, and to exhibit this requirement as a most important test of the coherence and applicability of a metaphysical theory. In this we have, I would submit, one most important requirement of metaphysics as a discipline.

The elaboration of this requirement that metaphysics be self-reflexive theory brings out a further task of metaphysics. It has not only to formulate a theory of knowledge, but also, as part of that enterprise, to formulate a theory of theory.⁷ It is clear from what has been shown above that this theory of theory must also be self-reflexive; that is, this theory must explain itself as a theory.

But what exactly is involved in this formulation of a theory of theory? First, it must be emphasized that this formulation of a theory of theory cannot be undertaken as preceding all metaphysical inquiry--to do so would be to court failure in respect of the requirement of self-reflexiveness; rather, it must be an intrinsic part of the entire enterprise of metaphysics, and indeed of metaphysics in its fundamental aspect, that of ontology. This is to say, metaphysics must raise, as a basic issue, that of the ontological status of "theory." What kind of being is to be accorded to "theory"?

Theory can be, and has been, accorded the status of essentially "ideal" being: that is, theory is regarded as an "idea" or "concept," a purely mental or thought entity. This would seem to be, implicitly or explicitly, predominantly the position of most modern metaphysics. This position, however, has the ineluctable consequence of severing theory from its object, unless, following Kant, the object itself be accorded the status of "ideal" being, i.e., of a thought entity. Thus on this view or theory a scientific theory, for example, would not have natural beings per se as its object. It is important to be clear that on this view scientific theory can give us no knowledge at all about the world of nature in itself.

The question faces us: what alternative to this is possible? That is to say, what alternative is possible with respect to the ontological status of "theory"? Such an alternative, I would submit, is

possible by turning from the essentially Neoplatonic ontology and its concomitant theory of perception, which has dominated philosophical thought since the seventeenth century, to an essentially Aristotelian ontology and theory of perception. Let us concentrate for the moment on the theory of perception. On the Aristotelian position, in perception there is an initial reception by the perceiver of the physical thing as object. From this develops a process of mental or thought activity, one outcome of which is the formation of a "thought," "idea," or "concept" about the object. To be validly a "thought" about the physical entity as object, the physical thing itself must be the object of that "thought." In other words, that thought must be attributed to or proposed of that physical thing; that is, the physical thing itself must be the subject of that "proposition." This means that the "proposition" must be a synthesis of the physical thing, as received in perception, and the mental "thought," "idea," or "concept." In this theory, contrary to Kant, the fundamental synthetic entity in knowledge is not the "object," but a "proposition." A "proposition" is not a "thought" alone--to use Kant's famous statement, "thoughts without content are empty";⁸ the "content" must be constituted by the physical thing as the subject of the "proposition."⁹ It is only in this way, by having the physical things themselves included as the subjects of "propositions" that it is possible to have knowledge of physical things. This constitutes the fundamental strength and importance of the Aristotelian position.

Now "propositions" are the basis of hypothesis and theory. In fact, a "proposition" is the most elementary form of hypothesis or theory; for a "proposition" is a "proposal" of a certain predicative definiteness as characterizing a physical particular. "Judgment" concerns the correctness or incorrectness of that proposal; so that a judgment is exercised on a proposition, and thus on an hypothesis or theory. What we have here is a singular proposition, it having a single particular or set of particulars as its subject. A proposition will be "general" if its proposal extends to any set of a certain sort of sets of particulars; and it will be "universal" if the proposal covers all sorts of sets of particulars.¹⁰ In this last case we have a metaphysical proposition, or a metaphysical theory if the predicative proposal be sufficiently complex and comprehensive. It should be noted that conscious perception is an instance of a singular proposition. That is, conscious perception is not an "intuition," in the etymological sense of a direct "looking at";¹¹ conscious perception is a proposal--a hypothesis or theory--of a certain selection of definitive features as characterizing a set of physical particulars, the selection being the product of mental activity. This means that the empirical method, in scientific and other inquiry, is shot through and through, from beginning to end, by theory. This metaphysical theory of knowledge cannot be elaborated in further detail here. I will only point out that it conforms to the requirement of self-reflexiveness. For according to this theory the procedure of inquiry by which knowledge is attained is constituted by the postulation of theories, i.e. by the proposal of certain predicative features as characterizing particulars, and by testing those theories for applicability and adequacy. Integral and fundamental to this metaphysical theory is a theory of theory, a theory which must accordingly, as metaphysical, i.e., universal, apply to all instances of theory, including to itself as a theory. This latter applicability is achieved by the theory of theory including a universal theory, and by its being itself an instance of universal theory.

One further point needs to be brought out with regard to this metaphysical theory of knowledge: it is respecting the conception of "knowledge" entailed in this theory. This theory places a fundamental emphasis on procedure or method: this theory is a theory respecting the procedure by which knowledge is attained, this procedure fundamentally involving the postulation of theory. Thus knowledge is the outcome of the procedure of inquiry. Since that procedure necessarily involves theory, the outcome cannot be absolutely certain and final--i.e.,

knowledge in the sense insisted upon by Kant and his predecessors, medieval and modern. The outcome of the procedure of inquiry is rather a gradual approximation, an asymptotic approach, to truth. That is to say, in the new conception "knowledge" does not connote a final state, but rather a process of attainment.

THE DISCIPLINE OF METAPHYSICS

With the foregoing clarification of the nature of metaphysics, its method, and of the conception of knowledge, we can deal relatively briefly with the most important requirements for metaphysics as a discipline. The word "discipline" here refers in one respect to metaphysics as a "system," in another to the method, the conduct of the inquiry, and in a third to the order and control appropriate to the inquiry. The last of these, it has been clear for centuries, needs most strongly to be insisted on, because much of what has been produced under this title has been rather "wild" and has tended to redound to the discredit of metaphysics. This has been the consequence not only of the failure to exercise the orderly control appropriate to the inquiry, but also of a failure to comprehend properly the nature of the enterprise--an example of the latter is the view of metaphysics which has gained some adherence in recent times, that of metaphysics as a species of poetry.

In respect of all these senses of "discipline" and not only the last, in metaphysics as in the other disciplines of inquiry, the first and indispensable requirement is the logically consistent and coherent elaboration of the implications of the basic theory to the fullest possible extent, and then the unflinching facing up to those implications in respect to their applicability and adequacy. Neither of these requirements is without considerable difficulty with regard to their appropriate fulfillment, it sometimes taking generations of thinkers to achieve those requirements, positively or negatively.

With regard to the first of these requirements, metaphysics is in a special situation vis-a-vis the other disciplines because of its nature as extending over all the others. This entails the necessity, as we have seen in the preceding section, that metaphysics be self-reflexive. This means that the test of self-reflexivity is in metaphysics a most important part of the testing of the theory for its internal consistency and coherence.

As in every other intellectual discipline, so also in metaphysics the appropriate orderly control of the inquiry must be grounded in its method. In metaphysics, as in the special sciences as we have seen, the method is fundamentally the postulation of theory and its testing. In the special sciences the testing is to a considerable extent easier, because of the comparative restrictedness of the relevant data. The wider the generality of the theory the greater is the difficulty in assessing the applicability and adequacy of the theory under consideration, and it is most difficult in the case of theories of the widest generality or universality, namely those of metaphysics.

But there is another, and very special difficulty with regard to the testing of theory which confronts all inquires, and metaphysics no less than the others, though in the case of metaphysics this difficulty is even greater than in the others. This difficulty is grounded in the fact of all inquiries necessarily involving theory. The point is that the theory in terms of which the data are interpreted necessarily determines the relevance of the evidence, so that what does not accord with the theory is either not noticed at all, or in the extreme case is dismissed as irrelevant, or at most is construed into a conformity with the theory which is in fact only partial. Instances of these are legion in the history of science and of philosophy. This point is especially evident in the

empirical inquiries, for as we have seen perception is shot through and through with theory. But in the end the empirical component is significantly involved in almost all inquiry,¹³ and quite definitely so in philosophy and in metaphysics particularly.

Now that the basic role of theory in scientific and other inquiry has become ever clear, there is requisite the concomitant recognition of the necessity for special measures to overcome that difficulty involved in the very method of inquiry as such, the more so since, contrary to the widely-held supposition of the recent past, modern science and thought emulating science is no less susceptible to the formation of orthodoxies dominating the organization of inquiry (university departments, laboratories, professional associations, publication media, etc.) hindering or suppressing the airing of alternative viewpoints and theories, thereby seriously hampering inquiry and the search for knowledge and truth, and in particular obstructing the adequate testing of theories. For it is only by the sincere entertainment of theories alternative to our own, thereby enabling us to see evidence which our theory has missed or not properly taken account of, that there can be effective testing in respect of the applicability and adequacy of a theory.

There is one other profound difficulty facing all inquiry, in the special sciences and in metaphysics alike. This is constituted by the fact that the theories postulated in the procedure of inquiry in some degree will inevitably involve tacit assumptions and presuppositions. It is one of the particular tasks of philosophy to inquire into and discover the assumptions and presuppositions tacitly involved in the theories of the special sciences; this is a philosophical task because the presuppositions in question are almost always ones which transcend the special sciences under consideration, which is to say that the presuppositions are essentially philosophical ones.

But philosophy itself, and metaphysics in particular, has the task of discovering and critically examining its own presuppositions. This is a task of exceptional difficulty; since these presuppositions are tacit, they are detectable only by special methods. Fundamental in these must be comparison and contrast, for we can see and recognize only by contrast and difference. But it is not sufficient to compare and contrast only contemporary theories, for these could be exhibiting common presuppositions, and most probably do.

To overcome this difficulty historical inquiry is indispensable. This, however, itself faces special difficulties, for it is extremely easy to interpret past theories in terms of present ones, thereby failing to find precisely what is being looked for, namely the inherited presuppositions. The historical inquiry requisite in this respect is an exceedingly difficult and exacting undertaking, demanding of the inquirer a high degree of awareness of the possible intrusion of tacit presuppositions in his own inquiry. This historical inquiry, especially in metaphysics, needs to be pushed back to the beginnings of philosophical inquiry, and indeed with particular emphasis on and attention to the tacit metaphysical presuppositions involved in the very language of the originators of philosophical theory.¹⁴ This historical inquiry is of the first order of importance to the discipline of metaphysics, for without it we cannot be sure of what exactly is involved in metaphysical theory at any subsequent stage. In other words, without this historical inquiry it is impossible to make an adequate assessment of any metaphysical theory.

It is only such a historical inquiry that will enable us to disentangle the strands of inherited presuppositions which enter into the constitution of a later theory--Heidegger's theory of being, for example, or Whitehead's theory of prehension. Only thereby will we be able effectively and adequately to assess theories for their consistency and coherence. For example, thereby we will be able to see that Whitehead's theory of prehension involves a significant incoherence in its

combination, on the one hand, of an Aristotelian conception of the physical entity included as object in the prehender, with, on the other, a Neoplatonic conception of the act as belonging exclusively to the prehender.

The importance of this historical inquiry is not, however, restricted to its value in respect of the assessment of theories for their consistency and coherence; it is equally valuable in enabling a more effective assessment of the applicability and adequacy of theories, since through that inquiry we are able to have so much greater a discernment of what exactly is involved in the theories under consideration.

But there is another equally considerable advantage accruing from the historical inquiry into presuppositions. This in respect to the formulation of new theory. Not only are we, as a consequence of the clarification of what exactly is involved in concepts, rescued from falling into inconsistency and incoherence, but correspondingly, viable alternatives become all the more readily visible and available to us.

In summary, I would urge that this historical inquiry should be seen as constituting a most important and highly valuable, indeed quite indispensable, requirement in the discipline of metaphysics. We need to build on and carry much further the great movement of historical inquiry begun in the nineteenth century, but which has tended recently to have rather diminished. I see the possibility, on the basis of this historical inquiry, of metaphysics in the future becoming a much more strictly disciplined inquiry than it has on the whole been in the past, with a consequent vast gain in respect of its rightful contribution to the entire world of inquiry and learning.

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NOTES

1. This has not been true of German, in which the word "Wissenschaft" has until recently retained the wider denotation.
2. The following quotations are from the Norman Kemp Smith translation of Kant's Critique of Pure Reason, B xvi.
3. I. Kant, *Metaphysical Foundations of Natural Science*, tr. James Ellington (The Library of Liberal Arts, The Bobbs-Merrill Company, 1970), Preface, p. 4.
4. Cf. Kant, *Prolegomena to Any Future Metaphysics*, ed. Lewis White Beck (The Library of Liberal Arts, The Bobbs-Merrill Company, 1950), Part II, par. 39, Appendix to the Pure Science of Nature, Of the System of Categories (p. 71).
5. I. Kant, *Critique of Pure Reason*, B 105 (Kemp Smith, p. 113).
6. Cf. *Prolegomena*, Part II, par. 21a.
7. It was from conversations with Gottfried Martin shortly before his death that I first fully began to appreciate the importance of a theory of theory. He was then struggling with the problem, but I am not aware of his having arrived at a solution. 8. Kant, *Critique of Pure Reason*, A 51, B 75.
9. It will perhaps be recognized that I have here adumbrated Whitehead's theory of "propositions". Cf. *Process and Reality*, Part II, Ch. IX.
10. Cf. *Process and Reality*, Part II, Ch. IX, Sect. I.
11. Plato has been correct in rejecting the earlier sense of *noein* as a direct perceptual looking at, seeing the true state of affairs [cf. Kurt von Fritz, "nous -and NOEIN in the Homeric

Poems" (Classical Philology, XXXVIII, 1943, pp. 79-93) and "nous, NOEIN and their derivatives in Pre-Socratic Philosophy" (Classical Philology, XL, 1945, pp. 223-242, and XLI, 1946, pp. 12-34; reprinted in The Pre-Socratics, ed. A.P.D. Mourelatos (New York: Doubleday Anchor Books, 1974, pp. 23-85)], accepting from Parmenides that it is an intellectual insight or intuition.

12. The adequate demonstration of this is only possible by the elaboration of an entire metaphysical system, which is of course not possible here.

13. The most notable exception here is the kind of inquiry of which pure mathematics is the most prominent instance. The "theory" involved in pure mathematics is not a "proposition" as in scientific theory and philosophical theory, since it does not include physical entities as its subject--there has in the past been a great deal of confusion in thought as a result of a failure to make the requisite distinction. The clarification of the ontological status of mathematics is a most important part of the task of metaphysics.

14. A very good example of this kind of inquiry is that of Kurt von Fritz in the papers mentioned in note 11 above.

CHAPTER II
METAPHYSICS and the ARCHITECTONIC OF SYSTEMS
REINER WIEHL

METAPHYSICS AS THE SCIENCE OF SUBSTANCE

I shall begin my observations with a very general and provisional definition of the concept of metaphysics: metaphysics is the theoretical preoccupation with the ultimately fundamental things. In saying this I speak intentionally of theory and not of science (*scientia*) and doctrine (*doctrina*). In this way I can, for the time being, exclude one of the most controversial questions, namely, whether metaphysics is a science and doctrine in any sense and on what conditions it could possibly become such. With this provisional definition I also avoid intentionally any talk of man as such. For this, too, would anticipate a major point of controversy in metaphysics, namely, whether as a particular being amongst others man is in any sense an object of metaphysical cognition, or whether such an object must be traced to something more fundamental whose concept forms the necessary condition for all human knowledge, and finally to man's knowledge of himself. According to the above formula for the concept of metaphysics, the definition of its nature requires finding a valid definition of what is fundamental and of the theory thereof. The following provisional description of what is fundamental may suffice here: it must be fourfold, namely, be most comprehensive, most general, most real, and finally most perfect. The manner of dealing theoretically with this fourfold fundamental may be characterized as thought. A more terminological version might say that metaphysics is the logic of substance, but it is more than the mental examination of this or that basic feature of things.

Unity and Eternity

It can be said with some justification that theoretical physics, as the science of the laws of nature, changes into a metaphysics of nature precisely when the established laws of nature can be seen to be the most general laws of this kind. Similarly, ethics, as the theory of human action and of successful human life, becomes a metaphysics of morals at the point at which it is concerned not only with the acceptance and rejection of certain currently operative norms of human conduct, but also with the absolutely perfect as the most comprehensive determining factor of human existence. Inherent in metaphysics' specific way of considering objects is a tendency towards unity, a drive towards examining the interconnection between the various single elements of things.

Metaphysics, as the logic of substance, is the theory of the unity of substance, the knowledge of the fundamental connection between the elements of things. The corresponding attribute "metaphysical," when understood in this very general sense, is not a specific characteristic of ancient philosophy in contrast to modern philosophy. It describes just as well the early modern philosophical rationalism of Descartes, Spinoza and Leibniz, and the speculative systems of idealism of Kant, Fichte, Schelling and Hegel. Kant's famous proposition in the introduction to the Critique of Pure Reason is most certainly right: "In all men, as soon as their reason has become ripe for speculation, there has always existed and will always continue to exist some kind of metaphysics." (B 21) Our present time too has a characteristic metaphysics

which, however, hidden and repressed it might be, must somehow disclose its distinctiveness and permit its comparison with the familiar images of traditional metaphysics.

That metaphysics as a whole presents an appearance which is diversely entangled, if not even full of contradictions, is not generally disputed by its "friends and foes," but noted repeatedly. It is equally indisputable that this inconstant appearance has repeatedly, and in many different ways, given cause for reflection. The judgment and the evaluation of change in metaphysics is in turn subject to change, and facilitates different intellectual conclusions. Scepticism as regards the possibility of metaphysical knowledge is one such consequence; the design of a new architectonic for a metaphysical system is another. If it is at all permissible to speak of a modern metaphysics, this distinguishes itself from the traditional metaphysics of the antiquity and of early modern times by its concomitant historical consciousness, that is, by consciousness of the constitutive character of its own temporality.

That such a consciousness was lacking in the old metaphysics, or at least was not constitutive of it, both leaves its mark on that kind of metaphysics and makes possible via negationis a description of modern metaphysics. The old metaphysics conceived its object, substance, from the definitive viewpoint of timelessness, or being beyond time; to take Spinoza's famous formula: *sub specie aeternitatis*. This kind of observation seems on the one hand to be mapped out by the object, the absolute substance in its various essential features. The comprehensive whole, the general and the law-like, the actual and concrete, the perfect and best, when seen in its respective fundamental and substantial character, all seem to call inevitably for the idea of the everlasting, of the being able to be such and not other. This consideration of objects *sub specie aeternitatis* seems to be evoked just as necessarily by the types of investigation, i.e., the logic of substance. Thought in this type of investigation must be conceived as adequate to its object and related to it in a certain way. Accordingly, thought counts as substantial and even fundamental with regard to substance.

Ancient and Modern Truth.

Metaphysical knowledge, therefore, as the logic of substance and the theory of its unity, takes the form of an absolute foundation. However, this absolute foundation need not completely exclude the idea of change with regard to absolute substance. Rather, change belongs among the most evident essential features of things and must have a systematic place within the foundation. As a result the various essential features of substance as such and their unity reveal a correspondingly varying affinity to change. Thus, reality seems more probably to be compatible with change than with perfection, with the comprehensive whole than with the general and law-like. In considering objects *sub specie aeternitatis* in regard to the idea of absolute immutability the old metaphysics reaches only the boundary at which problems emerge; it does not move beyond this boundary to the concept of a metaphysics, which, in accordance with its essence, is changeable: this boundary is set by the truth in classical metaphysics. It is not merely that the object of metaphysical thought, namely, substance, was conceived *sub specie aeternitatis*, nor that the manner of metaphysical cognition as the foundation of substance arose in thought *sub specie aeternitatis*, but above all that the aim of the foundation, namely, truth as absolute and fundamental, was understood only in relation to the eternal. The main problem of the traditional logic of substance as founded *sub specie aeternitatis* was the basis of the obviously essential features of things, motion and rest. This foundation implied a quite analogous problem for the corresponding theory of the unity of substance, namely, the basis of truth and falsity. These

problems were intensified by the distinctive character of an intellectual foundation in terms of eternity, in relation to which motion seemed especially problematic. Thus ancient philosophy attempted to solve these two basic problems by putting forward analogous paradoxes: that both motion and falsity are non-existent and their reality a mere illusion. Besides Scepticism, Eleatism and Sophism were the great challengers of ancient ontology and metaphysics, and one of the great intellectual endeavors of classical Greek philosophy was to "save" motion as well as falsity and deception.

Plato's Theaetetus is the impressive document of this rescue attempt. Classical ancient philosophy created paradigms for a foundation not only of motion and rest, but also of truth and untruth, the latter in conjunction with the development of a classical form of philosophical criticism. Truth is thereby absolutely distinguished from mere correctness of perception, opinion and certain conduct. This difference results on the one hand, from the direct relationship of truth to knowledge as the foundation of substance whence truth gains its specific characteristics of constancy and necessity. On the other hand, these criteria clarify why a distinction has to be made between truth and correctness. Human behaviour which is concerned with correctness must be possible even when the knowledge guiding this conduct is imperfect. Further, this knowledge must be applied to a certain situation and thereby be necessarily limited.

The human knowledge guiding action need be assured only as provisional, not as fundamental knowledge. Correctness and incorrectness change from case to case and allow for examination in each case. The relationship between truth and untruth is something quite different. The possibility of a philosophical critique demands that untruth find its systematic place within a foundation of substance. The result of this for the relationship between untruth and truth that is this: 1) untruth is given only under presupposition of truth and in relation to it--and is defined as such (*veritas est index veri et falsi*); 2) untruth is both well distinguished from truth, and not distinguished from it, since it is truth not as such, but only when regarded from a limited and particular standpoint and on the specific conditions of this limitation; 3) accordingly truth relates to untruth, not as if the latter were something quite different, but as truth in a specific imperfection: a provisional truth, which has not yet been recognized in regard to the conditions of its specific limitation, and which therefore is not yet absolutely comprehensive, general, actual and perfect truth; and 4) the relationship between untruth and truth is to be conceived of under these fundamental conditions as the specific movement of truth itself, as the way and method which has as its goal a comprehensive, general and complete knowledge of truth.

A movement is differentiated according to its various phases, a method is structured according to its single, constitutive steps. Each phase of the movement of truth, each of its methodical steps is determined by the following formal aspects or moments: a) positing a definite and limited standpoint, and the definition thereof; b) reflection on the essential conditions of this positing and the definition thereof in relation to the above definition of positing; c) the synthesis of both the given definitions and the definition of their correlation; d) positing this synthesis as of a limited standpoint and reflection on its relationship to the initially posited standpoint with a view to gaining a more general and comprehensive standpoint.

As has already been said: not only did classical ancient ontology and metaphysics avoid Scepticism, it tried also to overcome the paradoxes of Eleatism and Sophism. Its most important discovery in this endeavour was that of the constitutive correlation of truth and method in the most general sense. In spite of this discovery it did not succeed in bringing the concepts of motion and truth into complete harmony with the idea of substance and its grounding. Nor was the tension between truth and correctness, knowledge and opinion resolved; this continued as

tension between an ontology of substance and a pragmatic ethics in modern times. Metaphysics in the modern age has placed itself deliberately traditional in the context of ancient metaphysics and has attempted at the same time to reconcile this tradition with the spirit of modern scientism. This is especially true of Hegel's superb attempt to solve all the problems of traditional metaphysics by changing the contradictions in its appearance into constitutive phases of the movement of truth, into dialectical steps of the metaphysical cognition of truth.

Hegel himself understood this systematic reconstruction as the completion of truth and the end of the history of metaphysics. For this systematic reconstruction he coined the formula of the subjectivization of substance, and determined subjectivity as the principle by means of which the ancient idea of truth could be completed in the changed conditions of the modern age. That formula of the subjectivization of substance, as well as the principle of subjectivity, is exposed to obvious misunderstandings. It is not wrong to speak of a revision of the traditional ontology of substance in favor of an ontology of subjectivity, but it would be wrong to see in this revision a fundamentally new ontology. It is not as if the traditional logic of substance were replaced by a logic of motion and the idea of a grounding of substance in pure thought were invalidated. It would be more appropriate to speak not of such a revision, but of a reversion of the traditional priorities in the relationship of the object, method and truth of knowledge.

Method and Knowledge.

For ancient ontology and metaphysics it was almost self-evident that the object had the first priority in this relationship. Especially at those times when it wished to proceed methodically, knowledge had to orientate itself by the essence of the thing and its inner structure. It was exactly against these pretended essence of the thing that the degree of the compulsoriness of knowledge and its method was to be measured. The philosophy of early modern times reversed this relationship. It raised knowledge to the first principle and made its inner structure the methodical order according to which every possible objective order was to find its orientation.

In his systematic construction of the perfectly completed metaphysics Hegel tried to combine the objective priority of ancient philosophy with the methodical priority of the modern. In this way, the thinking of the antiquity was to be reconciled with that of the modern age. This was to happen through holding the concept of truth to be the first principle just as the antiquity had in fore-knowledge understood it, but by viewing this concept at the same time as inseparable from the method of cognition. Reflexivity, processuality and subjectivity became the supreme principles, because of the idea of truth in antiquity and in order to penetrate that idea conceptually in the philosophy of modern times. Reflexivity meant primarily the absolute relationship of completed truth to itself in each of its limited and conditional modes of appearance. Processuality meant primarily the movement of truth in its various constitutive phases, such that in each step the previous and the subsequent were also considered. Subjectivity was awareness of one's own external conditions, thereby becoming aware of one's own specific limit, and thus expanding the scope of one's effectiveness.

Reflexivity, processuality and subjectivity belonged inseparably in the unity of the concept of truth and its methodical movement. In this context the essential features of truth itself were to provide the standard by which the essential features of things were to be measured, which were to be ordered according to their respective relationship to this standard. Thus, the methodical order of metaphysics looked in principle like this: the comprehensive whole becomes an absolute totality through the gradual expansion of its respective, limited entities; the conceptual-general

becomes a concrete-general through a gradual concretization of the abstract; the real-actual becomes finally actual and actualized freedom through a phased actualization of more and more real possibilities; and the perfect is completed by the gradual, methodical completion of the unity of the comprehensive whole, the concrete general and the truly free in the absolute unity of thought. This construction of the system of completed metaphysics has, through its consciousness, brought the history of this metaphysics to a close. It is true that it has not produced the historical consciousness as such, but it has made a quite considerable contribution to the profound change which the function of this consciousness, in regard to the continuation of the metaphysical tradition, has gone through.

The general concept and nature of modern historical consciousness constitutes an exceptional paradox in connection with the idea of metaphysics. For, as the consciousness of a modern metaphysics, it is in no way simply the consciousness of the truth of a methodical movement, a history continually pressing for self-fulfillment. Nor can this consciousness be interpreted as equivalent to the consciousness of an advance of metaphysics toward its necessary conclusion. Finally, neither is this historical consciousness an absolute scepticism towards the whole tradition of metaphysics or an awareness of its definitive end. Modern historical consciousness, by which metaphysics is bound, is as divisive as it is conflicting. It divides every possible metaphysical standpoint into one inside and one outside of metaphysics, and thus into a halved metaphysical standpoint. Thereby the respective specific limitations of this standpoint becomes, together with its ontological conditions, conditioned in two ways. It is no longer only a limitation made by another limited standpoint of metaphysics and its metaphysical requirements, but beyond this it is also and mainly a limitation by a certain non-metaphysical standpoint and its definition.

The Reduced Concept of Metaphysics.

Metaphysics today seems to concern itself less directly with the general foundations of things and their grounding, than with this and that phenomenon as a mere phenomenon. For this metaphysical phenomenalism the understanding and interpretation of certain individual traits of metaphysics wins absolute priority, while what lies behind these metaphysical phenomena evades intellectual consideration. Historical consciousness is essentially related to relativity and scepticism. But this consciousness is not a certain scepticism, which would itself be based on a certain concept of truth, thus facilitating its constant connection back to an ontology and alethiology. Rather, the scepticism of the historical consciousness of modern metaphysics is based on withholding judgment in regard to the validity of this or that concept of truth, or even in regard to any conceivable concept of truth at all. Such scepticism is compatible with the idea of a system, but not with the implementation of a system as self-contained and final. It can only accept systems as provisional, and a temporal succession of such systems only as a manifold of alternatives of various intellectual-linguistic phenomena of expression of fundamental importance. The historical consciousness in metaphysics certainly contributes today to that extreme, intellectual reserve, which allows only a consideration of certain traits of a traditional metaphysical system with regard to particular qualities and their relations.

Amongst these qualities, that of inconsistency plays an outstanding role, in part because a construction of partial traits appropriate to it is relatively easy to contrive. Also from such a construction conclusions for re-ordering can be drawn relatively easily without the inconsistency having to be sounded out and the consequences of the specific purge having to be thought

through to a conclusion. Hand-in-hand with this withholding of judgment by the historical consciousness goes the doubt regarding the traditional idea of a grounding of substance through thought. This doubt leads in turn to a gradual reduction in previously binding form of the definition of the intellectual-linguistic expression in metaphysical thought. With this, the fundamental way of looking at a problem of metaphysics begins to change. Just as important, if not more important than the grounding of substance through thought, becomes the question of the understanding and interpretation of the varying forms of such a grounding. With that, the problem of the grounding of interpretation, especially with regard to traditional metaphysics, gradually begins to be of consequence; alongside a hermeneutics of metaphysics there emerges a metaphysics of hermeneutics.

THE PLURALITY OF STANDPOINTS AND PHILOSOPHICAL CRITICISM

With his systematic construction of the completion of the history of metaphysics, Hegel not only constructed the undertaking of thinking through from scratch antiquity's concept of truth in terms of the conditions of modern philosophy, namely, the principles of reflexivity, processuality and subjectivity. At the same time he sharpened beyond recognition the characteristic of ancient philosophy: philosophical critique demanded that one "put oneself into the power of one's opponent." Ancient philosophy knew its external standpoints as partially opposite points of view. Such positions, running at least partially counter to philosophy, were: the standpoint of the natural attitude to life and of the common-sense knowledge of perception and experience, the standpoint of human ability and of the mastery of a particular technique, the standpoint of true knowledge as reached in science, and, finally, the standpoint of practical shrewdness and of moral insight.

The Integration of Perspectives in a Fundamental Ontology.

All these positions were so fundamental in ancient Greek philosophy that it did not wish to exclude them completely from the general grounding. It was more a case of bringing them into relation with the ontology of substance, of showing them their specific limit in the foundation and of letting them by degrees take their part in it. In this way, the above positions were by no means only opposite points of view or external standpoints; rather, they marked out points of transition into the philosophical grounding of substance. The ancient grounding of substance, its theory of the substantial unity of things, saw itself as the science ((episteme) of principles (archai), as a well-ordered, true knowledge of the foundations of the Being-that-truly-is (to ontos on, ousia). The first fundamental principles of this being are not regarded here as located exclusively in the philosophical grounding of ontology. Rather, the foundations of things are so conceived that as principles they pervade all areas of the world accessible to man; they establish the structure of the order thereof and thus also have their place in those positions which seem external to philosophical ontology.

Thusfar, we have seen the principles as facilitating the transition and gradual integration of these positions into ontology. At the same time, however, the specific imperfection of the related area is revealed in the particular manner of the conception of these principles from such an external standpoint. Principles form the basis of natural perception and experience, but they are comprehended only sensuously, if at all, in this area rather than in their truly fundamental function. That is why this area is also an area of contingency and demands that its knowledge be

secured through technique and science. A particular technique gives man the security of a specific ability which connects skill both with experience and with a particular knowledge of rules, regularities and causes. But a technique is aimed at a knowledge of causes, not for its own sake, but rather only insofar as this knowledge guarantees the security of ability. That is why the technical knowledge of causes remains in the end without a base and open to being revised and falsified.

What first connects the individual science with the individual technique is the generality of the knowledge of causes. At the same time, it differentiates itself from technique by examining the causes of its own area for their own sake; in so doing it directs itself towards the most general and fundamental causes. That is why the philosophy of antiquity sees in the idea of science some constitutive reference to a science of principles, which, pursued for its own sake, seeks the first causes of the Being-that-truly-is. But above all principles determine the area of human action and conduct; and practical knowledge and moral wisdom also refer, as a knowledge of principles, to the unified general view of a science of principles.

Accordingly, one can make this generalization: in relation to philosophical ontology there are as many external positions to be distinguished as there are basically varying principles, varying conditions, and kinds and modes of their conception. To the degree that philosophical ontology is able to integrate these external positions, the order of the external positions will be revealed through the order of principles. The ancient science of principles was able to regard itself as a fundamental science and so at the same time as the most universal science in relation to its external positions. At the same time, it also claimed thereby to be the most rational and well-founded science. The maximum of rationality claimed was understood as a maximum knowledge of principles inasmuch as it no longer conceived of this from a special mode of access, as they appear for men (*pros humas*) and under specific, respective conditions of access, but in their true condition, actually, as the first elements (*ta prosa, ta stooicheia*) of the Being-that-truly-is (*to alethes*).

Finally, that science of principles also saw itself as the highest and most perfect and most worthy science, not so much because it was able to demonstrate its maximum of universality and rationality in relation to its external positions, but as a science of the highest, most perfect and most worthy--as "Theology." This claimed maximum of good was given not exclusively as an activity for its own sake, but through the nature of the object as the Being-that-truly-is, namely, the divinity of this being and of its truth and beauty. The ancient science of principles was a theory of the fundamental, hierarchic order of things in relation to this fundamental science and its own inner order. But this hierarchic order is and remains a manifold one; it is diversely structured according to the many external standpoints and the corresponding manner of condition and mode of conception of its principles.

The natural world, that of ordinary life (*Lebenswelt*), is ordered according to the hierarchy of the importance of its goods. To a certain degree this order is followed in the ordering of its techniques, but only to a certain degree. For a guiding, architectonic technique is defined as such in comparison to other techniques as having a superior goal, not only according to the standards of the generally accepted material order of goods, but also according to internal, "technical" criteria. The order of the sciences also touches the hierarchy of the other orders without being congruent with the order of technique regarding the essentials and causes, or with that of ethics regarding the norm of the end in itself. Finally, the hierarchy of values and goods in ethics and politics concerns all these hierarchies of values from the viewpoints of their possible realization and of truth, and thereby assumes an all-important function as a standpoint external to

philosophical ontology. In their relations all these hierarchies orientate themselves according to the manifoldness of the value maxims of the science of principles.

External and Internal Standpoints.

Through the systematic construction of its completed history, Hegel posited ontology and metaphysics absolutely; by so doing he negated the multiplicity of possible, external standpoints. This absolute positing occurred on the deliberate condition that modern thought and its philosophy allows itself to be reduced to one single, essential, pre-ontological standpoint, which requires integration into modern ontology; namely, to the standpoint of a finite human consciousness and the inseparably connected ideas of an absolute and methodically self-organizing science. This modern integration of a pre-ontological standpoint into ontology proceeded in its methodology in a dialectical and epagogical way. Like ancient philosophical critique it used analogy in regard to the condition and modes of conception of identical principles. But the reduction of multiple possible stand-points external to ontology to a single one was necessarily combined with a reduction of the manifoldness of analogy in the use of principles to one single, absolute analogy; namely, to the analogy of the principles of consciousness and subjectivity in regard to the identical principle of truth. By means of this single and absolute analogy a pre-ontological theory of the history of consciousness was related to an ontology of the occurrence of truth.

The necessary result of this was the singleness and absoluteness of one hierarchy, namely, that of the methodical steps of the explication of truth itself. Like all mediations of opposites, this unique attempt at a "reconciliation" of modern thought with that of the antiquity could not help, abstracting at least in some respect from the specific peculiarity of the opposing relata. This is as true of the peculiarity of ancient thought as for modern thought. However much Hegel's concept of truth is related to that of antiquity in regard to the essential features stated above, it is equally far from it in regard to the consequence of having one single and absolute valid hierarchy of values (if one disregards the manifestations of late Platonism).

Metaphysics and the Natural Sciences: Causality and Universality

But the specific nature of modern thought is also insufficiently defined in this mediation. This peculiarity does not lie in making the principle of consciousness the unique principle, nor in binding this consciousness to the idea of an absolutely valid universal science, but in defining this as a mathematic, empirical natural science. One can say with a certain justification that in modern times it is precisely this science which forms the only relevant external position to ontology and metaphysics. But it can just as well be said that in terms of its conscious self-understanding this universal, modern natural science is nothing other than a modern metaphysics.

In this twofold manner of speaking the dilemma of modern metaphysics becomes clear as resulting from the singleness of an external position to it. Either modern metaphysics regards itself with respect to the new universal natural science as the absolute foundation and tries by means of this, its own grounding, to integrate the other science as a pre-ontological knowledge according to its own standards of truth; or the opposite case occurs, and the modern universal natural science which makes of itself the absolute foundation and, if need be, appropriates elements of metaphysics according to its own methodology.

The modern, universal natural science, when understood as metaphysics, distinguishes itself from the traditional science of principles first fundamentally in regard to its methodology. The method of the latter was based on a definition of the nature of pure thought, as for example that of the external on observation and experiment on the one hand, and the application of mathematics and geometry on the other. It is evident that this difference in the methodical basis was bound to imply a correspondingly fundamental difference in regard to the concept of rationality and to the standards of evaluation thereof. Above all however, the modern universal natural science, when regarded as modern metaphysics, is to be understood from the viewpoint of its reductive character. It reduces to a minimum not only Aristotle's theory of a diversity of modes of causality, but also the above-mentioned diversity of the essential features of things.

Amongst these, first and foremost, only the element of generality and of maximum universality seems able to maintain its uncontested validity; with it the norm of true knowledge as of a universally valid and necessary one is preserved. Less uncontested, but nevertheless still valid, is the element of the comprehensive whole also in regard to the idea of a maximum totality and in the form of a concept of the extensive continuum, which can be conceived of both as a comprehensive whole and as the form of the absolute totality of being. Difficulties arise here from linking this concept to the corresponding idea of a maximum. On the other hand, in the metaphysics of modern, universal natural science the fundamental concept of the real and of actuality becomes precarious, first of all as such, and then especially the corresponding ideas of a maximum and of a hierarchy of realities.

Finally, the element of perfection becomes quite dubious, which, in the form of the idea of the good and the *causa finalis*, played such an important role in the ontology of the ancients. There seems to be no autonomous place to be found for this element in the new metaphysics of natural science. Here the reductive character of this metaphysics emerges especially sharply, for perfection imagined in respect to the idea of a maximum here reduces itself to the function of a regulatively interpreted, relative maximum of generality, compulsoriness of validity and uniformity of theory of this universal science.

But most importantly the consequence of the described reduction for Hegel's foundation of speculative ontology is none other than that there can only be one single and absolutely valid hierarchy, namely, the hierarchy of generality and universal validity. Only the interpretation of this single and absolute hierarchy differs here and there: on the one hand, a hierarchy of degrees of freedom, on the other, a hierarchy of degrees of probability.

The Idea of Reflection.

Modern metaphysics constitutes itself as the antithesis between a metaphysics of nature and a metaphysics of freedom. But its modern character is at first only very superficially characterized by this antithesis. Hegel was not the last who tried to give metaphysics a new basis, and the manner of his new kind of grounding was not the only definitive one, despite its far-reaching effects. Amongst the previous attempts at providing a new foundation, undoubtedly those of Kant and Leibniz were especially important, above all because both were directly involved with the specific nature of this modern natural science. However, the manner of involvement was highly different.

The so-called rational metaphysics of early modern times in its specific expression in Leibniz had its special characteristics in the fact that, so to speak in a countermove to empirical science, it gives first priority to the element of perfection of all other, varying substantial

elements of things and thereby to the idea of a maximum of such perfection and to a hierarchy of objects oriented to this standard. Accordingly, it is also secondary to this basic concept that the norm of rationality of theory and the norm of its order are oriented. In this groundwork of a theory of substance a maximum of perfection means moral perfection of a highest being, in which a maximum of freedom is combined with a maximum of conceivable good (*ens perfectissimum*). By this maximum are measured the degrees of freedom and the sequence of goods. But perfection also defines the element of the actual and the real, both absolutely as well as in regard to the maximum of reality. Just as the highest perfection coincides with the highest reality (*ens realissimum*), so in each individual finite thing the degree of its reality corresponds to the standard of its perfection, measured by the standard of perfection and reality.

Perfection also determines the comprehensive whole in its respective, unified totality: the highest monad, which takes into itself all other monads and which at the same time is the most real and perfect. And finally, the substantial element of universality also receives its determination by the element of perfection of an act of cognition: an act of knowledge is perfect as the adequate and complete act of cognition of a being with regard to the degree of its reality and perfection and in respect to the comprehensive whole as the maximum of the perfect unity. Consequently, the element of perfection (*perfectio*) carries above all in this modern foundation of ontology the burden of providing a basis for a rational science of principles in relation to the universal science of nature. Kant's critique of this foundation has many sides, but it can be especially understood as a critique of the fundamental function of the concept of perfection. According to that critique, this concept is not sufficient to fulfill all those functions, especially not to define the rationality of the fundamental science and to mark out the limit between it and empirical natural science.

It is well known that on the basis of this critical recognition and for the first time in the history of modern philosophy, Kant put the real, critical question in regard to metaphysics: how is this possible as a science. One can best paraphrase the most important starting point of his observations as follows: he saw that as a science of principles metaphysics was clearly and evidently distinguishable from the empirical natural science, but in that regard to the norm of rationality it could not be fundamentally different. That was the reason for his undertaking to find a new ground for metaphysics as a science by examining the methodical foundations of the modern natural science, mathematics and empiricism with regard to their principal foundations. It was the reason also for his attempt, by means of a methodical distinction between analytical and synthetic knowledge on the one hand and knowledge a priori and knowledge a posteriori on the other, to find the requirements for an appropriate definition both of the rationality of metaphysics and at the same time of the modern natural sciences. In the answer to the question--how are synthetic judgments a priori possible--he thought he could find the key to solving the whole cluster of problems. But was the last formulation of the question in itself sufficient to provide a new basis for metaphysics also and above all as a science? Had not this critique of the principle of perfection expressly put into question the possibility of an internal order of such a science?

The Art of Construction.

The second main part of the Critique of Pure Reason, "The Transcendental Doctrine of Method," in its third main chapter entitled "The Architectonic of Pure Reason," brings the importance of this formulation clearly to the fore:

By an architectonic I understand the art of constructing systems. As systematic unity is what first raises ordinary knowledge to the rank of science, that is, makes a system out of a mere aggregate of knowledge, architectonic is the doctrine of the scientific in our knowledge, and therefore necessarily forms part of the doctrine of method. (*Italics mine.*)

To the above, Kant adds something like a provisional philosophical definition of the concept of system:

By a system I understand the unity of the manifold modes of knowledge under one idea. This idea is the concept provided by reason--of the form of a whole--insofar as the concept determines a priori not only the scope of its manifold content, but also the positions which the parts occupy relatively to one another. The scientific concept of reason contains, therefore, the end and the form of that whole which is congruent with this requirement.

He explains this unity of form by means of an analogy with the animal organism:

The whole is thus an organized unity (*articulatio*), and not an aggregate (*coacervatio*). It may grow from within (*per intus-susceptionem*), but not by external addition (*per appositionem*). It is thus like an animal body, the growth of which is not by the addition of a new member, but by the rendering of each member, without change of proportion, stronger and more effective for its purposes.

But how is this system of pure reason to be realized, and thereby metaphysics to be a science? On what conditions does an art of systems stand at all?

The critique of reason is needed, and it "in the end, necessarily leads to scientific knowledge; while its dogmatic employment, on the other hand, lands us in dogmatic assertions to which other assertions, equally specious, can always be opposed--that is, in scepticism." (Introduction, B22/23). It is, accordingly, this critique of reason, from which is to be expected, not only the answer to the question how metaphysics is at all possible, namely as synthetic knowledge from a priori concepts, but above all, how it is possible as a science. Kant described the relationship between the critique of reason and the science of metaphysics which has to be grounded anew by means of the concept of transcendental philosophy: "I entitle transcendental all knowledge which is occupied not so much with objects as with the mode of our knowledge of objects insofar as this mode of knowledge is to be possible a priori. A system of such concept might be entitled transcendental philosophy" (Introduction, B25; *italics mine*).

But the critique of pure reason in no way coincides with transcendental philosophy. It only forms its beginning, because the latter "must contain, with completeness, both kinds of a priori knowledge, the analytic no less than the synthetic," while in *The Critique of Pure Reason* "we have to carry the analysis so far only as is indispensably necessary in order to comprehend, in their whole extent, the principles of a priori synthesis, with which alone we are called upon to deal." (Ibid). It is Kant's transcendental philosophy, that is philosophical ontology as the first part of the totality of metaphysics, which is to be given a new foundation by a critique of pure reason. This philosophy takes the form of a system and can thus claim scientific character. Accordingly, we will have to look for the key to the foundation of this character in *The Critique of Pure Reason*. Is it also the basis for something like an "art of systems" or might it presuppose this?

The critique of pure reason should answer our question why metaphysics is possible as a science. As we have shown in general, it must also answer the other two questions, how pure mathematics and pure natural science are possible because it is concerned to prove a unified concept of rationality (sensibility) in metaphysics and natural science. But, on the other hand, the critique of pure reason is concerned with the "idea of a special science" (Introduction, B24), which has in common with metaphysics as a whole and with transcendental philosophy as ontology (vgl. B873ff) the form of the scientific. But what is this metaphysics to be based upon: on a science, which is perhaps always provisional and preliminary, which we will call the critique of pure reason; or, on the other hand, on an art, namely an art of systems, which alone ensures for the critique of pure reason the to-be-ordered character of an initial, critical science? Is the new metaphysics based therefore upon science or upon art? A possible answer to this question should be sought by means of a more exact analysis of the relationship between the concepts of system and of schema.

PRINCIPLES OF SYSTEMATIC UNITY

The question whether metaphysics is possible as a science can be replaced, in accordance with the connection between the idea of system and of science, by another: how is metaphysics possible as a system and as the systematic unity of a general human fundamental knowledge? If it is true that metaphysics is the theoretical preoccupation with the "first principles of human knowledge," then the architectonic or the art of systems is for these principles, and it is exactly those principles which have to be connected in a scientific form.

System and Schema

In Kant's attempt, to answer the question he himself posed, one concept plays a key role at which the following observations are aimed, namely the concept of a schema: "The idea (i.e., the form of a systematic whole) requires for its realization a schema, that is, a constituent manifold with an order of its parts, both of which must be determined a priori from the principle defined by its end." (A833) In regard to the concept of a schema, is the nature of the unity of the whole of this manifold and of the order of its parts? How is it distinguished from the corresponding unity of system, the implementation of which it is supposed to help? Is its unity analogous to that of the system; does it already include in embryonic form all that is included in the other, and do schema and system represent only various phases of the "inner growth" of the idea, or of the system of knowledge? Is its methodological nature given along with it? Kant's concepts of schema and system are not inseparably bound up with the concept of metaphysics, but they are designed as a result of the question as to the possibility of metaphysics as a science. However, the connection of the above set of problems underlies certain theoretical conditions in his theory.

To these belong among others: 1) the distinction between acts of cognition from principles, on the one hand, and acts of cognition from empirical principles on the other; in short, between pure knowledge of reason and empirical knowledge of reason; 2) the distinction between the philosophical and mathematical knowledge of reason on the basis of a unified ideal of rationality; 3) analogy in the relationship of the knowledge of reason and sense to their specific objects as the condition of a systematic unity of all knowledge of reason. The question is, whether these specific conditions of a system of metaphysics are to be regarded as valid or

whether they are rather suitable for concealing general conditions in the use of schemata for the constitution of systems.

The first of the above-mentioned requirements was, in Kant's eyes, so important that he linked it with a general methodical maxim, which one could really label the principle of his style of thought: "It is," he remarks in regard to the question of the system of metaphysics, "of the utmost importance to isolate the various modes of knowledge according as they differ in kind and in origin, and to secure that they be not confounded owing to the fact that usually, in our employment of them, they are combined." (A842) More definitely and directly in respect to metaphysics as a science he says "that the mere degree of subordination (of the particular under the general) cannot determine the limits of a science; in the case under consideration, only complete difference of kind and of origin will suffice."

It is well known that Kant claims to have connected for the very first time a standard principle and a methodical leitmotif for the fundamental distinction of these types of cognition and so to have created for the first time the conditions for a "scientific" metaphysics. Until then one "noticed not a special kind, but only a certain precedence in respect of generality, which was not sufficient to distinguish such knowledge from the empirical. For among empirical principles we can distinguish some that are more general, and so higher in rank than others." This distinction is not only absolute, but above all necessary to the condition for a system of reason:

The schema, which is not devised in accordance with an idea, that is, in terms of the ultimate aim of reason, but empirically in accordance with purposes that are contingently occasioned (the number of which cannot be foreseen) yields technical unity; whereas the schema which originates from an idea (in which reason propounds the ends a priori; and does not wait for them to be empirically given) serves as the basis of architectonic unity; not in technical fashion, in view of the similarity of its manifold constituents or the contingent use of our knowledge in concreto for all sorts of optional external ends, but in architectonic fashion, in view of the affinity of its parts and of their derivation from a single supreme and inner end, through which the whole is first made possible, can that arise, which we call science, the schema of which must contain the outline (monogramma) and the division of the whole into parts, in conformity with the idea, that is, a priori, and in so doing must distinguish it with certainty and according to principles from all other wholes.

Accordingly, only a schema which is designed with a view to the idea of reason itself, is capable of achieving systematic unity. Technical unities have, without Kant expressly noticing it, the scientifically insufficient form of a mere aggregate. It holds for the schema of reason, that it is the design of a whole and its division from one principle a priori. The second necessary condition for a possible system of metaphysics is the distinction between the philosophical and mathematical knowledge of reason. Both kinds of cognition have in common that they are a knowledge of reason a priori, which is organized in synthetic judgments a priori. Kant criticizes a certain distinction between both kinds of cognition with respect to the object which says that "the former, the philosophical, has as its object quality only, and the latter the mathematical quantity only. In this kind of distinction "the effect is taken for the cause." This form of mathematical knowledge is regarded as the true cause for its being traceable to quanta. This difference of form is seen as that between a knowledge from concepts (philosophy) and "a knowledge gained by reasons from concepts" (mathematics). It is only from this difference of

form that there results a difference in regard to the categorical determination of objects: "For it is the concept of quantities only that allows of being constructed, that is, exhibited a priori in intuition; whereas qualities cannot be presented in any intuition that is not empirical."

The above-mentioned difference of form means that a mathematical concept, as, for example, that of the triangle, can be so constructed in pure idea, that the constructed figure not only makes clear the corresponding concept in an exemplary way, but also at the same time guarantees it "universal validity for all possible intuitions which fall under the same concept." On the other hand, "I cannot represent in intuition the concept of a cause in general except in an example supplied by experience." That is the reason why this concept requires beyond its clarification by such an example a proof of its necessity and universal validity. Mathematical and philosophical knowledge are, according to Kant, based on the condition of a schematization of their concepts. But the schematization of mathematical concepts in the construction thereof gives their objects, while the corresponding schematization of the philosophical fundamental concepts gives only the necessary condition for the concepts to be able to be brought into relation with the objects of experience. This basic difference in the form of philosophical and mathematical knowledge has, however, important methodical consequences: definitions, axioms and proofs play here and there an outstanding role as methodical instruments. Kant did not demand that one completely do without these instruments in philosophical knowledge, but that one should become aware of their specific difference of performance in the respective knowledge of the object.

Form and Object of a Science.

So, he concludes, for instance, in regard to the definitions "that in philosophy one must not imitate mathematics by beginning with definitions, unless it be by way simply of experiment." For "neither empirical concepts nor concepts a priori allow of definition," the former do not "for since we find in it only a few characteristics of a certain species of sensible object, it is never certain that we are not using the word, in denoting one and the same object, sometimes so as to stand for more, and sometimes so as to stand for fewer characteristics." In the other case concepts do not a priori allow for definition "for I can never be certain that the clear representation of a given concept, which as given may still be confused, has been completely effected, unless I know that it is adequate to its object."

The third condition for a possible system of metaphysics is directly connected to the above two. It demands not simply a fundamental distinction between the pure knowledge of reason and the empirical knowledge of understanding, in the sense that the first is to be attributed with an unconditional and absolute universal validity. Beyond that it demands also analogy regarding the respective relationships between objects and regarding the necessary conditions for the possibility of such relationships:

The understanding is an object for reason, just as sensibility is for the understanding. It is the business of reason to render the unity of all possible empirical acts of the understanding systematic; just as it is of the understanding to connect the manifold of the appearances by means of concepts, and to bring it under empirical laws. But the acts of the understanding are, without the schemata of sensibility, undetermined; just as the unity of reason is in itself undetermined, as regards the conditions under which, and the extent to which, the understanding ought to combine its concepts in systematic fashion. But although we are unable

to find in intuition a schema for the complete systematic unity of all concepts of the understanding, an analogon of such a schema must necessarily allow of being given. This analogon is the idea of the maximum in the division and unification of the knowledge of the understanding under one principle.

The analogy says accordingly: The various categories in respect to the pure concept of the understanding a priori, allow themselves to be brought into relation to the unity of the extensive continuum (of pure intuition) under the condition of a principle of homogeneity and its application in the form of schemata, which respectively correspond to the categories. Analogously, the relation of reason to the unity of the understanding, or to the unity of a possible knowledge of the understanding, likewise demands principles after the analogy of those schemata in the form of principles or maxims:

Reason thus prepares the field for the understanding: 1) through a principle of the homogeneity of the manifold under higher genera; 2) through a principle of the variety of the homogenous under lower species; and 3) in order to complete the systematic unity, a further law, that of the affinity of all concepts - a law which prescribes that we proceed from each species to every other by gradual increase of the diversity." (A657)

Kant names these principles: "homogeneity, specification, and continuity of forms." They have the character of maxims, in respect to postulata, which apparently demand something contrary, but in fact they are only able to facilitate in mutual complementation the aim of reason, the completion of the systematic unity. So, the requirement that "rudiments (or principles) must not be unnecessarily multiplied (*entia praeter necessitatem non esse multiplicanda*)" must be combined with its complementary, namely, that the diversity of principles cannot be reduced without necessity (*entium varietates non temere esse minuendas*). But the third principle, according to Kant,

arises from the union of the other two, inasmuch as only through the processes of ascending to the higher genera and of descending to the lower species do we obtain the idea of systematic connection in its completeness. For all the manifold differences are then related to one another, inasmuch as they one and all spring from one highest genus, through all degrees of a more and more widely extended determination." (A658)

Just as Kant had distinguished between images and schemata as different conditions of the relationship of concepts to intuitions, and had accordingly distinguished these relationships themselves, so, too, in relation to an analogon of schema a corresponding distinction was indicated. The analogon of a schema is to be imagined as the plan of a universal division of a single and highest genus, which, for its part, can be made visually imaginable. Let us now inquire about the function of this analogon of schema in the construction of a systematic unity of all knowledge of reason.

The Architectonic Form of Knowledge.

In preparation for a possible answer, let us take a look at the theory of metaphysics which chronologically immediately precedes Kant's, but which in systematic terms represents an

interesting and relevant opposing concept. This is the theory of J.H. Lambert in his main work, "Conception for Architectonic or the Theory of the First and the Simple in Philosophical and Mathematical Knowledge" (*Anlage zur Architektonik oder Theorie des Ersten und des Einfachen in der philosophischen und mathematischen Erkenntnis*, 1771). Lambert intentionally chose the word "architectonic" as the title of his work. In doing so, he referred to Baumgarten's *Metaphysics*, where architectonic is equated with ontology, or with the *metaphysica generalis*. He justifies his use of the words: "It is an abstract from architecture, and, with its design on the structure of human knowledge, it has a quite similar meaning, especially in reference to the materials and their preparation and arrangement at all, and when the reference is such that one charges oneself with the aim of making an effective whole thereof." (XXIX)

Let us at first ignore the question whether the procedure of building a house can be understood as a process of inner growth according to Kant's idea of the unity of system. Let us first ask about the position of Lambert's theory with respect to Kant's premisses regarding the possible unity of a system of reason. The first impression is that in Lambert's theory none of these conditions is fulfilled and that, measured by Kant's standards of science, the theory must be rejected as unscientific. There seems to be (1) no clear distinction between the knowledge of reason and of understanding, and even less a unifying principle and a methodical leitmotif to depict the unempirical concepts of human knowledge in their completeness. Thus, there seems to be (2) no definite distinction between philosophical and mathematical knowledge; the conditions for Kant's critique which opposes determining mathematical knowledge from its object, quantity, seem to be fulfilled here. So we see an apparently natural use made of those methodical aids, definitions, axioms and proofs, which in Kant's opinion are primary and really permissible only in mathematics. Finally, there is also (3) no theory of the analogy between the object relations between the pure knowledge of reason and the empirical knowledge of the understanding in regard to their conditions of a possible relationship to intuitions.

However, on closer viewing, Lambert's "Architectonic" contains parts of a theory which can very well be brought into relation to those conditions of a system of metaphysics in Kant and can be compared with these. Thus, for example, (1) the methodical demand is made that a distinction must be made in ontology between simple and complex fundamental concepts, and so a demand of Kant's is met, that the concepts under examination are a priori "elementary concepts and be clearly distinguished from those derived or combined thereof." Further, there is (2) clearly a consciousness of the differences between philosophical and mathematical knowledge, not only in respect to the task of clarifying the first and simple concepts, but also in the critical evaluation of rudimentary definitions and above all in regard to a methodically fundamental distinction between *postulata* and principles; and, finally, (3) in place of a schema there is a register and table, which make visually imaginable the possibility of the combination of the first and simple concepts to make a system of metaphysical "fundamental doctrines."

Yet, throughout the whole "Architectonic" there is a fundamentally different methodical sequence. Thus, against the methodically fundamental principle of the metaphysics of Wolff-Baumgarten, which demands above all the definition of those first principles held to be unclear, Lambert has given priority to the answer to the question, "where the (first and simple) principles are from, how one reaches them and of what use they finally are." However, in this formulation one can at first see a direct parallel to Kant's inquiry after the origin and the function of elementary concepts, but not in the manner of the reply. Lambert also demands method in the answer to the question, but this method is fundamentally different from Kant's transcendental method which proceeds from the meagerness of the proof of the universal validity and necessity

of the elementary concepts. What then does Lambert's method consist of in regard to the definition of the origin and usefulness of the fundamental concepts? It consists, in a word, in a diversity of methods, for which the Aristotelian dictum holds that basically every object in its own singularity requires its own singular and adequate method.

Thus, Lambert requires, in accordance with his "provisional attempts, to at last find out, which of these methods would do," a provisional, exemplary idea of the methods themselves. The following procedures for the discovery of the origin of the fundamental concepts are named: (a) an abstraction from the manifoldness of examples, special cases, idioms, etc.; (b) a separation from the combination with other concepts, whether these are simple or complex, empirical or otherwise; (c) an examination of semantic fields and their histories in order to thus achieve grounds for the gaining of conceptually crucial parts; (d) the examination of the general imagery of language in regard to the distinction between the real meanings and their transposition, especially in the transference of the language of the physical world to the world of the intellect; and finally (e) the examination of the intentions and aims connected to the respective theory of concepts.

The latter standpoint concerns not only the manner of the clarification of origin, but also the usefulness of the concepts. As there, so here also, the different kinds of usefulness and the corresponding procedures for their definition are to be distinguished. Such kinds are:

1⁰ The indication of the special sciences and their parts, as to where the said propositions are applicable; 2⁰ a quantity of examples taken from the special sciences, by which the announced announcements is elucidated; 3⁰ the practical, insofar as the matters dealt with other tasks, which are concerned with dealing with something; 4⁰ the practical, insofar as tasks emerge, which are concerned with finding, explaining or defining something, etc.

It is precisely the last mentioned manner of usefulness, which we can elucidate by means of the key word heuristics, which plays an outstanding role in Lambert and "makes up a considerable part of the applied doctrine of reason." (XXVIII)

If one compares the doctrines of reason of Lambert and Kant as theories of the origin and use of pure elementary concepts in regard to the manifoldness of the sense of origin and usefulness, then the first of the two seems necessarily the one which takes the manifoldness of the standpoints more adequately into account and through its intentional distinction; it also takes into account the methodical standpoint of a critical preparation of metaphysics as a science. In contrast to this, the distinction of Kant's theory lies in the combination of a specific theory of origin of the elementary concepts with a special theory of their use in a unifying theory, which, as a transcendental philosophy, should form the scientific foundation for a system of metaphysics. Lambert makes as a basic methodical demand that there is required, above all in the treatment of abstract concepts, "the distinction between the different kinds of origin, causes, intentions, natures, etc." As a result the "architectonic" remains in regard to the origin and usefulness of its basic concepts directly and intentionally connected to experience. Further, in contrast to transcendental philosophy, which, as an unempirical science, wishes first of all to prove the reference of experience in the pure knowledge of reason, experience remains possible.

System as the Unity of Inner Qualities.

The comparison of both "architectonics" in regard to the area of possible experience leads, however, to a key problem which Lambert entitled that of a theory of qualities. If one "understands" by that "the true inner qualities," then according to Lambert these "are still far too unknown to be able to think of a real theory (of them)." In the most cases, in which the word is used, one thereby shows a mixture of qualities, relationships and combinations, but not true, individual qualities. This theory is further directed critically against the metaphysics of Wolff-Baumgarten. First of all it is against its general part, the ontology, insofar as this pursues a basic division of its object area into a theory of inner and outer predicates of the object as such (*ens quatenus ens*). It also touches the central area of metaphysics, the simple substances, on the theory of which is based the possibility of rational cosmology, psychology and theology.

This problem of the true, inner qualities, and with it that of the simple substances has now, however, found expression in Kant's philosophy, especially in its definition of the relationship of transcendental philosophy and metaphysics. One aspect of this expression is the basic distinction between nature in its formal and material meaning:

If the word 'nature' is taken only in its formal meaning, as it signifies the first inner principle of all that belongs to the existence of an object, then there can be as many natural sciences as there are specifically different objects, of which each must contain its own singular inner principle of a definition pertaining to its existence. Otherwise, nature is also taken in its material meaning, not as a composition, but as the concept of all objects, insofar as they can be objects of our senses and 'consequently' of our experience, by which therefore the whole of all appearances, that is, the world of the senses with the exclusion of all non-sensual objects is understood.

Certainly, what Lambert noticed in respect to the possible progress of metaphysics holds true for all sciences: "that a science, of which one can claim to elucidate within a certain period of time or to straighten out at the Leipzig fair, having first made a settlement with a publisher, is no science." Kant also tried to sustain the idea of progress in metaphysics by referring to its school concept in relation to the truth. But at the same time he was in earnest concerning the idea of the inner growth of the idea, which already contains in its schema the whole according to its possible division. The position regarding the problem of the inner qualities and the simple substances forms a kind of preliminary decision about the concept of progress in metaphysics. Lambert has linked the progress to the progress in its individual, theoretical parts, as for example in the general theory of form of the theory of qualities. The latter, for its part, depends upon the continuation of empirical research. Kant, on the other hand, tried to make the continuation of metaphysics--at least on the level of thought--independent of the continuation of the empirical sciences. This aim was served particularly by the above-mentioned distinction between nature in its formal and material meaning.

Transcendental philosophy forms the basis for metaphysics by its critical limitation to the object area of nature in its material sense. Accordingly, a scientific metaphysics constitutes itself as the system of phenomenology of the pure knowledge of reason. This scientific metaphysics is based accordingly on the bracketing of the concept of inner, true predicates and simple substances, to which those relate. The analogon of a schema in the form of the systematic unity of the principles of homogeneity of specification and affinity holds, for its part, only under the condition of this critical limitation. In Lambert's theory, too, we find a principle, which we can

regard as corresponding to this analogon of schema. One can call this principle that of the optimum, that is, of the best possible number of data, that is, of conditions.

Lambert interprets this optimum as the minimum of principles or of simple, primary concepts: "Every science, (and, with that, metaphysics, also, insofar as it wishes to be a science) should lead to one's being able to find, in any given case where it is applicable, from the smallest number of given parts, the remaining parts which are determined by or related to it." (par. 15) Accordingly, the "Table of the Fundamental Doctrine" contains a minimal register of basic concepts, but it illustrates^b beyond that a minimum of possible combinations amongst these elementary concepts (whereby not every combination and permutation is possible). In contrast to Lambert's "Minimal principle" Kant's analogon of schema combines an absolute minimum in the form of one single, general, and highest principle with a maximum of division of the whole for an optimum of systematic unity. According to Kant, this optimum makes possible a principle, which we can regard as a variant of the principle of coherency, the principle of the continuity of forms, which, on the basis of the principle of affinity, continually facilitates the transition from the genus to the species. In a negative characterization it is said:

And since there is thus no void in the whole sphere of all possible concepts, and since nothing can be met with outside this sphere, there arises from the presupposition of this universal horizon and of its complete division, the principle: non datur vacuum formarum, that is, that there are not different, original, first genera, which are isolated from one another, separated, as it were, by an empty intervening space, but that all the manifold genera are simply divisions of one single highest and universal genus. From this principle there follows, as its immediate consequence: datur continuum formarum, that is, that all differences of species border upon one another, admitting of no transition from one to another per saltum, but only through all the smaller degrees of difference that mediate between them." (A659)

But, as has been said, the above-mentioned limitation to nature in a material sense holds good, not only for the knowledge of the understanding, but especially for its hypostatization in the pure knowledge of reason. Therefore, there are no inner and true qualities of objects to be found in the system of reason and relatable to simple substances. One cannot simply say that the principle of coherence is damaged in Lambert's table. Coherence is, rather, defined definitely, not as the law of continuity of forms, but as the regulatively determined combination of the primary, simple concepts, which is defined more closely in general principles. This table leaves room at the same time for concepts of substance, of force, and for the Leibnizian calculus of qualities. Both theories, Lambert's and Kant's, have one thing in common in the dissimilarity of their effort on behalf of metaphysics. Their respective metatheory, serving the purpose of such a foundation as science, conceals, each in a different way, a basic question of metaphysics, namely the extent to which its concept is bound to a theory of simple substances and to the inner, true qualities of things.

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CHAPTER III
TRUTH, JUSTIFICATION AND METHOD IN METAPHYSICS
AND THEOLOGY

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So far as their constructive progress and development are concerned, metaphysics and theology are becoming increasingly difficult fields of study in these closing decades of the twentieth century. The simplistic views and formulations that satisfied philosophers in previous centuries have been tried and found wanting, even though they may be based on insights of permanent value. In their growth to maturity, these subjects are now becoming "hard" ones, akin to the "hard sciences," leaving their "soft" progenitors in the wake of history. More austere methods of thought and of writing than heretofore are now required. Prominent among these are those based on modern logico-semantics, which, as Whitehead observed prophetically many years back, will proceed to lay the foundation for aesthetics and to "conquer" ethics and theology.

Let us begin with a brief survey of some recent work aimed at harmonizing metaphysics and the sciences, and then go on to some general comments concerning certain current and widespread misunderstandings as to the use of logical methods. These latter will focus primarily on the semantic notion of truth and the problem of justification, which problem, it will be contended, is essentially the same for metaphysics as for the sciences.

In his *Forgotten Truth*, Huston Smith makes much of the numerical character of mathematics, neglecting perhaps the fact that, in its type-theoretic or set-theoretic format, quantity plays a relatively small role in mathematics.¹ Further, he thinks that "numbers and their logical operators are the only symbols, or rather signs, that are completely unambiguous: 4 is 4 and that is the end of the matter." But much depends here upon the set theoretic structure provided, each different set theory giving rise to a different characterization of '4', indeed even to different "meanings." And if the underlying logic is taken as a many-valued logic, say, there turn out to be many alternative numbers 4 to consider. Thus the situation in mathematics itself is not quite so clear-cut as Smith would have us believe. Now "the alternative to numbers is words," Smith contends. Where numbers are signs, words are symbols, and therefore by their very nature equivocal: their ambiguity can be reduced but never eliminated." Such a contention needs a considerable defense, especially in view of recent work on the logical form of natural-language sentences and the problem of "disambiguation."² In fact, it is very doubtful that the language or languages of mathematics, and the "exact" sciences in general, differ very much from natural languages in the use of "signs" rather than "symbols" or in the matter of containing or not containing ambiguous sentences. In each case the ambiguous sentence presents itself for disambiguation--unless of course it is the very richness of ambiguity itself that is aimed at. The difference between numerals and words is less sharp than Smith would have us believe. Nor is it true that "logicians flee . . . [the] meanderings [of words] in favor of fixed and adamant glyphs. The despair of logicians is the humanist's glory." In the logical analysis of language the meanderings are squarely faced and codified, and the humanist's glory is thus quickly becoming a subject for the logician's purview. The situation is similar to that concerning the language of mathematics a few generations back.

One of the key differences between what Smith calls 'the primordial perspective' and the contemporary one is, according to him, just that the scientist counts and measures and the

humanist, more particularly, the metaphysician and theologian, does not. At several points in some recent papers, however, it has been suggested that the use of numbers in theology is not ill-advised.³ In fact, their use leads to a deeper, more subtle, and more sensitive characterization than has been available heretofore of certain topics concerned with the divine will. Of course, at this stage these are mere suggestions, but surely ones with a good deal of further heed.

Whitehead contended, in a famous adaptation from Walter Pater, that "all science as it grows towards perfection becomes mathematical in its ideal." This is of course very questionable. Let us construe science in a broad sense, as with Whitehead, to embrace all domains of systematic knowledge or *Wissenschaften*. A safer historical description would then be to the effect that all *Wissenschaften* as they grow towards perfection become logistical in their ideal, and thus lend themselves to the application of a semantical predicate for truth. In particular, then, even the more or less traditional theism, which Smith refers to as the *philosophia perennis*, is of course included here. Elsewhere the attempt has been made to show in detail how some strands of the perennial tradition--the *philosophia perennis* is not just one view, but several woven a bit loosely together--may be formulated in a sufficiently precise a logistical way to allow a clear-cut notion of truth for the language-system involved.⁴ In discussing the forgotten truth of traditional theism, we should be sure not to forget the truth-predicate of modern semantics.

"The multivalence of language enables it to mesh with the multidimensionality of the human spirit," Smith continues, "depicting its higher reaches as numbers never can. Equations can be elegant, but that is a separate matter. Poems cannot be composed in numbers." These are not the words of a poet such as Valery or Berryman, both of whom spoke frequently of the exactitude in the use of words in writing poetry--as exact as that of the mathematician in his use of numbers, Berryman once remarked in one of his more sober moments. The multidimensionality of the human spirit need not be neglected if our discourse concerning it is to be suitably formulated or articulated in modern terms.

According to Smith, science, in the narrow sense as practiced by professionals, is limited in its exclusion of discourse concerning values, purposes, life meanings, and quality. We cannot be sure in advance, however, that sciences allowing such discourse will not develop in the course of time. But even so, theological discourse accommodating such topics can be formulated in a relatively precise, even *wissenschaftlichen*, way to some extent as regards values, purposes, and life meanings, as has been shown in the papers referred to. As regards duality, surely the material of Nelson Goodman's, *The Structure of Appearance*:⁵ to which Smith makes no reference, is an important attempt to subject discourse about quality to cogent logical form. In all of these examples, a theory is formulated with sufficient precision to allow the application of a semantical truth-predicate.

A similar point has been made by I.M. Bochenski in his *The Logic of Religion* (pp. 62-63).⁶ "But man is constituted in such a way that he always tends to axiomatize his discourse; and the religious man is no exception in this respect. There will be, consequently, a more or less pronounced tendency in believers to order . . . [their religious discourse] by axiomatizing it. Such an axiomatization is the field of what is called 'theology' (or 'Buddhology') in the strict meaning of the term" Under 'axiomatization' here one can include partial formalizations also, about which more will be said below; in any case the applicability of suitable truth-predicates to the sentences of any such theory is assured. Once these and other such caveats to Smith's book have been registered, there is much that is admirable in his discussion of the parallels and divergencies between science and *philosophia perennis* as he conceives it. In calling attention to the parallels, he emphasizes general descriptive similarities rather than specifically methodological ones. For

each (pp. 98 ff.), "things are not what they seem" at first blush unaided. In each "the other-than-the-seeming is a more; indeed a stupendous more." In each, "in their further reaches the . . . mores cannot be known in ordinary ways" but rather "admit of being known in ways that are exceptional." Further, "the distinctive ways of knowing which the exceptional regions of reality require must be cultivated," and such "profound knowing requires instruments." In science the instruments include both theoretical constructs and telescope, spectroscope, and the like, whereas in the philosophia perennis they are the "revealed texts, or scriptures or "ordering myths" of that tradition accepted as definitive. Smith's discussion of these parallels is illuminating and surely on the right track. As we go further along the track, however, sameness of ontology might be discovered, some one basic soul or mind-stuff of which matter, mind, soul and spirit are all specific manifestations. But this is for the future perhaps, and Smith finds enough that is striking in restricting discussion to the results of contemporary science.

On the methodological parallels between science and religious discourse, Bochenski is more enlightening. He notes (in *The Logic of Religion*, pp. 61-62) that "from the logical point of view, the situation in RD [religious discourse] is very similar to that which we find in the discourse of natural sciences. The P -sentences [the sentences of objective faith directly accepted by the believer] play in RD a role closely similar to that of experimental sentences in those sciences. The only question which may arise in both cases is whether the given sentence really does belong to the class under consideration, that is, whether it really is a P -sentence, or a duly established protocol sentence. . . ." Once this is determined, the parallel is evident. Bochenski gives (on pp. 64-65) a "comparative table" as between methods in physics and theology. The physicist "starts (theoretically) with experimental sentences" just as the theologian "starts (theoretically) with P -sentences." The physicist then "explains the experimental sentences by other sentences from which the former may be deduced." The theologian similarly "explains the P -sentences by theological conclusions which are such that from them P -sentences may be deduced." The physicist "deduces from the explanatory sentences new ones which may be verified by experiment" just as the theologian "deduces from the theological conclusions new sentences, which may be verified by seeing if they do belong to P ." Both the physicist and the theologian "explain the first-grade explanatory sentences by further explanatory sentences in the same way" and verify such sentences by examining their consistency with other sentences in the system." And finally, just as the physicist "introduces new 'theoretical' terms not found in protocol sentences" the theologian "introduces new 'theological' terms not to be found in P -sentences."

The various items of this table are not intended to provide an exhaustive, or even wholly accurate, description of procedure in either science or theology. Such a description, it seems, has never been given for either, owing no doubt to the sheer difficulties involved. Nonetheless, the table is valuable in calling our attention to methodological parallels usually overlooked, and helps to supplement Smith's list of similarities.

In the chapter, "Justification of Religious Discourse," in *The Logic of Religion*, Bochenski considers several theories concerning "the activity by which the acceptance of a (meaningful) sentence [of RD] is justified." These comprise in particular the "blind-leap" theory, the "rationalistic" theory, the "insight" theory, the "trust" theory, the "deductivist" theory, the "authority" theory, and the "theory of the religious hypothesis." It is clearly the last that he favors, but curiously gives it no more space than the others, which for the most part he dismisses as inadequate. Let us glance at Bochenski's theory of the religious hypothesis and then reflect how, one by one, the other theories may be viewed as contributing to it. The comments here,

mutatis mutandis, concern scientific and metaphysical hypotheses equally well, as Bochenski himself observes.

The gist of the theory of the religious hypothesis is that "the believer constructs before the act of faith, as an explanatory sentence, the very BD [basic dogma] of the religion concerned. This sentence--called here '[the] religious hypothesis'--serves to explain his experience." Formally, Bochenski goes on to note, "the procedure by which the religious hypothesis is established is closely similar to that used in reductive [abductive] sciences. The starting point is experimentally established sentences. The hypothesis is such that they may be deduced from it; it permits predictions and can be verified by new experimental sentences." It should be observed, however, as Bochenski notes, that the experimental sentences of a given science form a much narrower class than those relevant to the religious hypothesis, the latter including all manner of sentences concerning the personal life of the believer, sentences concerned with moral, social, and aesthetic values, and so on. All such sentences must be formulated in a sufficiently precise way, for the relevant semantical truth-predicate to apply.

The very breadth of the sentences relevant to a religious hypothesis explains the difficulty of the believer's persuading someone else of its truth or acceptability; the other person's experiences may be very different. "No two persons have the same total experience and, consequently, a hypothesis which seems to be quite plausible to one of them does not need to appear to be plausible to the other" Also the difficulty in overthrowing someone's religious hypothesis by falsification is due to its very great generality. As Bochenski notes, "one must be very little instructed in the procedures of science to think that a dozen facts inconsistent with a great physical theory will lead automatically to its rejection. But the religious hypothesis seems to be far more general--that is, it covers far more sentences--than even the most general scientific theory. Therefore, it is much more difficult to overthrow it." The generality is not, however, that of containing "more sentences," for in both an infinity of sentences must be allowed. It is rather that the religious hypothesis is more general in its relevancy to more kinds of sentences than in a science, or even in all the sciences put together.

Bochenski goes on to reflect upon explanation and prediction on the basis of a religious hypothesis, but no crucial differences emerge as between these and explanation and prediction in the sciences. Of course the vocabulary of the religious hypothesis is broader, and a great deal of work needs to be done to characterize that vocabulary in a logically acceptable way. Some useful steps in this direction have perhaps been taken in some of the papers already referred to.

There is enough germ of truth in the other theories of justification Bochenski discusses to suggest that some aspects of them may be incorporated in the theory of the religious hypothesis. In the blind-leap theory the believer makes a "leap" from "nothingness to full faith without any logical or experimental foundation." Well, not without any, but perhaps with very little. This need not matter once the religious hypothesis is firmly accepted. Some features of a "rationalist" theory are incorporated in the theory of the religious hypothesis, in particular, use of the methods of logical deduction-reduction or discovery also, if and when reliable rules of reduction or discovery such are formulated. Once a religious hypothesis is held, there is "trust" in it and in the objects it deals with. And of course "deductions" are made in particular from the general hypothesis to further experimental sentences. Also the role of authority may be helpful to some in calling attention to relevant experimental sentences, to the very nature and formulation of a religious hypothesis, and to its deductive consequences. In some such ways as these, then, there may be seen to be some little grain of truth in all of the other theories. Bochenski states most of them, it might be thought, in so severe a form as to make them unacceptable.

There is also much in George Schlesinger's recent discussion of theism and scientific method that is admirable.⁷ He claims (p. 201) "that the traditional theist need not recoil from examining his basic propositions by a method of inquiry which adopts the standards employed in science. On a correct understanding of the essence of scientific method, Theism does not stand to lose from such an inquiry; in fact it gains, emerging from it with enhanced credibility." The author does not deny that (p. 2)

the classical theistic hypothesis greatly differs from the kind of hypotheses advanced within science. . . . Yet the question whether all the laws of nature and the initial conditions are what they are without there being anything behind them, or that they are what they are because of the will of a minded, very intelligent, and powerful being seems intelligible in a very straightforward manner, no less than many questions asked by scientists and more so than some questions asked by metaphysicians.

We are thus invited to view God as somehow incorporating the "laws of nature" and the "initial conditions." Finally, the implicit aim of the author is "to exhibit the richness of the philosophy of religion" and "to show that it impinges upon nearly every important topic in philosophy in general," especially upon some crucial ones in the philosophy of science concerning confirmation and confirmability.

To give an even moderately accurate description of scientific method is no easy task, as already remarked, and it is far from clear that Schlesinger has done this. His description revolves around two "elementary principles," Principle A and Principle E. The latter is (p. 157) that "when a given piece of evidence E is more probable on H than on H' then E confirms H more than H'." Principle A is (p. 161) that "when H and H' are similarly related to all the available evidence, we regard H as more confirmed than H', if and only, H is more adequate than H'." Much is made of these two "principles," which the author contends "are inevitably to be employed [by scientists] when searching for any hypothesis." It is claimed that they are "justified" and that they characterize the very heart of scientific method. The principles cry out, however, for a clear-cut foundation in which such key terms as 'more probable than', 'confirms', 'more confirmed than', and 'more adequate than' are fully explicated. In view of the immense difficulties encountered by all attempts at the explication of these notions as applicable to scientific language-systems of even comparatively simple a structure, it is unlikely that we should accept Schlesinger's principles at the face value he asks. Also they must be intimately related to the detailed characterization of observation, experiment, the making of hypotheses, testing, verification, and so on and on.

Even if we remain within the domain of scientific languages, we are overwhelmed with the amount of work needed to "justify" these principles. But this is as nothing compared to what is needed if our language is augmented to enable us to state the thesis of theism. Schlesinger never states it, incidentally, nor does he explore the nature of the terms needed for such statement. He assumes apparently that this is all easy sailing. But it is not, as should surely be evident from the papers referred to. Not only the key notion of God, but such "analogical" words as 'omnibenevolent' and 'omnipotent', need exact definition. One could perhaps reply: the tradition tells us perfectly well what these terms mean. But this of course is not the case, if the thesis of theism is to be stated in sufficiently precise a way that the exact techniques of logic, semantics, and confirmation theory may be applied to it. Schlesinger frequently uses the terms 'logically compatible', 'logically possible', and the like, in ways that also need further clarification as to

just what kind of a "logic" is being presupposed: a first-order logic? a higher-order one? one containing suitable meaning postulates? and so on.

Schlesinger claims "that by employing the most elementary principles underlying scientific method we may construct certain aspects of the world as constituting empirical evidence confirming Theism." He never states how much evidence, however, nor is it clear from his account that the evidence for theism is actually greater than for some alternative. Also the use of the truth-predicate is essential in any clear delineation of a theory of confirmation, so that here too we should not attempt to justify "forgotten truth" without at least a passing glance at 'true' in the semantical sense.

In his recent *Atheism and Theism*⁸, Errol Harris also discusses the problem of "The Rational Basis of Theism" in a pivotal chapter with that very title. Although the metaphysical ambient of his discussion is very different from that of Smith, Bochenski and Schlesinger, there is a similar underlying aim. Harris, however, thinks that "formal logic"--and therewith presumably confirmation theory also--is not appropriate for attempting to delineate the rational basis for theism, it being (p. 67) "appropriate to only a certain level of thinking." Another kind of logic is needed "which is universal in its scope" (p. 68) and which "displays itself in specifically different phases of thinking, of which formal logic (in any of its forms) is only one." This universal or "dialectical" logic, Harris thinks, is sui generis and cannot be formulated as an applied formal logic in the usual sense, that is, with suitable non-logical constants as primitives and with appropriate meaning postulates concerning them. However, Harris has nowhere, either here or in his other writings, even so much as hinted at a single rule or principle of such a logic formulated with the necessary rigor in modern terms. It is therefore not clear how he can be so sure about its nature, and how it differs from modern formal logic, prior to any suitable formulation. Such surety in advance inevitably leads to blocking the road to inquiry, one of the worst of all methodological sins according to Peirce.

Whatever "dialectical" logic is, there is no reason to suppose that it cannot be formulated, along with other metaphysical views, on the basis of formal logic in the modern extended sense. Harris, like Findlay, seems to conceive of formal logic in terms of its state of development prior to 1910 or thereabouts, and both seem to refuse to allow the subject to grow.⁹ If only they would take account of recent developments, they would see how inappropriate their strictures of it really are. Of course, formal logic must now be taken in the wide sense in which it has been taken here.

That the techniques of modern logic are an inestimable help to metaphysicians is a commonplace among those who use them. Indeed, so great is this help that they wonder how it was ever possible to do without them. Although the use of such techniques is becoming more and more widespread, there are many who resist them and, as already suggested, like Peter Damian see in logic the machinations of the devil himself. Much of this resistance, it seems, rests upon misunderstanding of one kind or another. It is safe to say that no one who takes the trouble to master the intricacies of modern logic continues his resistance for very long. But many things stand in the way of being motivated to attain this mastery. Let us reflect for a moment upon the most important of these, with the aim of removing some of the misunderstandings surrounding philosophic logic, its nature and scope, and the use of logical methods in metaphysics generally. Most of these points have been made elsewhere, but no harm will come from reminding ourselves of them here.¹⁰

In the first place, we should not think of logic in just the sense of *Principia Mathematica*, say, or of axiomatic set theory. Such "logics," if such they be, are in some respects too restricted,

and in others too inclusive. They are too inclusive in embracing vast portions of mathematics in their scope, and too exclusive in not embracing logical semiotics (syntax, semantics, and pragmatics), as well as the calculus of individuals, a theory of intensionality, and an event logic. These latter are the very stuff of which metaphysics is made, the areas of theory most helpful to the philosopher, and curiously, the very ones to which least attention has been paid in recent years.

Nor should we think of logic as being the exclusive possession of logical positivism, as is so often done even now, these many years after the virtual demise of that view. The subject-matter neutrality of logic has often been pointed out. It is true, of course, that the positivists were pioneers in using logic for philosophic purposes, and this perhaps is their most lasting contribution--the really positive part of positivism, as it were. But it is also widely recognized that other kinds of philosophers may reap its benefits also, as has been emphasized by thinkers so diverse as Gilbert Ryle, Heinrich Scholz, K. Godel, Charles Hartshorne, and Frederic Fitch.¹¹

Closely related with Ryle's point is one made by the English mathematician A.B. Kempe as long ago as 1886.

Whatever may be the true nature of things and of the conceptions which we have of them in the operations of reasoning they are dealt with as a number of separate entities or units. These units come under consideration in a variety of garbs--as material objects, intervals or periods of time, processes of thought, points, lines, statements, relationships, arrangements, algebraical expressions, operators, operations, etc., etc. . . .¹²

In all discourse, philosophical or otherwise, the entities dealt with are thus to be handled as separate units. Some of them are given proper names, and usually they are taken as values for variables--or if not, they are handled as constructs in terms of entities that are. That this is the case seems to be a necessity of discourse if the "operations of reasoning" are to take place, and without such operations there can be no philosophy--in the Western sense--worthy of the name. Josiah Royce also made essentially the same point in 1914 when he noted that

without objects conceived as unique individuals, we can have no Classes. Without Classes we can . . . define no Relations, without relations we can have no Order. But to be reasonable is to conceive of ordersystems, real or ideal. Therefore we have an absolute logical need to conceive of individual objects as the elements of our ideal order systems. This postulate is the condition of defining clearly any theoretical conception whatever To conceive of individual objects is a necessary presupposition of all orderly [thought and] activity.¹³

Again, some of these objects are given proper names, and some surely are taken as values for variables. These objects are variously grouped into classes; or, as we say equivalently, certain properties are ascribed to them, and certain relations hold between or among them, these classes and relations usually being regarded as designated by suitable predicates.

It is often very difficult to be able to decide what predicates are to be taken as primitives and which are to be defined via suitable nominal definitions. There is often considerable latitude here and to some extent the choice may be arbitrary. Every predicate occurring in the system must be either primitive or defined--there is no other possibility. Once the primitives are chosen, as a result usually of a good deal of trial and error, the remaining predicates are defined. Although defined predicates *sensu stricto* may always be eliminated, the definitions of them "are at once

seen to be the most important part of the subject," as Whitehead noted in 1906. "The act [of giving a definition] . . . is in fact the act of choosing the various complex ideas which are to be the special object of study. The whole subject depends upon such a choice."¹⁴ Here again there are often alternatives, with difficulty in selecting the most suitable.

Once primitives are decided upon, suitable axioms or meaning postulates are needed to characterize them. But before it is profitable to axiomatize, a great deal of analysis and experimentation must take place, presystematically as it were. It is often advisable to try to determine what principles or laws are to obtain, irrespective of which are ultimately suitable as axioms. The problem of axiomatization is often a merely technical or mechanical one once a suitable parade of principles is laid out. Thus we should not disparage what are often spoken of as partially formalized systems, systems in which the full primitive vocabulary is fixed, as well as the formulae and some at least of the crucial principles, but without specification of axioms. We can often make enormous headway with only partially formalized systems. In fact, it is likely that such systems are of greater interest for metaphysics than fully formalized ones. Metaphysics --in its preliminary stages anyhow--seems to have more to do with the basic vocabulary chosen, the kinds of terms and formulae admitted, and general principles characterizing that vocabulary, than with any specific choice of axioms.¹⁵

Even in partial formalizations a very considerable technicality usually results. Of course, in these days technicality is unavoidable, whether we use partial formalizations or not. Peirce noted years back that the philosophy of the future would have to employ a "fiercely technical vocabulary." Indeed, it is difficult to see how this can be avoided in an age of highly sophisticated methodologies such as our own. This is a circumstance we must accept and welcome, for fierce technicality is with us whether we like it or not. Gone is the day when philosophy can be done in just common-sense terms with horse-and-buggy procedures, as already suggested above. It is interesting to note that the latest word, even from Oxford, is to this effect.

Those who insist upon keeping metaphysics close to ordinary language must now face the fact that the analysis of ordinary language itself is slowly giving way to the exact study of logical form. The problem of "representing" or mirroring ordinary sentences or texts in exact logical or semantical structures is one of the most important problems in contemporary structural and transformational linguistics. Although still in its infancy, the study of logical form promises to revamp to its very roots the metaphysical study of language. Enormous progress has been made in this kind of work in recent years, which cannot be overlooked by the metaphysician who wishes to keep abreast of contemporary developments.

Sometimes it is contended that the use of logical methods in philosophy depends more heavily on language, and how we say it, than on what is said and on what is being talked about. Language takes over and true philosophy is given short shrift. This contention of course misses the point that semantics is now a part of logic, and that semantics is the study of how words relate to objects and how sentences relate to what is meant. Thus there need be no neglect of the objects talked about or of what is intended to be said about them.

Sometimes it is contended that the use of logical methods in philosophy provides a kind of "straight-jacket" or rigid form which does violence to the subtlety of what is intended -- the fit is never quite right. Logic distorts, so we had better abandon it altogether. The answer to this kind of objection is a question tu quoque. Is the fit ever quite right if natural language is used? A similar point used frequently to be made by Philip Frank about physics. No physical theory ever quite encompasses or explains all the phenomena we would like it to. There are always a few

recalcitrant circumstances that refuse to fit. Clearly there should be here a two-way adjustment. We must seek ever-more comprehensive theories, which, however, are not to be abandoned, *ceteris paribus*, to fit a few recalcitrant circumstances. Physics is a vast, integrated edifice not easily to be upset.

A similar point has been made by H.L.A. Hart (in conversation) about the use of logical systems in the law. If the system is too narrow, let us go on to make every effort to formulate more comprehensive and adequate ones for the purposes at hand.

Another objection frequently brought against the use of logical methods in philosophy rests on the contention that such methods are appropriate only for the sciences and perhaps for the philosophy of science, but not for the more "humane" parts of philosophy such as aesthetics, ethics, theology, and metaphysics. Such a contention is to make a fundamental duality where there is none, as already noted. Of course there are important differences among these subjects, just as there are important differences among the sciences. Some methods are useful in some and others in others. But logic is common to all of these, being not only subject-matter neutral but closely interwoven with the very texture of language.

It is interesting to recall, looking almost two millennia back, the contention of Plotinus that dialectic is "the precious part of philosophy: in its study of the laws of the universe, philosophy draws on dialectic much as other studies and crafts use arithmetic, though, of course, [italics added] the alliance between philosophy and dialectic is closer" (*Enneads*, I.3.5-6). Now semiotics here is in essentials merely dialectic in modern garb. As a matter of fact, semiotics is of much greater interest for, and help to, philosophy than is mathematics. The alliance is closer. Mathematics and logic have always been strange bedfellows anyhow, and never stranger than in the recent proliferation of metamathematical and model-theoretic techniques for philosophical purposes.

There is an increasing use of logical methods in analyzing and reconstructing the great historical metaphysical views. Sometimes this is holistic, sometimes piecemeal. Such work can be very illuminating in updating views or arguments that might otherwise languish as mere historical curiosities. The aim of such work is in part historical, to help see precisely what is being said. But it may also be reconstructive and may part in very substantial ways from the historical text. Again, such work may be useful in helping to preserve what is of permanent importance. Inevitably this kind of work will increase in the years to come. The great historical views die hard, and rather are *semper reformanda* in the light of new knowledge.

Of course, logic-cum-semiotics is itself also under continual development. We must not suppose it fixed once and for all for a new dogmatic slumber. New methods and formulations should be welcomed in an open-armed, inquiring spirit. But at the same time, progress in logical matters is slow and difficult and not every nouveaute can pass the critical scrutiny demanded of it. As a matter of fact, there are fewer alternatives than is commonly supposed, once analyzed to their logical bedrock with maximum logical candor.

There is also the "it can't be done" attitude. Logical methods may be suitable for some purposes but not for others. Sometimes the "it can't be done" is insisted upon dogmatically. The Dutch intuitionist Brouwer for years apparently insisted that his mathematical views could not be formalized. Over the years, however, the work of Heyting and others, with ever improved formulations, convinced him that they could be. Of course nothing succeeds like success, and the best way to convince those who think that it can't be done is to go ahead and do it. Often of course a few easy phrases will not suffice for this, but only years of hard work.

Progress in metaphysics is par excellence "progress in clarification." Progress in the sciences, or in society, is something else again, to say nothing of progress in the arts if there is any. In metaphysics, however, the great historical views must be continually kept alive by viewing them in the light of what we now know. This is almost always a matter of more adequate formulation of precisely what the view is, of probing more deeply into its foundations, of showing it adequate in this or that respect in which it was previously thought wanting, in showing how it may be brought into accord with modern science, and so on. The conscious use of logic is almost a sine qua non for such progress.

Some metaphysicians are impatient of logical methods, claiming that they accomplish too little for the effort required. This is rarely the case, however. The situation is rather the other way around, that is, new problems and difficulties emerge under closer logical inspection, problems that would not have been seen otherwise. In this way logic is often a means of genuine discovery. Nelson Goodman has pointed out that

I cannot hold the logical philosopher up . . . as a man who has found a magic key to all the riddles of the universe; rather, he seems to have found a way to cause himself of good deal of trouble. It is true, as the unlogical philosopher and the unphilosophical logician often point out, that the way of the logical philosopher is much like that of any transgressor.¹⁶

He transgresses the bounds of conventional philosophy with deeper, more thorough, and more searching formulations, and he insists that "unphilosophic logic" itself be subject to the same philosophic scrutiny as are other systems, especially as regards ontic commitment and ontic involvement--this latter being the ontic commitment of the metalanguage.¹⁷

By "logic" throughout has been meant, of course, a semiotics based upon the standard first-order theory of quantification, as already remarked, without sets, classes, or relations as values for variables in any wise or form. Some logicians find this too severe a restriction, and wish to include also a higher-order logic, a set theory, and perhaps also a model theory, or semantics of "possible worlds" as well. There are many objections to including these, not least of which is the excessive ontic commitment and involvement. We do not wish "our logic . . . to be responsible for more of our ontology than is the extralogical part of our system," as Goodman has put it (ibid., p. 39).

And some of us are not willing to countenance . . . abstract entities [such as classes, relations, and sets as values for variables] at all (if we can help it) either because we are nominalists or because, for the sake of economy, we want to commit ourselves to as little as possible. If either nominalism or plain parsimony leads us to insist upon a logic that is not committed to abstract entities, then we shall have to forego a large part of the usual modern logic--namely, most of the theory of classes and relations. This will make the going hard The difficulty of doing without a philosophically objectionable technique is not, however, any sufficient reason for retaining it.

These admirable statements are beyond reproach and totally persuasive. Even so, we should go one step further: We do not wish our logic to be responsible for any ontology at all, irrespective of whether it be more or less than in the extralogical part of our system. Otherwise we should have to give up one facet of the requirement of subject matter neutrality.

It is often complained that logical philosophy is excessively complicated, too many symbols are used, the formulae are too long, and so on. But of course, once the new problems are opened up, the unlogical philosopher must now do without symbols and formulae what the logical philosopher can do with them. The situation is thus just the other way around. The problems are there and can no longer be avoided, and nonsymbolic procedures are seen to be intolerably complex in handling them or perhaps not able to do so at all. And in any case, the problems are usually more difficult than the unlogical philosopher supposes, as Russell pointed out at the end of his "On Denoting."

I will only beg the reader not to make up his mind against the view [put forward]-as he might be tempted to do on account of its apparently excessive complication--until he has tried to construct a theory of his own. . . . This attempt, I believe, will convince him that, whatever the true theory may be, it cannot have such a simplicity as one might have expected beforehand.¹⁸

Finally, a word concerning "verification" and "validation." Both topics raise problems of enormous difficulty in the methodology of the sciences and hence a fortiori in that of metaphysics and theology. Only a few items need be mentioned here. No easy comments concerning these topics are forthcoming at the present stage of research--there is just too much that we are ignorant of in the methodology of the sciences. However, there is progress in the right direction, it is hoped, to which attention may be called.

The analysis of both verification and validation must be given in terms of truth. To verify is to find that a given sentence is true, or at least to come to accept or take it as true. To validate is to verify a sentence of general form, whereas we verify only a singular sentence. Sophisticated methodology of the sciences makes use of the notion of degree of verification, the degree of the strength of one's acceptance of an hypothesis. As already suggested, there is every reason to think that such a notion will also prove useful in metaphysics and theology.

Variant notions of probability loom large in contemporary methodology of science. For the most part, these are confined to contexts of a purely extensional kind. Methods are readily forthcoming, however, for handling probability statements in all manner of intensional contexts via the Fregean notion of the *Art des Gegebenseins*, the notion of an entity's being taken under a linguistic description.¹⁹ Thus, instead of speaking of the probability of a class, say, relative to a given reference class, we must speak instead of the probability of that class under a given *Art des Gegebenseins* relative to that reference class, likewise as taken under a suitable *Art des Gegebenseins*.²⁰ The use of probability notions in intensional contexts can be accommodated in this way--subjective probability, confirmation or logical probability, as well as statistical probability.

Finally, it would seem all but impossible to discuss verification and validation--and indeed justification also--very deeply without a theory of human acts or actions, which in turn would rest upon a prior theory of events. We need not take events as the only realities, as the process metaphysicians would have us do. But we must at least at some stage recognize events, actions, processes, and states happening or taking place or occurring. And we must recognize that the logical properties of such occurrences differ radically from those of non-eventual entities.

In sum, then, there is no royal road to metaphysical knowledge. The problem of verification and validation in metaphysics presupposes that for the sciences, and if anything is more difficult. The domain of principles or axioms required is wider as well as the admitted types of verificatory experiences, as Bochenski has pointed out. Adequate discussion of these topics is

thus very difficult and must await adequate solutions to the corresponding problems for the sciences. There is no special metaphysical insight here that enables us to skip over the formidable difficulties involved. The situation is rather the other way around. Metaphysical insight itself should help us to find adequate solutions to these problems as confined to just the sciences, which then can be used for the wider purposes at hand.

These various comments are by no means intended to supply a thorough analysis of the role of logical methods in metaphysics and theology, but only as a few reminders of points that are often misunderstood or neglected. Readers familiar with those methods will have found them for the most part superfluous; those who are not are invited to join the sodality of those who are in order to get on with the metaphysical jobs ahead of us.

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NOTES

1. Huston Smith, *Forgotten Truth, the Primordial Tradition* (New York: Harper & Row, 1976), pp. 12-13.
2. Recall some of the material in the author's *Semiotics and Linguistic Structure* (Albany: The State University of New York Press, 1978).
3. See the author's "On God and Primordality," *The Review of Metaphysics*, 29 (1976): 497-522 and "Some Thomistic Properties of Primordality," *The Notre Dame Journal of Formal Logic*, 18 (1977): 567-582.
4. Cf. the author's *Truth and Denotation* (Chicago: The University of Chicago Press, 1958).
5. (Cambridge: Harvard University Press, 1951).
6. (New York: New York University Press, 1965).
7. George Schlesinger, *Religion and Scientific Method* (Philosophical Studies Series in Philosophy, Dordrecht: D. Reidel Publishing Co., 1977).
8. Errol E. Harris, *Atheism and Theism* (Tulane Studies in Philosophy, Vol. XXVI: 1977).
9. Cf. John Findlay, "Ordinary, Revisionary, and Dialectical Strategies in Philosophy," *Erkenntnis* 11 (1977): 277-290.
10. Cf. *Truth and Denotation*, Chapter I, and the author's *Logic, Language and Metaphysics* (New York: New York University Press, 1971), Chapter I.
11. See especially Gilbert Ryle, *Dilemmas* (Cambridge: Cambridge University Press, 1954), and Heinrich Scholz, *Metaphysik als Strenge Wissenschaft* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1965, but first published in 1941).
12. A.B. Kempe, "A Memoir on the Theory of Mathematical Form," *Philosophical Transactions of the Royal Society*, 177 (1886), 1-70.
13. See Royce's *Logical Essays*, ed. by D. Robinson (Dubuque, Iowa: Wm. C. Brown Co., 1951), p. 350.
14. A.N. Whitehead, *The Axioms of Projective Geometry* (Cambridge: Cambridge University Press, 1906), p. 2.
15. Cf. *Truth and Denotation*, pp. 17ff.
16. N. Goodman, *Problems and Projects* (Indianapolis and New York: Bobbs-Merrill, 1972), p. 40.
17. See the author's *Existence, Belief and Meaning* (New York: New York University Press, 1969), Chapter II.
18. *Logic and Knowledge* (London: George Allen and Unwin, 1956), p. 56.

19. See *Translations from the Philosophical Writings of Gottlob Frege*, ed. by P. Geach and M. Black (Oxford: Blackwell's, 1952), pp. 11 and 57.

20. See the author's "On the Language of Causal Talk: Scriven and Suppes," *Pragmatics, Truth, and Language* (Dordrecht, Boston: Reidel, 1979), pp. 192-205.

CHAPTER IV
SOME PRINCIPLES OF PROCEDURE IN METAPHYSICS
CHARLES HARTSHORNE

METAPHYSICS AS NONEMPIRICAL THEORY OF REALITY

Popper's definition of 'metaphysical' is the most useful one: statements are metaphysical or nonempirical if no conceivable observations would falsify them. Metaphysics is trying to clarify ideas so general that any experience must be compatible with them. This means, not that no experience is relevant to their truth but that any experience, actual or conceivable, is relevant. Hence empirical falsification--or, in the usual sense, verification--is ruled out.

Objections to a metaphysical statement must be on conceptual rather than observational grounds. It is, however, a conceptual objection to argue that no experience illustrative of the meaning of the statement can be conceived. Without illustrations an idea cannot be clarified, and only experience, actual or conceivable, can provide the illustrations. The other basic objection is inconsistency. It is characteristic of metaphysicians, in their weaker moments, to try to escape charges of inconsistency by refusing or failing to provide unambiguous experiential meanings for their terms. Consider Spinoza comparing his "modes" in "Substance" to drops of water in an ocean, or to the three-sidedness of triangles. Neither example really does the job assigned to it. I am perfectly convinced, that Spinoza did not clearly know what he meant by "modifications" of Substance. It was a non-idea, not a false idea.

The not unreasonable Aristotelian-Whiteheadian "ontological principle" that the abstract is real only in the concrete implies that if we understand concreteness we also understand abstractness, and hence that a proper theory of concreteness will sum up metaphysical knowledge. So I define metaphysics as theory of concreteness. Also, since we can give meaning to 'real' or 'concrete' only by their illustrations in experience, and since an experience includes whatever is given in it so far as given, theory of concreteness coincides with theory of experience. This is what idealists of every type (but hardly materialists or dualists) have seen, however unclearly. The problem is to clarify the insight.

The objection to metaphysics that there may be several metaphysical systems all equally clear and consistent in themselves but incompatible with one another (so that only empirical evidence could decide among them) rests on a myth. The sufficient reply is, Show us two such systems. Every metaphysics in history has had its aspects of unclarity or dubious consistency. Mutually incompatible but internally flawless systems are by that very feature shown to be unmetaphysical. They are not on the final level of generality, but in some fashion specializations.

Take Leibniz's Principle of Sufficient Reason. Is it clear and selfconsistent? Either one simply assumes the full definiteness of the concrete and particular as there in the reason, so that the problem repeats itself, or one is claiming to get the more from the less, the logically stronger from the logically weaker, a plain fallacy. Either way sufficient reason for the particulars is lacking. It took Leibniz's genius to hide the absurdity with wondrous subtlety. Nonarbitrary contingency is noncontingent contingency. Similar remarks could be made about Spinoza's attempt to show the necessity of his "modes". Metaphysical failures are not factual mistakes, they are failures to make full sense. Every metaphysician sees this as true of his opponents.

At the heart of Hegel's Logic there is a logical blunder, which is found centuries earlier in Chinese Buddhism. The blunder is in supposing that if A and B are similar, or different, then

each requires the other to be itself. Of course A cannot resemble or differ from B without B. But it does not follow that A requires this relation to be itself. Eisenhower resembled and also differed from Washington, and this relation doubtless meant something to Eisenhower. But it meant nothing to Washington, and it is not evident that there was any such relation in Washington's world. If A exists but B does not, then A has and needs no relation to B, not even as a definite possibility. Hegel (and his Chinese predecessors) violated the logic of comparison relations. Russell, holding that no concrete entity requires any other, in an opposite way also violated that logic, as can be seen from the standpoint of another and greater logician, Charles Peirce. I refer to Peirce's concept of Secondness or dependence--which at least in some cases is nonmutual.

The objection that metaphysics must be a priori yet synthetic involves ambiguity. Judgments are formally analytic or synthetic, but what is formally synthetic may become analytic when undefined meanings are reasonably defined. Metaphysical categories require each other: if there is necessity, there is contingency; if independence then also dependence. Universal symmetrical denials of dependence (Hume, Russell) or of independence (Spinoza, Blanshard) destroy their own meanings (Maxims 5b and 10 below).

Metaphysical questions are conceptual, and conceptual analysis must answer them. Linguistic analysts are right in this. But they tend to be monolithic empiricists in the nonPopperian fashion; or to analyze chiefly trivial matters, or extreme cases of bad metaphysics (arrived at by violating one or more of the 14 maxims we are about to consider.) Also conceptual and linguistic are not in all respects synonyms.

SOME MAXIMS OF METHOD

I find the following maxims of metaphysical method useful. 1. Take human experiences as the initial samples of concrete reality or actuality, and try to explain the abstract or potential in terms of aspects of concrete experiences.

2. Look to practical life and its most general pre-suppositions for the indispensable ideas and ideals that philosophy, including metaphysics, is to clarify and purify.

3. Trust terms in ordinary (or, in some science or nonphilosophical discipline, standard) language -- for their ordinary or standard purposes; trust terms standard for some school of philosophy only so far as they prove explicable by ordinary or truly standard terms, together with examples from direct experience or practical life.

4. Do not overestimate the ease with which the metaphysical import of experience and practice is to be discerned, considering

a) that it is the unusual, not the universal or essential, aspects of experience which stand out;

b) that there is no reason to think our human awareness can ever be without qualification "clear and distinct", like that which theologians attribute to deity; and

c) that consciousness is selective; hence, without suitable guiding ideas as to what to look for in experience we are likely to miss much that is relevant to our quest.

5. For such guiding ideas look to mathematics or formal logic, as (however successfully or otherwise) Peirce did in his categories of First, Second, Third, and Aristotle did in his use of the

distinction between substance and property as analogous to that between subject and predicate.
Examples:

a) Take relations of dependence to be of primary importance, since all inference turns on them;

b) Interpret symmetrical relations as special cases, as equivalence (biconditioning) is a special case of the normally one-way or simple conditioning or dependence;

c) Look for ontological correlates of the modal terms possible, necessary, contingent;

d) Distinguish levels of abstractness or of logical strength, and avoid the fallacy of misplaced concreteness;

e) Avoid fallacies of division (e.g., "tables do not feel, therefore the molecules in tables do not feel") and fallacies of composition (e.g., "stars and planets do not feel, therefore the cosmos as a whole is insentient").

6. Seek formally exhaustive divisions of possible doctrines (employing less crude devices than mere dichotomies, rather at least trichotomies, thus all, some only, and none), and search for principles by which to eliminate all but one possible doctrine.

7. With contrary doctrinal extremes (e.g., all relations external, all internal) look for an intermediate position combining the advantages and avoiding the disadvantages of both extremes.

8. Use experiential falsifiability (Popper) not verifiability as primary criterion of "empirical", or non metaphysical.

9. Be cautious about asserting the zero case, as in "such and such is not experienced"; remembering that while observation of X as present may establish its presence, inability to detect a presence is not always equivalent to detecting the corresponding absence ("no elephants here" may be safe, but "no microbes here" risky). Not to know that we experience something is not the same as not to experience it. Negative introspection is even more fallible than positive introspection.

10. Honor the principle of contrast, avoid saying that absolutely "everything" is such and such--unless you want the such and such to be as devoid of distinctive character as the most general idea of entity, in contrast to bare nothing.

11. Since metaphysics is searching for the most general meaning of 'concrete', try to find ideas applicable to every thing conceivable as concrete, (and singular, note maxim 5e above), though (maxim 10) not to absolutely everything, singular or collective, concrete or abstract.

12. Expect such ideas to be variables with uniquely great ranges of values, rather than constants or definite values under a variable. (Example: causal determination of events by previous events, and creative transcendence of such determination, may be viewed as matters of degree, whereas classical determinism takes the determination to be absolute or infinite and the creativity to be zero. The absolute degree and the zero degree are, at best, infinitely special cases, not general principles. They are therefore suspect as metaphysical. (And it is a matter of logic that they could not be established empirically.)

13. Since universal ideas must be variables, not constants, and since deity is a universal idea (knowing all, influencing all, etc.), expect God to be a variable with infinite range of possible values, not a mere constant--in some sense the most flexible and alterable of all realities, in spite of being the most secure of identity and permanence. See this combination as the problem, not the mere absence of change or novelty. Learn from Carneades and Hume (also Barth, Berdyaev,

and many other modern theists) to distrust the simplistic idea of God as wholly immutable cause of all change.

14. Keep the lines of communication open with various forms of philosophizing, and with various religious, scientific, aesthetic specializations: also, look for rational grounds for agreeing or disagreeing with other philosophers, living or dead, and for better causes of disagreements than the self-serving one that the others are stupid.

THE APPEAL TO EXPERIENCE

Maxim 1 is a revision of Descartes' cogito. The point is not that everything except one's self can be doubted. Doubting is not "as easy as lying." The point is rather that initially the natures of both the given "self" and the given "world" are problematic, by comparison with momentary experiences. We know what it is like to experience; for each moment we remember more or less vividly how we have just previously been feeling, thinking, perceiving and remembering. But the self as something always the same yet always different is initially a puzzle; also, though we cannot, except verbally (by the pragmatic test) doubt that a worldly Something includes us and much else; the character of this something is by no means initially clear. Were it clear, the two thousand, or three thousand, years of natural science would scarcely have been needed and would have yielded results less mysterious than the present ideas of electrons, etc. Through memory we know what experiences are like, but how much does mere perception tell us about the nature of physical stuff or process? Memory relates experience to experience; subject and object are here alike, and both are somewhat well known in their intimate qualities. Perception relates human experiences to the things least like them, "inanimate objects". Materialists talk as though perception were no problem, while memory, the experience of experience, is a problem. They are trying to explain the best known by the least known, the most alien to our self-knowledge and hence most difficult to understand.

Subjective idealism is the opposite mistake. If memory is self-awareness, perception is the nonpersonal aspect of givenness, how the nonself is given. Those who hold that only one's own mental states are given are denying that perception occurs. This is one of the perennial sophistries, hoary with age. It can hardly survive the application of Maxim 2, and is open to other objections.

It remains true that whereas (in spite of Husserl¹) physical realities are as genuinely given as are our experiences, it is the experiences whose essential properties are initially better known. We can, apart from science, know how remembering differs from perceiving and both from anticipating the future, or how hope differs from fear, and so on and so on, much more definitely and surely than we can know what it is to be a rock, cloud, or tree. And even the physicists are deeply puzzled by the question, What is matter? set over and above the mathematics that enables us to deal successfully with it.

Husserl could almost be said (in his *Ideen*) to have tried to derive all wisdom by the application of Maxim 1, with little attention to anything like the other Maxims. This has always, since I encountered Husserl in 1923-24, seemed to me a naive and unfruitful way to philosophize. What we need to know is indeed there in experience, but a turtle or a baby has experience. To extract from experience its deepest message is not to be accomplished simply by gritting one's teeth and determining to give complete and exclusive attention to the given. That is not how the human mind is able to get knowledge. God may derive all wisdom from divinely intuited *Evidenz*, but we can derive very little by simply staring at the given while trying to

forget the world given in experience, or (the Epoche) trying to persuade ourselves that while it seems to be given it may not exist at all. This begs the whole question of realism.

The source of the error is not far to seek. It has two aspects. a) All human intuition is indistinct, as Democritus, Epicurus, and Leibniz sagaciously saw. We have no God-like "clear and distinct" intuitions, certainly not of the data of perception. b) The other aspect is a natural but unwarranted assumption about dreams, that they are "mere mental states" for which no real givens exist. Quite the contrary, in all dreams, as Bergson so well describes, actual bodily states are intuited. In my dreams I find all sorts of physical, bodily, conditions as directly intuited. It follows that the hypothesis, "suppose all experience were like dreams," does not yield the conclusion, "then there would be no physical world." Rather the argument must run, suppose all experience were as dreams and a certain theory of what dreams are were true, then there would be no physical world. This argument is worthless; for no one knows what dreams, so described, could possibly be. The notion of mere mental state, of experience without data, real givens, is no better than the notion of a proposition that affirms only itself. "Experience not of an existing world" is mere verbiage, for all anyone can show. So it does not matter what conclusions may seem to follow from the use of this verbiage. Heidegger, Ortega, and the French phenomenologists, also Wittgenstein and Ryle, agree at this point, and I see this as a fairly definitive judgment on one aspect of Husserl's enterprise.

In the previous paragraph points (a) and (b) mutually support one another. It is the indistinctness with which the world is given that makes it so easy to misinterpret the evidences of experience and misdescribe dreaming experience. The apotheosis of this latter error is Malcolm's essay on dreaming. As he told me, Malcolm had not read the essay of Bergson, the best philosophical writing in all the centuries on what dreams are. Malcolm here badly violated Maxim 14 as well as Maxim 9. Indeed he violated Maxim 3, for, as he admits, in talking about dreams one has to use the language we employ about waking experiences, whereas Malcolm wants to deny that there is a significant analogy between waking and dreaming awareness.

The literature of metaphysics is vast. But of this literature how much expresses thought that proceeds according to a defensible methodology? Attacks on metaphysics can stress real weaknesses, for there has been plenty of bad metaphysics. But nothing follows about the impossibility of at least relatively good metaphysics. That issue is still open.

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**COMMENT on Charles Hartshorne,
"Some Principles of Procedure in Metaphysics"**
JAMES W. FELT

A few years ago a philosopher wrote: "The vague whole truth and the sharp half-truth about philosophic fundamentals--for these we scarcely need professional or full-time philosophers. It is the sharp vision of the whole truth we ask of the philosophic profession."¹ The philosopher was Charles Hartshorne and in the present essay he has given us a persuasive bit of evidence (if we had none other) both that he practices what he preaches and that metaphysics is alive and well in America.

The essay is remarkable first of all for its unity of viewpoint. It exemplifies Bergson's statement that "a philosopher worthy of the name has never said more than a single thing"² It is also remarkable for its reflective balance, its historical wisdom, and its tautness of expression. It is itself proof that metaphysics is possible and worth doing. It lays emphasis on concreteness as experiential, on memory as more importantly constitutive of experience than perception, and on the ineluctably objective character of experience.

Yet there are positions taken in the essay with which I am distinctly uncomfortable, and for the sake of discussion I should like to single them out. Doubtless some of my difficulties stem from misunderstanding, but I suspect that in larger part they are symptomatic of a different view of how to go about doing philosophy. Perhaps it is a matter of emphasis, for in another place, though unfortunately not also here, Professor Hartshorne wrote: "Since technical logic alone cannot establish a metaphysics, intuitions being also needed, and since these, at least as put into words and conceptualized, are not infallible or invariable from person to person, how far philosophers can ever agree is deeply problematical" (CSPM, xviii). Not only may some such divergence of intuitional viewpoint obtain between us; in this paper he seems to write as if he had forgotten the importance which he earlier attributed to intuitional thinking.

I therefore briefly mention, in order of their appearance, difficulties which I find with the essay.

(1) By way of preliminary clarification, we must understand the first paragraph of the essay in the light of Hartshorne's Maxim 9 and his caution in another place against confusing "what is not observably present" with "what is observably absent" (CSPM, 79). The philosopher who does not observe in his experience value or aim or the feeling of causal derivation, would not necessarily have observed their absence. But why is Popper's definition so very "useful" for metaphysical procedure? Popper devised it not so much to do metaphysics as to discriminate it from empirical science. To say that experience, any experience, cannot fail to have the universal characteristics of all experience, hence cannot be observed to lack them, is indeed true, perhaps even tautological, but does little to get us started metaphysically. What interests us in metaphysics, I should think, is rather the "divination" (as Whitehead put it) of just what those characteristics are which all experience has. And I see no way of doing this apart from a kind of intuitive observation, even though it is not "observation" in the usual empirical sense of the word.

(2) I therefore think it fallacious to say flatly, "Objections to a metaphysical statement must be on conceptual rather than observational grounds." I even wonder whether Hartshorne quite believes it himself, at least in practice. For he grants, as we have seen, the need for intuitions, and are not these more fundamentally observational than conceptual? In another place, for

instance, in refuting the proposition: "There is a beauty of the world as a whole, but no one enjoys it," Hartshorne argues: "Even in thinking 'the world as a whole', we enjoy a glimpse of its beauty, or we should not have this thought. There is no experience and no thought absolutely without aesthetic fulfillment" (CSPM, 289f.). Does Hartshorne's conviction rely on conceptual analysis or rather on direct intuition?

(3) I do not think that Hartshorne's response to the objection he raises early in his essay is satisfactory. For the sake of clarity I expand this objection a little, as I understand it: "if metaphysics lives up to its Popperian definition, then there could arise equally clear, internally consistent but mutually inconsistent systems with no way of telling which is true and which false, since empirical observation is excluded. But this amounts to admitting that their truth or falsity has no sense, hence that they are equally nonsensical."

To this objection, if I have it right, Hartshorne gives two distinct replies: (a) that there are not in fact two or more such "clear" systems; (b) if there were, they would by that very fact be unmetaphysical, merely specializations of some more ultimate (metaphysical) system.

But it is true only if we insist on an unreasonably rigorous sense of clarity. I think that few would quarrel with Hartshorne's own observation (CSPM, 69) that he knows of no system, including his own, which is ideally and patently clear. But if we take "clear" more realistically, does not the objection still have weight? I am sure I could find philosophers of several other viewpoints who are convinced that their own systems are just as clear and internally consistent as Hartshorne's; who find his conceptual argumentation unconvincing; and who might with some plausibility claim that their systems are more faithful to experience than his. Surely that is the sort of claim Whitehead made when he criticized Hume or mechanistic determinists. Like Wordsworth, his complaint was not primarily logical or conceptual but intuitional (I would even say observational): that something had been left out of their accounts which nevertheless constituted an important part of experience.

Reply b, on the other hand, seems no more effective. Even if we grant that, in the nature of things, there is only one possible ultimate metaphysical system, the valid conclusion to be drawn is not that both systems referred to must be unmetaphysical, but rather that at most one of them can be metaphysical. The interesting question is which, if either, is faithful to reality. The practical concern lies in choosing between competing metaphysical systems, or bettering one we have, and for that I submit that appeal to experience plays just as fundamental a role as logical analysis.

(4) "Metaphysical questions are conceptual," writes Hartshorne (p. 8, par. 3), "and conceptual analysis must answer them. Linguistic analysts are right in this." (See also CSPM 94). But is not this a heavy overstatement and even a violation of Maxim 10? To be sure, some metaphysical questions are conceptual. Also, in an earlier quotation Hartshorne acknowledged the distinction between intuitions and their embodiment in words or concepts. Nonetheless, I believe that Bergson was nearer to the truth when he asserted that the method of metaphysics is "mainly intuition" (CM, 42), however much he may have overstressed its function to the neglect of metaphysical conceptualization.³ Has not Hartshorne given away too much to the linguistic analysts?

(5) Does not the second half of Maxim 3, amount to a kind of reductionism, even perhaps an instance of what Whitehead called the "Fallacy of the Perfect Dictionary"?⁴ Perhaps I have not understood how Hartshorne means the words "explicable" and "together with," but it sounds as if he means that the technical terms of a metaphysics cannot denote ideas which are not in common use. Yet he admits with Whitehead, that in many ways philosophy is akin to poetry. Is an

ultimate metaphysical principle, such as Whitehead's 'Creativity', really "explicable" by ordinary terms, any more than is Eliot's 'stillpoint' in Four Quartets?

(6) Maxim 5 identifies what Maxim 4 called the "guiding ideas as to what to look for in experience," and it tells us that we should "look from the outset to formal logic." I find this astonishing. Or does "from the outset" mean only "to start with, not necessarily to finish with"? Surely it is not in virtue of the principles of formal logic that we recognize, for instance, that all experience is fundamentally value experience, or that it has the character of ongoing synthetic process. And even though we grant that the principles of formal logic arise from the structure of experience, it does not follow that all that is important, or even that most that is important about the structure of that experience will be reflected in formal logic. Yet Hartshorne says that it is to formal logic that we should turn in order to know what to look for in experience.

(7) I cannot agree (Maxim 13) that deity is a universal idea, and certainly not just on the grounds that 'God' is defined as knowing all, influencing all, and so forth. But even if we can define 'God' in purely universal terms, this is more a descriptive than an essential definition. That whatever exemplifies the definition is unique does not, it seems to me, make the notion 'God' universal. And notice how the first sentence of Maxim 13 begins with "universal ideas" but ends with "the most flexible and alterable of all realities" (not "notions" or "realities"). Even if we grant that the idea of God is universal, we begin the sentence with an idea and end it, voila, with God (not 'God'), a reality (not a notion). It is not hard to sense here the affinity in Professor Hartshorne's thinking with the ontological argument, even if one did not know he had written books about it.

(8) In summary it seems to me that Hartshorne stresses too much the logical, and too little the phenomenological, aspect of metaphysical method. In doing so he gives the impression of a kind of apriorism that maps out the logical structure into which real experience must perform fit. This is too Procrustean for my taste. In a well-known passage Whitehead wrote: "The true method of discovery [in metaphysics] is like the flight of an aeroplane. It starts from the ground of particular observations; it makes a flight in the thin air of imaginative generalization; and it again lands for renewed observation rendered acute by rational interpretation."⁵ It seems to me that by the use he has made of Popper's definition of metaphysics Hartshorne has prevented himself from landing again in experience, for, as he says, "objections to a metaphysical statement must be made on conceptual rather than observational grounds." Does he in fact disagree with Whitehead's notion of metaphysical method? If he does, it seems to me a retrogression rather than an advance.

Yet I commend Hartshorne's conclusion, that many instances of bad metaphysics do not prove it is pointless to try doing good metaphysics. It recalls the parallel conclusion drawn by another philosopher of our century: "If metaphysical speculation is a shooting at the moon, philosophers have always begun by shooting at it; only after missing it have they said that there was no moon, and that it was a waste of time to shoot at it."⁶

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NOTES

1. Charles Hartshorne, *Creative Synthesis and Philosophic Method* (London: SCM Press, 1970); hereafter 'CSPM'), p. 93.

2. Henri Bergson, *The Creative Mind* (New York: Philosophical Library, 1946; hereafter 'CM'), p. 132.
3. For an attempt at restoring the balance see my "Philosophic Understanding and the Continuity of Becoming," in the *International Philosophical Quarterly* (1978), 375-93.
4. *Modes of Thought* (New York: Capricorn Books, 1958), p. 235.
5. *Process and Reality* (New York: Macmillan, 1929), p. 7; my emphasis.
6. Etienne Gilson, *The Unity of Philosophical Experience* (New York: Scribner, 1937), p. 309.

COMMENT on Richard L. Barber,
"Metaphysical Knowledge as Hypothesis"
ERROL E. HARRIS

In order to grasp the significance of Professor Barber's thesis it is necessary to know what he understands by the hypothetical, and this he nowhere explicitly states. However, it would appear that by hypothetical he means what is not immediately and originally disclosed in experience. What is immediate and original, then, will be categorical. Assertoric propositions could, presumably, be formulated only about what is immediately presented. Again, the objection to his position that Professor Barber considers implies that the hypothetical excludes certainty and so is, presumably, the purely problematic, an implication which Professor Barber does not repudiate.

The thesis we are to discuss then would seem to be that all metaphysical knowledge is problematic and is not itself immediately experienced. If I understand him aright, Professor Barber is maintaining that metaphysics is the inference to, or perhaps better, the hypothesizing of, the conditions on which our immediate experience, which is certain and indubitable, would be what it in fact is; and this must include the hypothesis of the conditions on which our hypothesizing would constitute an adequate explanation of what we immediately experience.

Now I find this position somewhat puzzling. Why, on this thesis, should anybody ever philosophize at all? If immediate experience were certain and indubitable surely it would require no explanation. If Professor Barber, or anybody else, were to object that one can be immediately certain of the presence of isolated particulars which are not self-explanatory and the occurrence of which in one's experience needs explanation, then I should demur. For to be certain of the immediate presence of a particular one must be able to identify it precisely, and that would involve relating it to a great number of other particulars, some present and others not. So the immediate certainty of the presence of any particular involves immediately certain knowledge of much else, which, if one has it, leaves no need or room for explanation. It is when and because such knowledge is lacking, when the elements of our so-called immediate experience conflict, or when there are gaps in its continuity, that we raise questions and seek explanations. And it is just for such reasons that Professor Barber finds explanation necessary. The totality of his experience, he says, is incomplete; its contents do not immediately include components or aspects which tell of their sources, and so forth. All of which is evidence of the uncertainty of immediate experience. And, if lack of certainty makes knowledge hypothetical, immediate experience will be as hypothetical as any other and our distinction between the hypothetical and the assertoric will collapse.

We may question further what experience is immediate, whether indubitable or not. Few nowadays will countenance the old empiricist dogma that sense-data are the immediate simple elements of experience. There is today widespread agreement that sense-data, as special objects of consciousness, do not exist, or at any rate are not immediately given (and so not strictly data). The common sense notion that sensuous perception is immediately given has been discredited by psychological evidence, and a tolerable consensus of opinion among philosophers of science is that all observation is theory-laden and that there is no theoretically neutral observation language. The doctrine of immediate intellectual intuition--whether of the 'simple natures' of Descartes, or of Aristotle--is equally dubious. The allegedly self-evident is always evident in the light of some background knowledge or with tacit reference to some systematic context. Even

cogito ergo sum is itself a discursive nexus of thought and being, a connexion of concepts which holds by virtue of a sophisticated appreciation of meanings derived from a complex system of ideas.

If the assertoric is confined to the immediate, and if no immediate knowledge can be identified, all knowledge once again becomes hypothetical; and this, or something like it, seems to be Professor Barber's own conclusion. Metaphysics he thinks is subject to high degree of uncertainty, but all other knowledge likewise, in inverse proportion to the limitation of its scope, is liable to some degree of uncertainty.

Such a position, however, is clearly untenable, for the hypothetical must rest upon a categorical base, and every conditional nexus must have factual ground. If all knowledge were merely problematic it would dissolve away into total ignorance. The objection frequently raised against the coherence theory of truth, that no proposition could ever be established if every statement depended for its truth on other statements, is valid against the view that all knowledge is hypothetical, for we should always be referred to prior conditions as the grounds of any supposition. There must be some firm ground on which to rest even doubts, and some categorical affirmations from which questions can arise. If all knowledge were merely probable there would be no basis on which to assess the degree of probability of any. Those who abjure certainty forget that probability is a degree of truth and can be estimated only by reference (tacit or otherwise) to some standard of verity which must itself be unquestionable. To abandon certainty altogether, therefore, is to embrace scepticism--a position which, if radical and unqualified, refutes itself by its own assertoric claim. Accordingly, we must, and we invariably do, claim categorical truth for some knowledge, and our question is whether metaphysical knowledge is to be included in what we assertorically maintain.

Clearly the categorical foundation of all our knowledge must be whatever ranks as the criterion of truth, and what that is only metaphysics can decide. It is true that different philosophers advocate different theories of truth, not all of which can be accepted. There must then be some hypothetical elements in metaphysical knowledge. But what nobody can deny except inconsistently is that there is and must be some ultimate truth--some criterion of judgment. So there must also be at least some categorical element in metaphysics as well, and it may well be that the categorical and the hypothetical are inseparable. In fact, the very nature of thinking makes their inseparability unavoidable.

Metaphysics, I have said, must necessarily assert the existence of an ultimate truth. This knowledge is not simply categorical but is apodictic. Now it is commonly held that necessary knowledge is so by virtue of necessitating conditions, so that all necessary propositions are really hypothetical. This is a doctrine put forward both by F.H. Bradley and by Bertrand Russell. It is maintained that the universal (which is likewise necessary) is always hypothetical: All S is P being equivalent to, If anything is S it is P. But the hypothetical asserts a nexus, and if the assertion is to be true the nexus must be grounded in fact. If what is S is also P it must be because of some factual character of both of the terms which connects them invariably. If whales are mammals it is because they suckle their young and breathe through lungs, etc. Consequently every hypothetical has a categorical aspect, and categorical, hypothetical and necessary are all inseparable. Metaphysical knowledge is thus certainly to some extent hypothetical, but it cannot be so exclusively, and for that very reason is also, and perhaps more essentially, both assertoric and apodictic.

There is, moreover, another reason why metaphysics is always categorical. It is a philosophical science and so, unlike empirical or exact (i.e., mathematical) science, it is self-

reflective. Whatever it asserts, therefore, must be true of itself and it must affirm the existence of its own subject matter. This is not true of other sciences. Geometrical propositions hold good whether or not there exist in actuality any perfect circles or dodecahedra. In fact, though the geometrician will usually tell us that such figures cannot be constructed with perfect exactitude, nevertheless everything that he demonstrates about them is necessary. But it is so only on the hypotheses that the geometer states: it is hypothetical knowledge. But philosophical sciences cannot be purely hypothetical, because whatever they affirm of their subject matter necessarily includes the thinker who affirms and who cannot, without self-stultification, call his own existence in question. Thus, when a metaphysician makes statements about reality in general, he necessarily includes himself in the subject of the statement. For he is part of reality and therefore whatever is true of reality in general must be true also of him. Of course, he may judge hypothetically of both, but then, as I have already said, the ground of his supposition must be what is actually true of the real. I cannot speak of a merely possible world of which I am a member because my own existence is for me an inescapable reality and cannot be a mere supposition.

Hence the subject matter of metaphysics cannot be merely suppositious as the subject matter of geometry may be. And Professor Barber himself hints at this necessity when he gives as examples of metaphysical questions: 'What is real?', 'what is the nature of "reality"?', 'What is it that is?', 'What is, or has, being?'. These questions, with one accord, make no question that there is some reality, that something has being, the nature of which is of primary significance and the ground of all else. Any attempt to deny this would be self-defeating, and its assertion is categorical. It is hardly debatable that it is also metaphysical and is therefore at least one exception to Professor Barber's thesis.

Many years ago an acquaintance of mine was being interviewed for a philosophical appointment. 'What is your attitude towards reality?' he was asked. He replied with firm assurance and perspicacity: 'I accept it.' Who, indeed, could do otherwise, and how could we do so merely hypothetically?

CHAPTER VI
INTRODUCTION TO THE PANEL: METAPHYSICS AND
SCIENCE

ANDRE MERCIER

Professor Agazzi, realizing the positivist and empiricist view of the proper task of reason, which is also held more or less by analytical philosophers, asserts that metaphysics has always been characterized by a "synthetic view" of reason. It is, he says, because of this kind of creative freedom that metaphysics has been mistrusted. But now it appears that science too needs a "synthetic use" of reason, for it is impossible to derive scientific theories from a mere analysis of experience.

Moreover, metaphysics is, according to Agazzi, a field of experience like science. Descartes was wrong when he held reason to be that which warrants certainty against doubt, but conversely the empiricists are also wrong, when they maintain that experience is the sole source of understanding. Actually, says Agazzi, there is a methodological affinity between science and metaphysics, even though the standards of rigor are different in one or the other.

Now, some philosophers allege certain negative features of metaphysics but not of science. They speak of a personal view of the world, a want of objectivity and the like--objectivity being understood as intersubjectivity. However, this is not quite so, even though metaphysics does not fulfill a criterium of intersubjectivity identical with that of science as is usually conceived. It is scientific discourse which is intersubjective: metaphysics, Agazzi says, is a discourse which claims the right not to take anything for granted, whereas science takes for granted a whole set of institutional criteria. Consequently, metaphysics must renounce the "comfortable" status of intersubjectivity of science, for it can promise nothing from the beginning of its enterprise. This is not arbitrariness or anything of the like. On the contrary, it is a feature of the extreme severity of metaphysical discourse proper inasmuch as it aims at being more than intersubjective. Hence if we interpret objectivity with intersubjectivity, metaphysics is not objective.

At this point I should like to interrupt my summary of Agazzi's paper to contend that it is correct to identify objectivity with intersubjectivity. I have indeed attempted in many of my publications to show that objectivity, which is a fundamental--indeed, the fundamental--mode of science, does not follow from an assumed intersubjectivity of science, but that intersubjectivity itself follows from the fundamental objectivity of science. There is an authentic intersubjectivity too in other enterprises of the mind, in particular in art, where art corresponds however to a subjectivity as its authentic mode of knowledge just as objectivity is the mode of science. Hence I refuse to assume intersubjectivity as a criterium of "scienticity," and an argument that says that metaphysics is not a science because it lacks intersubjectivity, is to my mind wrong. The fact that some kind of formal objectivity can be derived formally from some kind of formally defined intersubjectivity is no proof whatever of the assertion that objectivity follows from intersubjectivity. Any discourse, even wrong, can be put into a formalism. Here, of course, the word wrong means not formally incorrect, but not in agreement with the real.

Continuing with Agazzi's paper, he notes that metaphysical systems as world views are not arbitrary, because they must be in agreement with empirical evidence and it is a fact that all such systems as have been put forward have been suggested by "reality," either in order to reflect a special feature of reality or to avoid an aspect of reality as appears undesirable to logos. Metaphysics yields unitary pictures enabling an understanding of what has first been explained,

and curiously enough, Agazzi says, one cannot explain that which has not been understood beforehand. Hence, there must be a kind of global appreciation, i.e., even scientific theories reveal an important hermeneutic moment. Is it true, Agazzi asks, that such hermeneutic efforts are in metaphysics bound to personal intuitions? No, he answers, or only partially.

I should rather say that this is not--even though partially --a fact, as many anti-metaphysicians say, but a hypothesis which nobody can prove. Another difficulty which I encounter in Agazzi's text understanding is his sudden reversal, when he first says that one needs to understand what has first been explained, and then asserts that in order to explain one has to understand. Agazzi's next point concerns the apparent difference between a cumulative progress of science and a frustrating destiny of metaphysics. Metaphysics, it is said, tackles "eternal problems," while science gives clear answers to questions clearly put. Actually, Agazzi says, this is an oversimplified and optimistic view of science which of late has been severely criticized especially by Kuhn and Feyerabend. Not only is the positivist view wrong--and here, wrong has the same meaning as a moment ago--it is not in agreement with the modern conception of verifiability versus falsifiability (cf. Popper).

I should like to ask whether Kuhn and his school have really been the first to utter such a critique. While I recognize their merit, Kurt Huebner, has long taught similar things, not to insist upon authors who are long dead, going back to Duhem, or even those still active like Margenau and even myself.

The problem "What is progress?" cannot in our days be handled as it was in the 19th Century, as Agazzi, of course, knows. He asks: can a progress be ascertained in metaphysical inquiry? His answer is: yes, for certain things can no longer be maintained in the field of metaphysics. This, however, is a negative statement, whereas supporters of the idea of scientific progress argue with positive statements. There is, Agazzi notes, besides a global evaluation, also a local evaluation of progress in relation with "normal science" as produced by routine work until "the vein offered by a certain paradigm is exhausted." I like this metaphor, which of course is very Kuhnian. Metaphysics, he adds, works similarly and goes through its own paradigms too.

This is an important argument, and on many occasions I have noted the same about art, calling the attention of philosophers to the fact that what is called by Kuhn 'paradigms' in science has its counterpart in 'styles' in art. Styles become exhausted, each in its own time, and are replaced by radically "new" styles just as scientific paradigms do. It is therefore a feature, not of science alone, but of all human cognitive enterprises, including metaphysics. Therefore, science is not characterized by that particular feature.

The next point made by Agazzi is very important: if metaphysics, he says, is an effort of "knowing inside a belief," science is so too, within certain restrictions which do not count for metaphysics. These restrictions, if I understand him well, make the difference between metaphysics and science. Both have an affinity, but the deep distinction resides in their different thematic interest: the point of view of the whole for metaphysics, several limited points of views for the various sciences. He concludes that metaphysics, though right in claiming its cognitive status, cannot be attributed the additional character of being a science.

I do not quite see what this additional character is. If it is a question of addition, then a science is simply "metaphysics + this additional character." If metaphysics is ontology, I can agree that physics for instance is ontology too, but of what? To my mind, the additional character is not really additional but restrictive, viz., the explicit character of things considered by physics or science in general being finite, multiple and in interaction with one another, which is not the focus of the interest of metaphysics proper.

If Agazzi is in agreement with me, then what is the difference--non finite, non multiple, non interactive--which calls the attention of the metaphysician?

Professor Bunge's contribution is short and formal, and contains theses about (i) what he calls the "science of metaphysics," (ii) the "metaphysics of science" and (iii) what he calls "emergence." Metaphysics, he claims, can be turned into a rigorous science, and he gives formal arguments. This seems to contradict what Agazzi said, viz., that metaphysics is not a science.

Secondly, Bunge asserts that science has metaphysical presuppositions, as of course has been said by others before him. But he is more precise: There are theoretical metaphysical presuppositions and heuristic metaphysical presuppositions of science. If we accept this, I ask: how does Bunge conciliate the fact that he can make metaphysics into a rigorous science with a metaphysics of science? If this were so, then, the metaphysics of science would be a "rigorous science of science." But what is that?

Finally, emergence is said by Bunge to be a metaphysical concept. I say concept and not notion as he does, for reasons of conformity to the vocabulary to which I am used. Bunge connects this concept of emergence with novelty. My question is whether there is a relationship between Bunge's emergence-novelty connection and Agazzi's analysis of the Kuhnian argument about paradigms?

Bunge concludes with a pessimistic note: He doubts that a definitive science of metaphysics or a definitive metaphysics of science will ever be built. I, for my part, should rather be optimistic. For, if these final stages were at hand, the philosophers of science would have nothing to do.

Professor Hubner's first questions are: What is a presupposition; what is metaphysical? His answer reads: metaphysical presuppositions in science are groups of premisses which contain only a priori and valid statements.

His next question is: are there such presuppositions at all? He answers: There are such in science, viz., instrumental, functional, axiomatic, judicial and normative ones. Axioms, e.g., are neither empirically true nor false. So they can never be falsified; they have a meaning, though, viz., for, and not by experience.

Such presuppositions resemble the rules of a game, namely, the "game of experience." I like this phrase, for already mathematics is a game, but not the game of experience: it is "pure-game" if you please. Mathematics is not a science but a power. Therefore, if the question of the relationship between science and metaphysics is posed, then the other question, namely, about the relationship between mathematics and metaphysics deserves similar treatment as well.

Hubner should be able to answer, for, he goes on explaining that logic never teaches anything about reality, whereas metaphysics, or at least metaphysicians, claim to speak about reality. Perhaps what Russell calls the "really real," in contradistinction to the more minute reality tackled by the sciences, is the reality approached by metaphysics. A special dialectic follows, says Huebner, which is reflected by that reality but which could not compete with the necessity asserted in formal logic.

Hubner too has an argument about the dependence of presuppositions upon the historical situation in which they are made. But he insists that this does not make them arbitrary and talks of "the logic of a situation." Hence, he says, let us give up the idea that there are necessarily true presuppositions in science. What there is, are metaphysical presuppositions, for we can never grasp reality as such.

In my book *Erkenntnis und Wirklichkeit* I have explained the same idea by saying that we always try to rape nature or reality. This never succeeds, because all we are able to do is to make

clothes which more or less suit reality and that all our theories are nothing but clothes. We know about the clothes, because we made them, but not about the real body they actually conceal from our view. What is the difference or likeness, between scientific, and metaphysical clothes?

CHAPTER VII METAPHYSICS AND SCIENCE: AFFINITIES AND DISCREPANCIES

EVANDRO AGAZZI

SCIENCE AS THE MODEL OF KNOWLEDGE?

An inquiry today concerned with the problem of characterizing metaphysical knowledge cannot bypass the fact that the broadly accepted paradigm of knowledge in our days, is represented by science. Evidence of this is easily found when one considers the simple fact that every inquiry that aims at being taken seriously or at qualifying itself as rigorous and objective research, immediately claims to be a (perhaps new) science. This does not imply at all that metaphysics, in order to be taken seriously today, must try to qualify as a science as well. But it surely implies that, if science has actually become the present model of knowledge, a comparison with science is inevitable if metaphysics wants to be considered a kind of knowledge in some acceptable sense.

This pure consideration of principle is furthermore strengthened by a consideration of fact, namely, that the model of science has been exploited for a long while in contemporary philosophy in order to discredit metaphysics or, at least, in order to remove it from the realm of knowledge proper. The history of positivism and neo-positivism, many positions within analytical philosophy, beside the generic atmosphere of the scientific mentality, are too fresh as memories to be in need of any detailed exemplification. They all show how science has been taken as the most convincing argument for proving that metaphysics was not so much a false knowledge, as simply no knowledge at all.

As a defense against this attack, two main positions can be adopted. The one maintains: there are several kinds of knowledge, scientific knowledge being only one among other possible and actual ways of acquiring knowing which exist beside science. This position is certainly reasonable and can be defended with some success, but it is rather weak from the viewpoint of our issue. For it would be too easy for the opponents of metaphysics to accept the above statement and then say that science does constitute the proper and fullest standard of knowledge-metaphysics, together with common sense, unsystematic thinking, unorganized experience, personal approaches to reality, sentimental or aesthetic worldviews, would be seen as vague, generic, unreliable and provisional kinds of knowledge.

It is therefore much better to adopt a second position, which assumes that knowledge as such has some unique general features, but admits of some further specifications depending upon the particular subject matter toward which the effort of knowing is addressed in the different cases. By adopting this attitude, one would surely be able to recognize that the general and characteristic features of knowledge have been brought to a particularly clear and effective degree of maturation and consciousness in science (which deserves, therefore, its being promoted to the paradigm of knowledge). But this would not prevent one from inquiring whether these characters are correctly recognizable also within domains of inquiry other than science (e.g., in metaphysics), although in these domains they are not accompanied by other features that are peculiar to science alone. It is worth noting that this way of putting things is fair not only to metaphysics, but to science as well, for one surely obtains a quite impoverished picture of science by reducing all scientific problems to a purely epistemological status. In other words,

when people say, as they often do, that philosophy of science is merely the modern way of doing theory of knowledge, they are actually oversimplifying the richness of the aspects involved in science, and neglecting a substantial part of it. And if it is true that some epistemological emphasis has dominated philosophy of science for a long while, it is not less true, on the other hand, that the more recent trends in this discipline have recalled attention to a whole series of problems of science which are not strictly epistemological.

An attempt to develop the second line of thought mentioned above has been made by the author of the present paper on several previous occasions and it would not be reasonable to repeat it here.¹ Still, the core of those reflections will be recalled briefly in order to give the general coordinates of the discourse. The main stress in this paper will be upon some further points, which in turn, have only been hinted at in the previous papers.

To give an initial idea of the aim of this paper, we could note that the preceding inquiry aimed at showing that science and metaphysics share the foundational requirements of their cognitive status, while differing in their cognitive interest. This was tantamount to claiming that the positive qualities which are usually credited to science are to be credited to metaphysics as well, and that these also include some features which are often considered as typical of metaphysics and alien to science.

The task of the present paper will be, analogously, that of showing that some of the negative features that are often alleged to be typical of metaphysics, are equally well recognizable in the case of science. It will follow that, even from the point of view of some concrete limitations, science and metaphysics are on the same footing. Of course, this will not automatically mean a full parallel between both disciplines, and we shall therefore devote some attention to the problem of an acceptable differentiation between them.

SOME COMMON QUALITIES OF SCIENCE AND METAPHYSICS

The Mediation of Experience.

Let us now outline briefly some positive characteristics that science and metaphysics have in common. The positivist tradition has opposed science to metaphysics by claiming that metaphysics is based on the mediation of experience while science never oversteps experience. However, the result of the most mature reflections in the philosophy of science, both in the field of concept formation and of theory construction, has been that the theoretical components can never be dispensed with and that they are by no means reducible to empirical ones. This fact has clarified why it is not possible in science to remain with pure experience or, to put it differently, how science too resorts to the mediation of experience as long as the tools for acquiring knowledge in science clearly appear to be two, i.e., experience and logos (whereby with logos we mean the specific function of reason).

This ineliminability of the theoretic (i.e., non-empirical) side is by no means in contrast with the fundamental methodological requirement of every empirical science, which imposes that even the most abstract theoretical statements be able to be tested empirically. For this ability to be tested means only that fully empirical statements must be deducible from the theoretical ones and that they must turn out to be true or false on the basis of the empirical evidence. But it is here that one can point out a difference with respect to metaphysics, as this requirement of empirical testability does not belong to its methodological imperatives.

This is true, but a little reflection shows that it has to do not with the cognitive structure of science, but simply with the different domains of problematization (or field of interest) of the two kinds of inquiry. In the case of science, the domain of problematization is, if we take science in its broadest sense, "the whole of experience;" in the case of metaphysics this domain is simply "the whole" as such. To explain what this way of speaking means we could say that science circumscribes its objects by selecting, in each of its different disciplines, a set of predicates directly bound to empirical testing conditions and goes on attributing these predicates (or predicates that are logically definable on the basis of these) also to theoretical entities (i.e., to entities which are not directly observable, but are postulated in order to explain the empirical data). This can be expressed also by saying that theoretical entities are supposed to belong to "the same kind of reality" as do empirical things, even though they are empirically inaccessible; in this sense they are included in "the whole of experience." Metaphysical predicates, on the contrary, are not intended to be limited to an empirical reference and are proposed as apt for attribution to any kind of reality (empirical or not), for the "viewpoint of the whole" cannot admit, as such, of any predetermined limitation. As a matter of fact, metaphysical entities which are reached by means of the mediation of experience are usually conceived of as not belonging to the same "kind of reality" as empirical entities.

It follows from all this that statements which are intended to express the viewpoint of the whole must surely be compatible with the empirical evidence and also be able to explain it (like the theoretical statements of every science), but they cannot be submitted to the additional condition of being also empirically testable, for this would reduce their intended scope. It is clear therefore how the requirement of empirical testability is one of those "peculiar" features of science which do not belong to it as a paradigm of knowledge, but as a particular kind of knowledge that is, as a knowledge limited to particular thematic horizons.

Analytic and Synthetic use of Reason.

Another way of expressing the substance of the above argument is to claim that both science and metaphysics cannot be carried on without something more than an "analytic use" of reason, that is, reason that is not allowed to perform more than an "analysis" of what is done or given. In the case of the sciences, those which are classified as empirical should limit the use of reason to a careful analysis of experience, to a classification, decomposition or recomposition of its parts, without allowing reason to proceed to any addition or construction of its own. In the case of formal sciences, the analyticity should be manifested in the current standard deduction of logical consequences from the postulates or axioms given at the beginning. It is well known that this way of conceiving the proper task of reason in science has been typical of the positivist and empiricist tradition; it is not mere chance that "analytical philosophy" has been deeply inspired by these schools of thought.

Metaphysics, on the contrary, has always been characterized by a "synthetic use" of reason, in which the constructive power of man's rationality was put to the most challenging test. It was invited, so to speak, to complete the picture of reality by an effort of rigorous and reliable creation that goes far beyond what is actually "given" in any empirical evidence. It is because of this kind of creative freedom that metaphysics has been mistrusted so often. But now it clearly appears that science too needs a "synthetic use" of reason by which it is allowed to build something on its own forces without being mistrusted as unable to cope with reality. The impossibility of deriving scientific hypotheses and theories from a pure analysis of experience

and the shortcomings of every inductivist justification of this process has led to a recognition of this creative or inventive performance of reason in science and has helped to understand that such an invention or creativity is by no means synonymous with arbitrariness or craziness. As a consequence, one is entitled to say that, if this synthetic use of reason is legitimated as such, it cannot consistently be forbidden when it is extended or applied outside the "whole of experience" (i.e., outside the domain of interest of science).

Indeed, metaphysics is the field in which, while experience is certainly taken into account, the synthetic use of reason finds its most significant application. The discourse about the synthetic use of reason and the differentiated roles of experience and logos finds its justification in an analytic distinction, which seems to have been rather neglected in modern philosophy of science: the distinction between ascertaining and giving reason. The difference between the two is *prima facie* readily admitted, for it is rather clear that the fact of having ascertained something does not provide us with a comprehension or understanding of it: for that, the category of explanation is called into play. However, it is by no means always clear whence these two requirements derive their foundation. As a matter of fact, the task of reason was illegitimately indicated by Descartes to be that of ensuring us certainty against doubt, with the additional claim that experience is not reliable in itself and cannot provide us with any certainty. In this way, the proper role of experience was totally swept away; it was misleadingly attributed to reason, while reason itself was deprived of its specific task. The symmetric mistake was made by the extreme empiricist philosophies when they pretended that experience is the only source of all understanding, thereby attributing to experience the typical role of reason.

The actual situation is rather the following: experience is the proper basis of ascertaining knowledge and, as such, provides us with certainty; logos has as its proper task that of giving reasons or of explaining what is already certain in itself, but still lacks intellectual comprehension. This does not imply that reason cannot also be used to attain some certainties, but simply stresses that there is a part of our cognitive activity which would not be satisfied even if we had a sufficient supply of certainties. This part is constituted by the set of reasons we propose to account for those certainties. The proposal of hypotheses for explaining empirical facts is, therefore, witness to the indispensable role of this part of our cognitive activity within science; and it is here that the synthetic use of reason has its roots.

However, the difference in the problematic horizon which we already mentioned, and which is expressed in adopting the viewpoint of the "whole of experience" in the case of science and of "the whole" as such in the case of metaphysics, is sufficient to prevent pushing existing affinities to a point at which dangerous confusions might arise. In other words, it should be clear enough from the above that not every meta-empirical statement is, as such, a metaphysical one.

An obvious, but perhaps not unnecessary, remark as a conclusion of the above discussion might be the following. Once this methodological affinity between science and metaphysics has been established, one is not automatically entitled to claim that metaphysical doctrines have always been constructed according to the same standards of rigor as exact science. The result of our inquiry has shown only the possibility of such a metaphysics or, rather, of parts of metaphysics constructed according to those standards. In concreto, the exigencies which lead to the construction of metaphysics are quite differentiated and they would not be satisfied by a discourse obeying only the cognitive standards just sketched. Still, hints for the construction of some basic parts of metaphysics according to these standards can be provided and some of them are outlined in the papers cited.

SOME ALLEGED DEFICIENCIES OF METAPHYSICS

After having recalled some positive characteristics of science which can be extended to metaphysics, and some typical characteristics of metaphysics which can be found in science--and thereby vindicating a proper cognitive status for metaphysics--let us proceed now to consider some alleged negative features of metaphysics, which are claimed not to affect science. The first of them might be outlined as follows: even if one may admit that a few very basic and extremely simple metaphysical statements can be established by means of the complementary efforts of experience and logos in a way which is not too different from the method of science, still it is undeniable that every full-fledged metaphysical theory contains a rich display of details which are the expression of a certain "interpretation" of general reality according to some personal worldview, rather than an objective description of it. This shows that metaphysics inevitably lacks the fundamental character of objectivity or intersubjectivity, which is typical of science. This would indicate that, despite every affinity, science and only science remains an "objective knowledge"; that in turn would mark a profound distinction between these two intellectual enterprises.

Is this true? To some extent it is, but not in such a radical sense as is frequently understood. Let us first explain why metaphysics cannot enjoy in its fullest measure the requirement of intersubjectivity which is usual for science.

The Requirement of Intersubjectivity.

Every scientific discipline is characterized by its specific "domain of objects," to which all its statements are explicitly or tacitly referred or "relativized." In order to avoid some easy misunderstandings, which could arise from conceiving of these "objects" as "things" of everyday experience,² it would be better (and sufficient for the purposes of this paper) to say that every science is characterized by its "domain of discourse." This means that only some technical terms are supposed to be specifically pertinent to this science, while other linguistic tools are used for the sake of communication only. On the other hand, the specificity of meaning of these technical terms is bound to the adoption of some standardized operations for putting to the test sentences containing them. The technical vocabulary of a science is increased by introducing by means of theoretical constructs further terms on the basis of those that are operationally defined. All this may be particularly clear in the case of exact empirical sciences, but it can be shown that this situation is quite common.

The consequence of these general features of the scientific discourse is that it is intersubjective, because the appeal to standardized operations for fixing the meaning of the technical terms provides the basis for a universal understanding among people who are ready and able to perform those operations and, in such a way, to become specialists or professionals of that particular science. Of course, the prerequisite for entering the domain of discourse for a certain science is constituted not merely by the mastering of material operations. Special chapters of mathematics, as well as other auxiliary tools may well be required and they all constitute the basis for the intersubjective understanding of that science. But why do they constitute such a basis? Simply because they are not put under discussion in that science, because they are taken for granted in it. Only if something is unquestioned and unquestionable among some persons it may be used as a means for getting further agreement among them. Still, it is clear that such unquestionability does not belong to the standardized operations or to the mathematical or

theoretic presuppositions of a science as such, but simply for the sake of the discourse of that specific science. They can very well be problematized, strongly challenged and even openly mistrusted within other contexts, i.e., inside other disciplines.

What makes these operations or theoretic tools unproblematic and gives them the strength of becoming the foundations of a certain discipline, is neither an intrinsic logical necessity, nor a pure and simply arbitrary convention; it is the complex result of an historical development. Hence, they are characterized by that special kind of "contingency" which we could more aptly indicate as an "historical determinateness."

The moral of this story is that every science is intersubjective because its domain of discourse is historically determined and its institutional criteria are unproblematic and taken for granted in it. This, of course, is perfectly compatible with a discourse which is done "from a particular viewpoint" and simply aims at developing what can be said within that viewpoint, without problematizing it, without asking questions about its legitimacy, its relevance, etc. But this cannot on the contrary, be the intellectual attitude of a discourse which is intended to be "from the viewpoint of the whole" or, if we prefer, to reach a truth which is not the particular truth expressible under a certain particular viewpoint, but which aims at being a kind of "absolute truth," in the sense of being such, under no special preconditions. It follows that metaphysics, as a discourse which claims the right to treat everything as a problem without taking anything for granted, must renounce the useful and comfortable status of intersubjectivity. This does not condemn it to absolute subjectivity; it is only that intersubjective agreement cannot be taken for granted. It may develop as a result of a patient analysis and dialogue, but it is not something that can be promised right from the beginning of the enterprise.

Once this is well understood, it is clear that this lack of warranted intersubjectivity has nothing to do with the arbitrary, the erratic, or the like. It is rather the consequence of the extreme severity that metaphysical discourse imposes upon itself. It is not intersubjective simply because it aims at being more than intersubjective. If we identify objectivity with intersubjectivity (this can be done, if one gives to these concepts a suitable interpretation), we can say that metaphysical discourse is not objective. However this should mean no cognitive diminution with respect to science, if not in a purely pragmatic sense.

Metaphysics and Worldviews.

Once this general framework of the problem of intersubjectivity is well understood, it is possible to go a step further and investigate the objection that metaphysics is doomed to subjectivity, not because it is so rigorous as not to take anything for granted, but rather because metaphysical constructions are nothing but uncontrolled general world-pictures, which express personal feelings or, at best, intellectual intuitions of the individual metaphysician. Again, there is a good deal of truth in this appreciation of metaphysics, but this still does not imply uncontrolled arbitrariness or complete freedom for fantastic invention; moreover, it does not imply that something of this kind does not occur in science as well.

The reason why the general worldviews which are typical of most metaphysical systems do not manifest any arbitrariness is that they must, first of all, be in agreement with empirical evidence. Indeed, if one looks without prejudices at the history of metaphysics, one can easily see that the characteristic points of every significant metaphysical system have been either suggested by some features of reality which particularly impressed the thinker, or by the intention of removing aspects of reality which appeared to the thinker to be especially

undesirable. In both cases, metaphysical constructions appear to develop as ways of satisfying the exigencies of logos by explaining empirical evidence, not in some specific or partial fields, but "as a whole." As a matter of fact, both the justification of features of reality which are felt to be in agreement with logos and the elimination of apparent difficulties which seem to be in disagreement with it, belong to the same pattern of the explanation. Under this viewpoint, no substantial difference occurs between the general hypotheses by means of which one explains current facts in a particular scientific domain (or resolves its apparent puzzles or difficulties) and the general ideas which lie at the foundation of a metaphysical doctrine.

THE ROLE OF INTERPRETATION

But one might remark at this point that metaphysical systems contain much more than is strictly necessary for explaining experience; they have a "redundancy" which is not admitted in science and which opens the way to at least a certain looseness, if not actually arbitrariness, in the use of reason. This remark is correct, but it does not indicate anything negative. It simply points to the fact that pure and simple explanation is not the ultimate goal of intellectual understanding. What is needed in addition to logical explanation, is what we could call an interpretation of what is known and explained. As a matter of fact, the category of interpretation is still quite alien to the current philosophy of science, but it has moments when it appears to be tacitly understood. Take for instance the usual prescription not to admit ad hoc hypotheses in a scientific theory. This prescription is universally made, but no justification of it is properly proposed: it sounds more or less like a tacit moral imperative. This lack of logical justification is a good symptom that something is afoot. Indeed, an ad hoc hypothesis satisfies all the requirements that an explanation could impose; if we feel dissatisfied with it, this means that there are other requirements to be fulfilled beside explanation itself. These requirements are not difficult to identify. We want our hypotheses to fit in harmoniously with a kind of general perspective. They must keep acceptable and rational relationships, not only with empirical evidence, but also among themselves, and this harmony is not sufficiently provided by the pure fact of not being mutually contradictory. We want more, we want a comprehensive picture which might enable us to believe that we have got an acceptable "interpretation" of that side of reality we are investigating in our particular science. In other words, the unity of the explanation is something which we could call "interpretation" and which is aimed at in every science by introducing some additional requirements which are "redundant" with respect to what is strictly necessary for the explanation proper.

Interpretation and Understanding.

But there is still more to be said about this point. The above indicates that we need an interpretation as a kind of unitary picture that enables us to "understand" what we have been able to explain. In this sense the interpretation and the understanding appear as results, as the endpoint of the cognitive process. This is true, but there is nevertheless a sense according to which this understanding must occur somehow at the beginning of the cognitive process. In order to open the way to the appreciation of this fact, one could reflect on the obviousness of this statement: one cannot explain something which one has not understood. This statement clearly indicates that there must be a kind of global appreciation or comprehension of something as a precondition for any program of explaining its features or behavior. This fact has some definite

and detailed reasons within psychology, which we do not want to discuss here. We simply want to stress that, on the basis of the preceding considerations, one must admit that interpretation has a quite significant role also in science: scientific theories all have a rather important hermeneutic component. Great scientific theories, such as Ptolemaic astronomy, the Copernican system, Newtonian mechanics, the theory of evolution and relativity theory all show this hermeneutic character with special clarity.

Let us come now to the consideration that such hermeneutic efforts are bound, in the case of metaphysics, to personal intuitions, to private appreciations of individual philosophers. This is true only partially, because there is an "historical determinateness" also for philosophical systems and metaphysical conceptions, although they need the intervention of an exceptional mind to be created at a certain moment and much freedom and ingenuity are involved in this creation. The same is true of science as well, both on the small and the large scale. On the small scale we must admit the hermeneutic nature of the act by which the individual scientist proposes or invents a conjecture (to use Popper's terms), even before formulating it clearly in the form of a full-fledged hypothesis to be put to the test. On the large scale, the hermeneutic nature of the activity that leads to conceiving some general theory or unifying schema which is able to unite a lot of scattered facts and formerly separate hypotheses or laws, is even clearer. From every angle we reach the same conclusion: hermeneutic has become highly esteemed in recent years within some philosophical trends and also within some "human sciences," like history, theology, linguistics, and even sociology. It deserves indeed to be given more serious consideration also in the domain of natural sciences. If one acknowledges this, one can no longer blame metaphysics for giving considerable space to an hermeneutic component or consider this to be evidence of its inferiority with respect to science. As before, the entire difference lies in the scope of the hermeneutic effort, which envisages the "whole" in the case of metaphysics and some particular domain of objects in the case of science.

PROGRESS IN SCIENCE AND IN METAPHYSICS

Another important feature, which is often mentioned as one of the most clear distinctive marks of science, and actually as the one that more than other expresses its superiority with respect to metaphysics, had already greatly impressed Kant. It is the irresistible and cumulative progress of scientific knowledge, compared with the frustrating destiny of metaphysics, which allegedly handles the very same problems all the time and starts again and again from the beginning with every new philosopher. It is not by chance that metaphysical questions are often called "eternal problems," while scientific problems are such as to receive a positive or negative solution after a reasonable time spent in investigating them. Particularly during the time of the early positivism this used to be the main argument against metaphysics, whose futility was claimed to be evident from its lack of "results," to use the way of speaking of scientists who wanted to indicate the positive character of their work. Although still widely accepted, the stereotyped image of science that lies behind this kind of evaluation has been shown to be too optimistic and oversimplified. In the last decades, severe criticism has been made against the idea that science develops by a linear accumulation of knowledge. Moreover, some authors have reversed this pattern of cumulative progress and speak of the discontinuous movement of science, in which the transition from one theory to another is the expression of "incommensurable" world outlooks.

Recent Views about Progress in Science.

It would be too lengthy to enter into here a detailed discussion of these positions. In particular, it is certainly possible to justify a reasonable and undeniable sense in which one must say that there is a certain accumulation of knowledge in science.³ Nonetheless, one cannot underestimate, on the other hand, the arguments and historical analyses by which scholars, like Kuhn and Feyerabend, have shown that much of the alleged continuity in science is simply the result of an ad hoc retrospective reconstruction, made from the viewpoint of the more recent stage reached by scientific research. If, on the contrary, one takes history in its actual development, one sees how sudden and very complicated scientific "revolutions" often are. The "results" of the preceding science are often forgotten and disregarded or, at best, are reinterpreted according to a conceptual frame of reference that is at variance with the one they were related to before, and as a consequence actually receive quite a different meaning. According to these more recent views, not only is the old positivist but also the neopositivist idea wrong, according to which the transition from one theory to another was simply determined by the discovery of some unexpected fact that did not fit in with the old theory, and pushed scientists to find another theory which was able to explain all the old facts and the new ones. They also do not agree with the Popperian view, which attributes the responsibility of theory-change to the "falsification" of the old theory through a clash with some empirical evidence, thereby giving rise to a new theory, "incompatible" with the old one.

Against these interpretations of theory change, which are both "logical" in their motivation, Kuhn and Feyerabend attribute theory change to a discontinuous and global variation of a "paradigm," which leads to discarding the entire conceptual world of the old theory and introducing a new one, even in the presence of many logical difficulties and/or empirical shortcomings. Without trying to discuss these views (which contain also some weak points), it is enough for the sake of our discourse to remark that this new way of conceiving the flux of science not only shows the character of abstract idealization which was inherent to the schema of cumulative progress, but interprets the dynamics of this flux in a way which has much in common with the way different metaphysical systems have actually superseded each other in the history of philosophy.⁴

But, it could be said, even if one admits that scientific development is not able to be correctly represented under the image of the linear cumulative progress that was held some time ago, it is nevertheless true that nobody can deny "some kind of authentic progress" in science, while nothing of this kind seems to be the case with metaphysics. This statement is far from being self-evident or well supported, if not because we do not dispose of exact criteria for recognizing (let alone evaluating or measuring) scientific progress or even for universally determining "what it is." Still, it can be said with confidence that present scientific knowledge is not only "larger," but also "better" than that of other ages, because we have been able to retain the successful guesses made in the past about several special fields of inquiry, and also to learn from their mistakes and shortcomings. In other words, there are contents of knowledge which we regard as definitely acquired (although their validity may yet be better understood or interpreted) and we know that some ways lead to certain pitfalls or that some negative results have been obtained about certain specific questions.

Progress in Metaphysics.

There is a kind of "global" perception of scientific progress, which is quite compatible with a non-linear and non-cumulative picture of it. But it can now be said that a quite analogous perception can be taken as the basis for claiming that the extreme variety of metaphysical doctrines is fully compatible with an ascertainable progress in the metaphysical inquiry. In other words, a professional philosopher cannot ignore that some specific problems have been investigated by Aristotle or Kant and that such and such are the objective "results" obtained in those inquiries. When facing one of the so-called "eternal problems," he actually should know where certain efforts of solution inevitably lead, which paths are closed, etc. It turns out, therefore, that also in philosophy, and particularly in metaphysics, one can say that certain things can no longer be maintained, e.g., after Kant or Wittgenstein. In this sense we know "more" in philosophy than other ages--approximately in the same sense in which this can be claimed in the case of science. We can also say that our philosophical knowledge is "better" than prior ones, in the sense, e.g., that our notion of "dialectics" is richer and deeper than that, let us say, of Plato, due to the contributions of Kant, Hegel and Marx.

But even more convincing than this effort at a "global" evaluation of progress (which, at any rate, shows no less vagueness and questionability in science as in metaphysics) may be what we might call its "local" evaluation. One of the most fruitful ideas introduced by Kuhn is his distinction between "normal" and "extraordinary" science, the second being characterized by the adoption of that critical and destructive attitude which Popper had imagined to be the constant habit of the scientist. During the periods of "normal" science, specialists work in a kind of routine job, trying to develop and to exploit all the intrinsic possibilities of a paradigm by solving more and more complicated puzzles which challenge their ingenuity. As a consequence, a real accumulation of "results" takes place, which constitutes an actual "progress" in the usual sense of this term, until the vein offered by a certain paradigm is exhausted and another comes and proposes its puzzles. This schema applies perfectly also to metaphysics: when a great system of metaphysics is proposed, it is like a fresh paradigm and many generations of philosophers may work in developing its possibilities by applying it in a variety of contexts, from ontology, to ethics, to philosophy of nature, etc. As this gives rise to a series of actual "results," we must say that we "know more," about the possibilities provided by that metaphysical framework at the end of a period of such a development than at the beginning of it. It may also happen that, after a certain time, the paradigm is exhausted--which usually happens when the fertility of the first application is followed by the routine repetition or commentaries of scholastic pedantism, as it happened to Aristotelianism in the Renaissance, to Hegelianism in the past century, and to Marxism in our century. At that moment, a new metaphysics may be expected to come and propose its challenges to the speculative intellects.

Knowledge and Belief.

There is a last point that one should mention in this comparison of science and metaphysics. This is related to the fact that metaphysics seems necessarily to be bound to some kind of "belief," as it usually implies some personal attitude towards the world and some personal involvement in one's style of life. The question is too complicated to be discussed here. We shall limit ourselves to the remark that, from a certain viewpoint, it may be said that metaphysics is an effort of knowing "inside a belief." Science too, however, has the same epistemic structure, only restricted to its own objects. It is the task of the logos to justify the transition from belief to

knowledge; as we saw that logos is necessarily involved in science too, it follows that such a transition also concerns science, as long as it is a conjectural inquiry.

I prefer not to insist on this point, about which a few more hints may be found in one of the above-mentioned papers.⁵

ELEMENTS OF DISTINCTION BETWEEN SCIENCE AND METAPHYSICS

In conclusion, in spite of the affinities which have emerged, science and metaphysics may and have to be distinguished. The main element of distinction is represented by the different thematic interest of the two, which we had the opportunity of mentioning several times: the "point of view of the whole" for metaphysics, several limited points of view for the different sciences, and the point of view of "the whole of experience" for science as such.

We have already indicated this difference as constituting the distinction of the respective "cognitive interests" of metaphysics and science, but this difference leads also to other peculiarities which separate more sharply the intellectual attitude of the two. As a consequence of assuming a particular viewpoint in its inquiry about reality, every science is led to assume the nature of an intrinsically "refutable" knowledge: it appears as tacitly understood that some neglected aspects of reality might turn out to be relevant enough to impose revisions of our established theories, even after they have been developed in a satisfactory and seemingly "complete" form. In contrast, this cannot be the intellectual attitude of an investigation which intends to put itself from the point of view of the whole: it follows that this must be inclined towards getting a structurally non-conjectural and non-refutable knowledge. This is why metaphysics, though being right in claiming its status of knowledge, cannot be attributed the additional character of being a science in the modern sense of this word.

This dissimilarity of intellectual attitude, on the other hand, helps us recognize that the difference in the "cognitive interests" mentioned above is actually more than that. Indeed it calls our attention to the different kinds of problems and questions which stimulate man and introduces a distinction among them based on the degree of certainty we would want to rely upon in the answers we get. Many of these questions are such as to be adequately answered when we reach a conjectural but still reasonably reliable solution: these are most of the "practical questions" of life. However, there are also other questions, concerning which we feel we could not be satisfied with less than an irrefutable answer: these are the questions on which man "engages his own life" or, if one prefers, the radical existential questions. Their nature is such that no scientific "conjectural" inquiry is structurally apt to handle them. An ultimate rational inquiry, such as that of metaphysics, appear to be the only proper tool for trying to treat them according to the exigencies of logos and not only of faith.

It should be clear from the above that metaphysics presupposes an existential engagement not involved in science; this is a major distinction between them which cannot be overlooked. An implicit admission of this fact is to be found in the general reaction against "scientism" and in the polemics against the so-called "neutrality of science" that have become common during the last two decades. As a matter of fact, those polemics were right in stressing that "pure science" cannot satisfy the most radical human exigencies, that it can bring social and moral disengagement and "alienation," that doing scientific research cannot avoid being even unconsciously involved in choices and decisions which imply conflicts of values and of worldviews. But this was incorrectly interpreted as an obligation to modify the cognitive status of science, by injecting values, choices, and worldviews and by making it partisan and "non-

neutral." That was a patently wrong solution to a correct problem: that solution consisted in again confusing science with metaphysics, ignoring that modern science had found its identity by ridding itself of the metaphysical mode of thinking within its domain of research. That proposed solution was therefore objectively "reactionary," even if it was proposed with the pretension of being "progressist." The truly correct solution consists rather in recognizing that an harmonious and un-mutilated or integral intellectual attitude needs both scientific and metaphysical outlooks, that both are equally legitimate but differently motivated, and that the one cannot substitute for what can be provided by the other.

There are signs that our time has reached the maturity to recognize this kind of balanced synthesis after a long period of "dissociation" in western civilization, which had prevented it from really being a "scientific civilization." In order to achieve that status, science must find a way of coping with metaphysics, without either of the two losing its identity.

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NOTES

1. Among such papers see: "Scienza e metafisica oggi," in *Studi di filosofia in onore di G. Bontadini* (Milano: Vita e Pensiero, 1977), I, 3-22. "Science and Metaphysics Confronting Nature," *Dialectics and Humanism*, IV (1977), 127-136. "Metaphysics in Contemporary Philosophy," *Ratio* (1977), 162-169. "Considerazioni epistemologiche su scienza e metafisica," in C. Huber, ed., *Teoria e metodo delle scienze* (Roma: Universita Gregoriana, 1981), pp. 311-340.

2. About this distinction see especially the last chapter of the book by the present author, *Temi e problemi di filosofia della fisica* (Roma; Abete 1974), or, in English, "The Concept of Empirical Data," in M. Prezelecki, R. Wojcicli, C. Szaniawski, eds., *Formal Methods in the Methodology of Empirical Science* (Dordrecht-Boston: Reidel, 1976), pp. 143-157.

3. See e.g., by the present author, "Commensurability, Incommensurability, and Cumulativity in Scientific Knowledge," *Erkenntnis*, 22 (1985), 51-77. A brief discussion concerning this topic is presented in the paper "Considerazioni epistemologiche su scienza e metafisica," see note (1) above.

4. Beside Kuhn and Feyerabend, one could mention at least the book by J. Agassi, *Science in Flux* (Dordrecht-Boston: Reidel, 1975) and for a different historicistic perspective, the book by K. Hubner, *Critique of Scientific Reason* (Chicago: 1985).

CHAPTER VIII
SOME TASKS FOR METAPHYSICIANS
MARIO BUNGE

The aim of this paper is to discuss the following:

Thesis: metaphysicians should investigate problems in both the science of metaphysics and the metaphysics of science.

Why? Because they are there at least in nuce.

What for? Because metaphysical problems are all-important for the whole of culture, not just for philosophy, and thus deserve being investigated thoroughly, rigorously, and systematically.

My thesis, though not new, is not popular.¹ Indeed, most thinkers reject the claim that metaphysics can be turned into a rigorous science, and most scientists are unaware of the metaphysical concepts and hypotheses inherent in their research. Therefore we must take a look at both the science of metaphysics and the metaphysics of science.

THE SCIENCE OF METAPHYSICS

Philosophers as diverse as Kant, Bolzano, Peirce, Alexander, Scholz, Woodger, and Donald Williams have thought that a science of metaphysics is possible--though each for different reasons. While for some of them metaphysics could be rigorous because it must be a priori (like logic), for others metaphysics could be scientific by being thoroughly empirical, and therefore could be forced to be compatible with science. Unfortunately none of the philosophers mentioned above produced a system of scientific metaphysics. While some, like Peirce, were fragmentarians, others, like Alexander, were not acquainted with science. Hence, none of them was able to prove that a scientific metaphysics is possible in the only way such proof can be given, i.e., by producing a system of metaphysics congenial with science.

What are the conditions for a scientific approach to metaphysical problems? I submit that they are the same as for the scientific approach to any other conceptual problems, namely, the ones summarized in the following:

Criterion: A set of metaphysical problems is approached in a scientific manner iff:

(i) the problems are relevant to contemporary scientific knowledge, either because they arise in the course of scientific or technological research, or because the latter has some bearing on them;

(ii) the problems and the proposed solutions to them are well formed and well conceived--i.e., well formulated;

(iii) the problems are investigated with the help of the most suitable formal (logical or mathematical) tools;

(iv) the investigation is carried out with the help of the available scientific knowledge;

(v) the solutions to the problems are presented in a systematic fashion--i.e., in the form of theories, preferably (though not necessarily) axiomatized theories; and

(vi) the proposed theories are checked for consistency, both internal (logical) and external (with the bulk of contemporary knowledge).

We defer to the third Section the consideration of an example of the scientific approach to an ontological problem.

THE METAPHYSICS OF SCIENCE

That science has metaphysical presuppositions is of course a thesis familiar to philosophers and one accepted by a handful of scientists. However, metaphysicians seem to have failed to establish their thesis for want of two things. One is a clear elucidation of the very notion of a metaphysical presupposition; the other is an extensive search for, and systematization of, the metaphysical presuppositions of science. Let me give a hint concerning each of these unfulfilled tasks.

In studying the question whether science has metaphysical presuppositions we should avail ourselves of Kant's distinction between constitutive and regulative principles. We can say that a metaphysical statement is constitutive of a body of knowledge if it is used in proving statements of some theory included in that body; on the other hand a metaphysical statement is regulative with respect to a body of knowledge if it guides the search for some constituents of that body. In other words, we propose the following:

Definition¹ Let m be a metaphysical statement (definition or assumption). Then

(i) m is a theoretical metaphysical presupposition of science iff there is a scientific theory T such that m occurs in T or among the premises employed in deriving consequences of the postulates and definitions of T ;

(ii) m is a heuristic metaphysical presupposition of science iff m occurs in a scientific research process, either in the selection of problems for research, or in the building of hypotheses or theories, or in the latter's empirical tests.

For example, it is a theoretical presupposition of every chemical theory that every chemical compound has some emergent properties, i.e., properties not possessed by its components. And the hypothesis that thinking has no direct effect on matter (i.e., that psychokinesis is nonexistent) is a heuristic presupposition of the design and interpretation of every scientific experiment.

If we now examine contemporary science in the light of the above definition, we are likely to find hundreds of metaphysical hypotheses at work in either a constitutive or a regulative capacity. Let the following list suffice: "There is an external world," "The world is composed of things," "Every thing possesses properties (to be distinguished from the attributes by which we conceptualize the former)," "Things are grouped into systems," and "Every system save the universe interacts with other systems in certain respects and is isolated with yet other systems in other respects." To expand this list, and to transform it into a well organized system (i.e., a theory), is an open problem. I.e., the metaphysics of science is yet to be born.

EXAMPLE: THE CONCEPT OF EMERGENCE

The concept of emergence has been much maligned by positivist philosophers and looks suspicious to most contemporary scientists. This is probably due not only to the influence of a mechanistic ontology but also to the fact that most of the philosophers who harp on emergence fail to analyze the concept and moreover claim that emergence can be neither explained nor predicted. Be that as it may, the fact is that science does use the notion of emergence and that

this notion is a typically metaphysical one. So it behooves the metaphysician of science to clarify this notion. One way of doing so is as follows.

Assume ordinary predicate logic and elementary set theory, as well as my theories of things, properties, and time (Bunge, 1977). Call $p_x(t)$ the set of all properties of thing x at time t (relative to a given reference frame). Then the following conventions can be introduced:

Definition² Call the totality of (concrete) things and T the time span relative to some reference frame. Further, call $p_x(t)$ the set of properties possessed by thing x at time $t \in T$, and $p_x(t')$ the set of properties of x at a later time $t' > t$.

Then

(i) the total qualitative novelty occurring in x during the time interval $[t, t']$ is the symmetric (or Boolean) difference

$$n_x(t, t') = p_x(t) \Delta p_x(t'); \\ t < t'$$

(ii) the emergent properties acquired by x during the time interval $[t, t']$ are those in

$$e_x(t, t') = p_x(t') - p_x(t); \\ t < t'$$

(iii) the absolutely emergent properties (or "firsts") appearing in x during $[t, t']$ are those in

$$e_x^a(t, t') = e_x(t, t') - p_y(t), \text{ with } y \neq x \text{ and } t < t';$$

Then

(iv) the absolutely emergent properties acquired by the world during the lapse $[t, t']$ (relative to the given reference frame) are those in:

$$e^a(t, t') = e_x^a(t, t').$$

x

These concepts can be utilized to formulate a number of metaphysical statements concerning novelty and, in particular, emergence. Perhaps the most interesting of all such statements are those concerning the emergence and disappearance of properties in the course of assembly processes, i.e., of processes transforming aggregates of things into systems. In order to state a few metaphysical hypotheses of this type we must first clarify quickly the notions of system and of assembly.

A concrete system may be characterized as a complex thing whose parts are held together by certain bonds. More precisely, a system is a thing with (a) composition equal to the set of its parts, (b) environment equal to the set of things that can act on the system's components or that can be acted on by the latter, and (c) structure equal to the set of relations among the system's components and between these and the system's environment, and such that it includes relations of the bonding (or linking or coupling) kind. The subset of the structure of a system consisting of the bonds among its parts can be called the bondage of the system. (For an exact elucidation of the above notions see Bunge, 1978). The definition we need is:

Definition³. Let x be a concrete system composed initially of uncoupled parts. Then

(i) x assembles into y at time $t' > t$ iff y is a system with the same composition as x but a nonempty bondage;

(ii) the assembly process is one of self-assembly iff the aggregate x turns by itself into the system y .

We may assume that there is at least one self-assembly process going on in some complex thing in every time interval:

Postulate 1 For every time interval $[t, t']$ T relative to any reference system, there is a self-assembly process occurring in some complex thing x within that interval.

Our next assumption is that every assembly process is accompanied by the gain of some properties and the loss of others. That is, we propose:

Postulate 2. Let the parts of a thing x self-assemble into a system during the time interval $[t, t']$. Then

(i) the system lacks some of the properties of its components (or precursors), i.e., $p_x(t) - p_x(t') > 0$; and

(ii) the system possesses some properties that its components (or precursors) lack, i.e., $p_x(t') - p_x(t) > 0$.

Postulates 1 and 2 entail the following consequence:

Theorem. During every time interval, relative to any reference system, there is at least one thing losing some properties and acquiring others.

The above fragment of a theory of novelty is relevant to science, it is formulated with the help of formal tools, and it is hoped to be consistent with contemporary science. In short, presumably it satisfies our Criterion in the first Section for a metaphysical problem to be approached in a scientific manner. And, since many a scientific problem is motivated by the belief that certain processes result in the formation of things possessing emergent properties, our microtheory belongs also to the metaphysics of science.

CONCLUDING REMARKS

The metaphysical tradition should be enriched by vigorously pursuing two intertwining lines of study: the building of systems of scientific metaphysics, and the analysis and systematization of the metaphysical hypotheses inherent (either in a constitutive or in a regulative capacity) in science. Because neither science nor philosophy stand still, there is no reason to believe that a definitive science of metaphysics or a definitive metaphysics of science will ever be built. Both fields of metaphysics are likely to keep changing as long as there remain investigators interested in them.

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CHAPTER IX

THE PROBLEM OF METAPHYSICAL PRESUPPOSITIONS IN AND OF SCIENCE

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Let me begin with a short logical analysis of one of the basic theses in traditional philosophy, namely the thesis that there are metaphysical presuppositions in and of science.

1. What is meant by "presupposition" here and what is metaphysical? Obviously science essentially consists of hypotheses and theories and both consist of general statements. Take e. g., the gravitational theory, the theory of special and general relativity, of quantum mechanics, the hypothesis of the expanding universe, of the ether, of phlogiston, the theories of capitalism, of socialism, of the Rechtsstaat, of ancient Roman law, of the medieval feudal system, of classical or modern music, of different styles in literature, etc., etc. In all these cases hypotheses and theories describe general basic rules by a system of statements (axioms, theorems, lemma, etc.); these rules determine the objects of nature or the behavior of men. Indeed we speak sometimes of a theory or a hypothesis regarding an individual event like, e.g., the theory of the origin of the moon or the hypothesis of the rather mystical character of Jeanne d'Arc. But even in these cases we mean nothing else than the explanation of individual events with the help of general rules. In the first of the given examples we apply physical laws to a special case and in the second example we presumably will apply psychological laws or general dispositional predicates.

Nowadays some attempt to represent theories as definitions of set predicates. But without mentioning that definitions of that kind are possible only in highly formalized cases I want to stress the fact that at least every theory can be formulated in statements too. Now, if metaphysicians speak of certain metaphysical presuppositions in science (I will discuss possible presuppositions of science later on) they obviously mean in particular that general statements there can be somehow logically derived from other statements they call metaphysical. And these metaphysical statements they think to be a priori which are necessarily valid and can never be falsified.

2. But how can scientific statements which we think to be empirical be derived from metaphysical statements which are understood as a priori? Let me give a simple example. Cosmologists today believe in the so called cosmological principle. According to this principle the universe is homogeneous and isotropic. Even if there is some empirical evidence in favor of this principle today we can easily imagine a philosopher who has some reasons to believe in it as a metaphysical, as e.g., Copernicus thought the universe has to be very simple because of the clearness and rationality of its creator. Now, from this principle we can first derive the Walker Robertson line element. Using the metric tensors of this allegedly aprioristic line element for the empirical field equations of the theory of general relativity we get an equation with different solutions each representing a special model of the universe. Consequently it is possible to regard this equation as the logical result of a priori and of a posteriori presuppositions. The same is true if we add to this equation some empirical knowledge regarding its variables like the space curvature and the cosmological constant. Then in applying the equation we can use special values for these variables and get a special model of the universe, expressed by a singular statement. Thus, not only general scientific statements as it seemed at first, but also singular scientific statements could be a logical result both of a priori and a posteriori statements.

To summarize: By metaphysical presuppositions in science metaphysicians evidently understand that part of a group of premises of a deduction of general or singular scientific statements which contains only a priori and necessarily valid statements.

After this short analysis and definition it should be asked whether there are presuppositions of that kind. This question divides into two parts: First: Are there a priori presuppositions in science and secondly: Are some or all of them necessarily valid?

3. As to the first question the answer is undoubtedly: Yes. Mainly we can distinguish five types of a priori presuppositions in science: instrumental, functional, axiomatic, judicial and normative. Let me explain that briefly. If we want to test a theory we make measurements with instruments. This presupposes certain theories about the functioning of these instruments. Of course some of these instrumental theories can be tested too but for that we again need measurements with certain instruments and certain theoretical presuppositions, etc. To avoid a regression ad infinitum we have to stop somewhere and somehow to stipulate the validity of some of our presuppositions. These are the instrumental presuppositions a priori in the given context. Now, if with their help we have got some dispersed measurement results we unavoidably have to make some extrapolations and some interpolations to get a curve which we can describe by a mathematical function. Again the principles on which these extrapolations and interpolations rest cannot be tested, but have to be regarded as a priori. These are what I called the functional presuppositions. With the help of mathematical functions we can construct the axioms of a theory.

How can we empirically test those axioms? Adding to them some initial conditions (e.g., by measurements) we can derive from them special basic statements and these basic statements can be compared with those basic statements which describe the outcome of measurements. If both harmonize we say the theory has been corroborated--at least for the present--and if they do not harmonize we say the theory has been falsified--at least for the present. But the corroboration never says that the theory is true because for logical reasons the truth of a conclusion--here the basic statements--does not imply the truth of the premises--here the axioms. On the other hand, the falsification does not say that the theory is false because this falsification depends on basic statements which themselves are dependent on theories and not all of these theories can--as already mentioned--be tested (some of them at least have to be stipulated a priori). Consequently the axioms of a theory are strictly speaking neither empirically true nor false but they are a priori stipulations (with more or less additional empirical evidence).

If one does not like this conclusion he should remember that, even if there are some axioms in a given context which do find additional empirical support, there will always be some too which do not. The reason is that at least among the axioms of the instrumental theories used there will be some--as already shown--which have to be stipulated a priori to avoid a regressus ad infinitum. Consequently in any case there are axioms and axiomatic presuppositions a priori in science. Now, because no basic statement strictly verifies or falsifies a theory we always have to use some criteria and principles according to which we decide whether in a special case we have to accept or to reject a theory. All the different propositions of inductivists, falsificationists, etc., according to which we allegedly have to judge about a theory on the basis of a given empirical evidence are of that kind. But obviously they are propositions for experience not by experience, and consequently they too are a priori ones. For that reason I call them judicial principles a priori. Finally there will be some ideas among scientist as to how to distinguish a scientific from a non-scientific theory or hypothesis. In other words they will use some norms in doing so.

Norms, however, as is clear by definition, are a priori because they do not say what is but what should be.

Again let me summarize: On the one hand we cannot set up a theory--or a hypothesis--without a priori norms and axioms; on the other hand we cannot test it without some a priori stipulations regarding the testing instruments or the constructing of functions and without some judicial rules. All this is the necessary framework in which scientific experience takes place, and all this is the necessary condition for doing any scientific work. These a priori presuppositions of science are like the rules of a game, the game of experience. Without them we cannot not play at all; with them we can play the game but it is only empirically that we can find its outcome.

4. Having shown that there are a priori presuppositions in science, are some or all of them necessarily valid? How could we be sure of this necessity? We know about strict necessity only in formal logic. Formal logic however, never teaches us about reality because its character is rather tautological. (Either it will rain tomorrow or it will not rain tomorrow is certainly logically and necessarily true, but it does not give us any information about what really will happen.) Nevertheless, metaphysicians believed in the necessary validity of certain a priori statements for different reasons. Some of them thought that there is something like an immediate rational insight into an absolute truth (Rationalism, Descartes); some of them thought that there are necessary conditions for the experience or the selfconsciousness of the ego (transcendentalism, Kant); some of them thought that reason produces a special dialectic and that reality is necessarily a mirror of that dialectic (dialectic, Hegel), etc. Of course, I can not name all these different ways of regarding statements as metaphysical (that is, as absolutely true) and even less can I try to discuss them here. But I can say this: Obviously none of them was convincing to such a degree that everybody necessarily accepted the alleged necessity maintained by metaphysicians.

That means that, in any case, they could not compete with the strict necessity recognized in formal logic and that their conviction lacks exactly that intersubjectivity to which they seem to pretend.

Consequently it is at least very doubtful if there are any statements which could be necessarily valid, and therefore metaphysical in the traditional sense. These doubts are strongly supported by the history of science. Almost all the statements which have been taken as necessarily valid have been given up sooner or later or at least one has found out that they present only one of several different possibilities. (I would like to remind the reader of the belief that the universe has necessarily an Euclidian structure, that physics has to be necessarily deterministic, that there has to be necessarily an ether, that there is necessarily an absolute difference between inertial and gravitational systems, etc. etc.)

5. Now, if on the one hand there are a priori presuppositions in science and if on the other hand they are not necessarily valid, another question arises: How can we avoid regarding these statements as purely arbitrary? How can we justify them? This is obviously the old Kantian *quaestio juris* in a new form which does more justice to the facts of the history of science.

My answer to this question is: Such a justification is only possible regarding the special conditions of a historical situation. To justify statements a priori will always mean to deduce them from other statements of that kind. We can deduce more special statements from more general ones, we can transfer a group of statements from one special field to another simply by changing their content and keeping their structure, etc. If, for example, somebody believes in the cosmological principle mentioned before it could be that he justifies it in a Copernican way. He could say that this principle must be true because generally the principle of the uniformity and

simplicity of the universe must be true and the last principle must be true because the divine creation can not be something obscure and confused but must be something clear and reasonable. We may or may not like such an argument, but it was very powerful in the history of science and, in any case, it shows clearly the logical structure of justifications of a priori presuppositions in science. We see also that the deduction in which those justifications consist stops somewhere in the historical background; in our special case this background is a certain theological idea rooted in the 15th century. So, on the one hand, justifications of a priori statements depend on a special historical situation which originated in a special epoch and will perish with it again; but, on the other hand, these justifications are not purely arbitrary because they are a consequence of the situation scientists live in. Between necessity and arbitrariness there is a third element: The logic of a situation. More, I think, cannot be expected by mortal beings.

Let me once more come back to metaphysics. Even if, according to my opinion, we have to give up the idea that there are presuppositions a priori in science which are necessarily true, I still think it reasonable to call some of them metaphysical. Take, for example, the already mentioned postulate of the simplicity and unity of the world. Isn't it rather an expression of a Weltanschauung? So far I have only spoken of a priori presuppositions in science. But how about a priori presuppositions of science? Let us look at the postulate that nature is a system of causal laws or let us look at the idea that laws have to be at least conceptually clearly distinguished, both from space and time and from the individual events which take place in space and time and are coordinated in them and into them with the help of laws. That this is not a self evident idea but one of the main presuppositions of science becomes very clear if we compare this scientific Weltbetrachtung with a mythical one in which the general and the individual, the law and the event, and again all this and space and time cannot be separated but are joined in special unities and concrete forms. It is not only the history of mankind which shows that the bases of the scientific Weltbetrachtung obviously are not necessarily imposed on the human mind; this is shown also by the analysis given here. Because this Weltbetrachtung is not the result of experience but a certain framework in which experience can take place. We never can grasp reality as such; we always have to start with special and even metaphysical presuppositions.

Let me conclude in the following way. Unavoidably there are metaphysical statements in science and there are also metaphysical presuppositions of science like the one just mentioned of a very general and basic kind. Metaphysics, however, does not consist of groups or systems of statements which are strictly necessary; it is rather an expression of and an answer to a special given historical situation or context in which scientists live. But even if there is not such a thing as the philosophia perennis, even if the different kinds of metaphysics, the different metaphysical presuppositions in, and the different metaphysical presuppositions of, science change in history and are perishable we should not feel depressed by that fact. Let me give a simile: What we see with our eyes we reasonably call true even if it depends on the special construction and conditions of our eyes. Suppose we would know these conditions to have changed as the result of biological evolution in the past and also that they will change in the future. Should we then stop enjoying seeing the world and should we then stop being convinced that we see true things?¹

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NOTES

1. For further discussion of the problems discussed in this paper compare: K. Hubner, Citizens of Scientific Reason, Chicago: 1985 und "Die Wahrheit des Mythos," Munchen: 1986.

CHAPTER X
COSMOLOGY AND THE PHILOSOPHER
ERNAN McMULLIN

A check through the standard bibliography of articles published in Western philosophy journals over the past three years shows that only about a dozen, perhaps, out of more than ten thousand entries qualify under the subject-heading, "cosmology." Cosmology is assumed nowadays to be part of science, just like paleontology or pathology. Is there any reason, then, to include a symposium on "The idea of the universe" at a Congress of Philosophy other than to let philosophers know what others have made of their estates?

There are several issues in contemporary cosmology which can properly be termed "philosophical". Two in particular have given rise to lively discussion. Neither is, in fact, new but both have taken on new and intriguing forms in recent cosmological debates. One is the problem of creation, the other concerns the "anthropic principle" favored by some cosmologists who seek to understand why the universe is the way it is. It may be worth outlining these debates in some detail in order to illustrate the sorts of question that cosmology continues to pose for the philosopher, and, conversely, to suggest what his contributions to cosmological discussion may be.

THE CREATION DEBATE

In the natural philosophies of Aristotle and of Newton, it seemed quite plain that time could have neither beginning nor end. The stretch of time past must be infinite. Yet for those who accepted the Biblical account of cosmic origins, it seemed as though the universe did, in fact, have a beginning. Newton had a relatively easy way to harmonize the two claims: the material universe was brought into being by God at a finite time in the past, but the space and time into which it came to be were alike infinite in extent. Medieval Aristotelians were less willing to separate matter and time; if matter began to be, then so did time.¹

The classical Augustinian account of origins made creation a single timeless act on God's part, an act through which time itself as well as the changing things of which time is the measure come to be together.² By a subtle analysis of the notions of time, cause, beginning, Aquinas endeavored to show, within a generally Aristotelian framework, that although natural reason could not of itself demonstrate that time had a beginning, there was in itself nothing incoherent about such a claim. Yet the tension between natural philosophy and the Christian world-view was not really dissipated by the efforts of either Aquinas or Newton, and there were many, like Bonaventure and Leibniz, who were emphatic in holding that an Aristotelian (or a Newtonian as the case might be) could not be sincere in his acceptance of the Genesis story.

It is against this background that one must view the controversy with which the expanding-universe theories have been surrounded from the beginning. The current Big Bang model postulates a singularity somewhere between ten and twenty billion years ago, from which the expansion of the universe began. For the first time, natural philosophy was led to assert, on its own resources, something that sounds like a beginning of time. No wonder that scientists and non-scientists spoke of this horizon-event as "the Creation", and of the time since it occurred as "the age of the universe".

But these identifications immediately give rise to two sorts of objection. How is one to know (a point made by Lemaitre in the earliest debates occasioned by his model) that the Big Bang was not preceded by a Big Squeeze? Why could there not have been an unending cyclical series, like Vico's *Ricorso* on a grander scale? Even though a Big Squeeze would destroy all traces of the history that preceded, some general features of the prior sequence (the period of the cycle, for example) might possibly be inferred.³ Though one might prefer to speak of the universe that preceded the Big Bang as a "different" universe, there could still be a perfectly legitimate sense in which, because it in some sense provided the "materials" for the next stage, it could be called the "same" universe as ours. Thus, the Big Bang cannot automatically be taken to be either the beginning of time or of the universe, nor can one take for granted that the lapse of time since it occurred is the "age" of the universe.⁴ Even if the progress of cosmology leads us to opt for the "open" rather than the "closed" expanding model,⁵ one which makes the universe expand indefinitely instead of endlessly "rebounding", this could hardly be said to rule out the possibility of a preceding stage of matter to which we simply have no access through the singularity.

Thus, there is no cogent reason to take the Big Bang to mark the beginning of time. On the other hand, there is no compelling reason why it might not have constituted such a beginning. Mario Bunge asserts that science requires a "genetic principle" which would exclude such "irrational and untestable notions" as that of an absolute beginning of the universe.⁶ His argument is that the "known laws of nature" require that explanation in terms of an antecedent be always available. E.H. Hutten makes a similar claim: the notion of a first event makes no sense (he says) because one can always ask: "what happened before?"⁷ The most determined opposition comes from Marxist-Leninist writers who claim that the notion of an absolute beginning has "idealist" implications, and that in any event it contravenes conservation laws and runs counter to the basic principles of dialectical materialism.

The notion that absolute beginnings of any kind are excluded by the laws of physics recalls the Aristotelian arguments for a similar position which were so warmly debated by medieval critics. The real question is the applicability of these laws to the sort of singularity the model postulates. Hawking is insistent that the laws of "normal" physics ought not be expected to apply to a singularity, especially not a singularity which comprises the entire universe.⁸ A genetic principle which tells the scientist he ought always seek for an explanation of a particular state by looking to an earlier state, or a conservation principle which directs scientists to try every other alternative before admitting that conservation of a particular sort fails, are in the first instance methodological prescriptions of a highly successful kind. Scientists ought not assume that the Big Bang has no antecedent; they ought to do whatever they can to establish a lawlike succession. But this is not to say that there must be an antecedent, that the success of these principles demonstrates that an absolute beginning is impossible. A metaphysical claim of this sort would require more on its behalf than an inductive appeal to the success up to this point of the genetic and conservation principles.

Our conclusion is that the success of the Big Bang model for the first time gives a way of construing in scientific terms what a "beginning" of the universe might look like from here. But now a second question arises. Suppose the singularity was, in fact, an absolute beginning: can it be called "the Creation"? Creation is the act of a creator. A spontaneous uncaused beginning would not be a "creation"; it would be an absolute coming-to-be, nothing more. The term 'creation' is an explanatory, not merely a descriptive, one.⁹ To say of the horizon-event that it was the Creation is to explain it in terms of a cause, a cause which is outside the time-sequence since its action is what brings time itself to be. Clearly, such an explanation is not a scientific

one; science of itself could not establish a sufficiently strong principle of causality. Can philosophy do this? Until Hume's time it was generally supposed that it could, but the critiques of Hume and even more of Kant have made philosophers wary of what has come to be called the "cosmological" argument. The matter is still a hotly-disputed one;¹⁰ on one point, however, there is general agreement and that is that the issue is a properly philosophic one.

Does the Big Bang model have any relevance to the issue? If the universe did "begin" at a point of time, would this give stronger support to the claim that a Creator is needed than if the universe always existed? Intuitively, one would be inclined to answer "yes" to this. An eternally existing universe seems a more plausible candidate for self-sufficiency than one which begins to be. Yet there are enough difficulties about the notion of "beginning" to warn one to treat this inference with caution. What can be said is that if the universe began by an act of creation, as earlier Western thought always supposed, then from our vantage-point it could look something like the Big Bang that cosmologists are now talking about. What cannot be said is that the Big Bang model somehow validates the "cosmological" argument for the existence of a Creator. The inference does not work in that direction.

It is interesting to note the extent to which philosophic presuppositions have affected the recent development of cosmology. The "Copernican principle" of the non-privileged status of our solar system or of our galaxy quite evidently had the status of a philosophic claim rather than just a convenient working assumption. Perhaps the most striking illustration of this is Fred Hoyle's rejection of the Big Bang model in the 1950's and early 1960's. He was (and still is) convinced that a theory which implies a past time-singularity beyond which the history of the universe cannot be traced, cannot be a good scientific theory.¹¹ What bothered him most was the affinity between the Big Bang model and traditional Western religious thought. His reluctance to abandon the steady-state model in the early 1960's as evidence continued to mount against it was motivated at least as much by this "anti-theological" principle as it was by the predictive virtues of his own steady-state model.

One recalls in this connection the theological principles which so influenced Newton in the construction of his system. That a cosmological theory should rest in part on philosophical or theological presuppositions is not necessarily to its discredit. What would be to its discredit would be to leave these presuppositions as simple expressions of belief and nothing more,¹² or to keep relying on their guidance in science even when this guidance continued to prove unhelpful.¹³

THE ANTHROPIC PRINCIPLE¹⁴

One of the liveliest debates in fourteenth-century philosophy focussed on the question: are the principles of physics necessary (as the Aristotelians maintained) or are they contingent (as the nominalists insisted). Might the universe have been other than it is? The Aristotelian view was that physics is a demonstrative science based on intrinsically evident principles. Contingency requires further explanation; if at the cosmological level one finds something that might have been other than it is, then one has to explain why it has taken the form it did. In contrast, something that is necessary requires no further explanation, and can thus be properly regarded as a scientific principle. The nominalist-voluntarist objection to this was that it limited God's freedom of choice; if God is free, then the universe might not only not have been, but it might have been of a quite different kind, operating in a different manner. To the charge that this left unexplained contingency at the heart of physics, the nominalists' response was two-fold.

First, they argued that a demonstrative science of nature is an illusory goal; some kind of likelihood is the best one can achieve. Second, the contingencies of the world can be explained, "explained" in a different sense admittedly than the Aristotelian would be willing to concede, in terms of God's will. The world is the way it is, not because it had to be so, but because God willed that it should be so.

A strikingly similar debate goes on around recent cosmological results. In the Newtonian universe, contingency abounded. It was plausible to argue, as Kant did, that the basic laws of Newtonian physics could not be other than they are. But the infinite universe of stars going in all directions was full of "could have been otherwise." The unification brought about in recent cosmology has revived the older question again. In an evolutionary universe each stage is explained by an earlier one. But when one gets back to the Big Bang, what should one expect? A state that could not have been otherwise? An entirely structureless entity? To put it in older terms, how can the Many come from the One, unless there is some multiplicity latent already in the One? And if there is, how is it to be explained?

Coming at it from another angle, how is one to decide whether a particular feature of the universe is necessary or contingent, since we have only one universe, and thus cannot fall back on the simplest way to test a claim to necessity, i.e. that it occur in all cases? The argument for necessity will have to be a theoretical one. But such arguments are difficult to construct and notoriously open to self-deception, as we have already seen in Eddington's case. The scientist is caught at this point. The case for necessity makes him uneasy; yet settling for contingency leaves him dissatisfied. If so far as one can see, something could have been otherwise, it seems fair to expect an answer to the question: well, then, why is it this way? Is there a limit to structural explanation, a point at which any further question (like: why is the proton/electron mass-ratio what it is?) is illegitimate? And is there a similar point beyond which genetic explanation cannot be carried, when we get back to a first state that just was that way?

In 1973, Collins and Hawking constructed a particularly teasing variant of the old question.¹⁵ The universe is known now to have a very high degree of isotropy; this is no longer, as we have seen, merely a simplification assumed for the sake of a first calculation as it had been in the past. What initial conditions would have allowed such isotropy to develop? It turns out that hardly any of the (so far as is known) possible initial conditions would have done so. It appears to be extremely difficult to construct a plausible genesis for the observed isotropy. It is not only contingent; worse, it is extremely improbable--"improbable", that is, in the sense that isotropy is produced only by an extremely small fraction of all the permitted ways in which a universe obeying the equations of general relativity might develop.¹⁶

How, then, explain such an apparently improbable occurrence? Collins and Hawking argue that galaxies can form only in an isotropic universe, and then go on to note that only where there are galaxies (and hence stars and planets) can there be life, and a fortiori rational life. If the universe were not isotropic, we could not be here to observe it. Since we are here, the universe must be isotropic. This is what Carter has called the "anthropic principle".¹⁷

The 'must' here is, however, a hypothetical one. If there are to be cosmologists, then if the argument is correct, the universe will have to be isotropic (and also very old, and thus very large).¹⁸ The necessity is the necessity of consequence. But why should there be cosmologists? So far as we can tell, there very well might not have been. Our presence does not, then, explain isotropy, though isotropy might help to explain our presence. The fact (if it is one) that a non-isotropic universe could not be observed, so that we could expect the universe to be isotropic if we did not already know it to be so, makes no difference. The presence of observers in a universe

may allow one to predict isotropy. But when isotropy is said to be a very "improbable" state, and we seek an explanation for why it should be the case, we cannot invoke the presumably at least equally improbable presence of observers. Why should the joint state: observers plus isotropy have occurred in the first place?

One may simply say: the explanation ends; this just is the way it is, and there is no more to be said. The anthropic principle might, however, be construed as an explanation if one or other of two further specifications were to be permitted. If the universe is the work of a Creator who wills that conscious life develop in it, if in other words, the traditional Judaeo-Christian view should be correct that the purpose of the universe is in part, at least, man, then the presence of man in the world would explain the isotropy, the size, the age, and all the rest. Note that this is a stronger form of explanation than the medieval one which would explain, say, the presence of elephants or snow in the world by simply invoking God's will. Reasons can be given in the traditional Judaeo-Christian perspective for why God would want man in the world. Thus, the explanation is not merely by the presumed fact of choice, but by some presumptive reasons for the choice. The anthropic principle, if fortified by the traditional doctrine of creation, does therefore give an explanation, though it is no longer, of course, a scientific explanation.

The second way in which the anthropic principle might be strengthened is to suppose that all or most of the possible universes do, in fact, come to be either in entire isolation from one another or, for example, in a temporal sequence punctuated by successive expansions and contractions.¹⁹ One would no longer ask: but why this (improbable) universe rather than another with a more likely type of configuration? They are all "there"; that we should find ourselves in the galactic one (rather than in one of the others) can then readily be explained. If all cars bore the same inscription: 'HUMAN-1', one would want to know why this significant-sounding phrase had been chosen rather than others. But if all six-symbol combinations of letters and numbers are in fact realized on different cars, seeing 'HUMAN-1' on one car will no longer seem so significant (though it will still draw our attention). The analogy is not exact but it may serve to suggest why if all possibilities in some domain are realized, the realization of some particular one ceases to be a special issue. Of course, one would still ask how, in the cosmological case, one could know that all the possibilities are realized. And one might ask, further, why any of them should be realized.

The anthropic principle derives, therefore, from the claim (1) that the most basic structures of the universe might have been different from what they are; and (2) that the presence of man depends on their being what they, in fact, are. The first premiss is clearly a vulnerable one. It is difficult to exclude the possibility that at some later time cosmologists may be able to show that the cosmical parameters governing the sort of universe in which we find ourselves could not be other than they are.²⁰ That the efforts of Eddington, Dirac, and many others in this direction have failed does not mean that success is impossible, only perhaps that their efforts were premature. It must, however, be said that for the moment at least, contingency seems well entrenched.

REGULATIVE PRINCIPLES FOR COSMOLOGY?

Is this all there is to be said? Until recently, philosophers were wont to make a far more robust claim. It was widely agreed that the philosopher could formulate some general principles which are prior to science and regulative of it. This would attribute a far more dominant role to philosophy than the contemporary cosmologist would be likely to concede, as we have seen.

How plausible does this claim now seem? Three broadly different types of warrant have in the past been advanced for it; they might be called Aristotelian, Cartesian and Kantian, as long as one keeps in mind that the historical figures from which these familiar labels are drawn were much too complex to be comprised under a single well-defined account.²¹ Can any one of these sorts of argument for a philosophical a priori carry weight in today's cosmology?

The Aristotelian, or broadly empiricist, approach is to assume that the knower can formulate on the basis of his everyday experience some very general principles in regard to motion, cause, space and the like. Because the categories employed are understood in a non-problematic way and are validated by even the simplest experiences of the world, the principles take on the character of very general truths about the world. The Cartesian, or broadly rationalist, approach is to suppose that an attentive inspection of certain of our ideas will disclose necessary connections between them; the ideas themselves are assumed not to depend on the specificities of experience. The Kantian, or broadly idealist, strategy is to take the most general categories of the understanding and forms of the intuition to be prior to experience and yet constitutive (or regulative) of it. In this way, synthetic a priori principles of a necessary sort can be derived from the possibility of experience. In each of the three cases, cosmological principles would rest on a different basis: in the first, on the natures of physical things, assumed to be directly known; in the second, on the interconnections between clear and distinct ideas; in the third, on the uniform structures of the human understanding.

Since science takes its origin in observation, its validity must depend on the integrity of that observation. Scientific theory cannot, therefore, call into question the general framework within which claims to "observe" the world are made, a reminder which Bohr felt called on to deliver to quantum theorists in the 1930's. But this of itself does not commit one to a philosophic a priori. How specific is the commitment to the epistemic structures implicit in everyday observation? Can these structures remain unaffected by changes in science? Just how prescriptive is the commitment to these structures in the scientist's regard?

Those who defend a philosophically-elucidated a priori which is supposed to be normative for the cosmologist tend to be committed to a sort of linguistic foundationalism, an assumption that the concepts, categories, forms, in terms of which the general principles governing the physical world (or our conception of, or our experience of, the physical world) are to be formulated, are somehow themselves given to us.²² They are assumed to be unproblematic, fixed, not in need of validation. Though he tried to be very careful about what he could assume, Kant never adequately clarified the manner in which the content of the terms through which his a priori principles are expressed (terms like 'time', 'matter', 'cause') is itself to be determined prior to all experience. It was not as clear in his day as it is in ours that the content of such terms can be altered by the progress of science (as the content of the terms 'force' had already been in Newton's time), and that this alteration is itself a complex affair, depending a posteriori upon the success of the explanatory theories in which these terms occur. In the more developed parts of science, the constructive power latent within the hypothetical procedure allows older concepts to be reshaped or new ones to be formulated.

It is, therefore, difficult nowadays to defend a Kantian distinction between a "pure physics" enunciating principles of the understanding given a priori and an "empirical physics" based on induction and thus merely contingent. Science suggests something closer to a continuous spectrum. Philosophers can still propose principles (the determinism of natural process or the impossibility of time-reversal, for example) from one or other of the classical viewpoints. But they have to be willing to allow a certain dialectic with science. The principle may have to be

modified or weakened in the light of a challenge from long-term successful scientific theory. Though it is not impossible that the philosopher should validly derive regulative principles "from the essential nature of the thinking faculty itself",²³ or from the epistemic situation of the observer, it becomes more and more difficult to maintain that a necessary claim of potential significance to the cosmologist could be arrived at in this way.

The choice between making science entirely independent of philosophy, making philosophy prior to and absolutely normative of science, and making the two interactive with one another, is one that has bedevilled Soviet science from the beginning. Indeed, the struggle between protagonists of these three approaches was one of the central intellectual preoccupations in the Soviet Union in the 1920's, until it was pre-empted by Stalin's imposition of the "normative" position in 1931.²⁴ Reverberations of the struggle can be found in Soviet cosmology. It is asserted over and over by Soviet scientists that fidelity to the principles of dialectical materialism accounts for the successful development of theoretical cosmology in the Soviet Union. The principles most often invoked are those of quantitative difference leading to qualitative leaps (so that, for example, the universe as a whole might be expected to have properties not predictable from those of its parts), and of struggle between opposites (suggesting, it is said, the importance of unstable stellar states and the fundamentally evolutionary character of stellar and galactic formation).²⁵

Some Soviet writers have made cosmology entirely subordinate to philosophy on matters of general principle. Sviderskii, for example, argued that finite universe-models are incompatible with dialectical materialism; only an infinite universe is admissible. Others (e.g., G.L. Naan) asserted that philosophy is not prior to, but is in fact derived from science, so that although it is normative in regard to science, it derives its warrant from science itself. It is hard to decide just what influence dialectical materialism has had on science; for ideological reasons it has been important to stress its superiority as a philosophy of science.

But either of the options leads to trouble. If it is attributed some sort of a priori status, the question insistently puts itself: how can pre-scientific experience warrant principles sufficiently general and sufficiently precise to serve as norms for a science of the universe? If it is made dependent on science, it can easily reduce to science itself, at its most general. More troubling still from the Marxist-Leninist viewpoint, this may make dialectical materialism vulnerable to challenge from science.

The most renowned Soviet cosmologist, A. Ambartsumian, has always insisted on the directive force of dialectical materialism in cosmology. Consistently with this, he has argued that his own reliance on it in the formulation of successful theories, serves to confirm its value. But this is a dangerous move. One of these theories had to do with the evolution of stars, for example; Ambartsumian opposed the view defended by Jeans and Eddington that stars are relatively unchanging even across vast intervals of time. But now suppose the latter had been right? Would this count against dialectical materialism? Should the widespread opposition to the Big Bang model among Soviet cosmologists count against the philosophy that inspired it? One need not be a Popperian to believe that an outcome cannot confirm, unless its opposite would count against. To say that Jeans and Eddington could not possibly have been right, or that the universe as a whole must have properties that differ from those discoverable in its parts, would imply that dialectical materialism includes a metaphysics whose warrant is prior to science and is not dependent upon it.

Outside the Soviet Union, there are few today who would attribute to philosophy a directive role of this sort in regard to cosmology. Philosophers like Whitehead and Broad constructed

powerful metaphysical systems of "mixed" warrant, that is, by relying on both epistemological and more specifically scientific grounds. The problem in the end is one of meta-philosophy, of deciding on the sort of warrant that is appropriate to philosophic and to scientific claims, seen not as two entirely distinct sorts of intellectual pursuit, but as a continuum. What has made the issue more intractable is the pace of development of theoretical cosmology, a pace too rapid of late to allow meta-philosophy the time it needs to take stock.

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NOTES

*An enlarged version of this paper, delivered at the World Congress in Dusseldorf in 1978, appeared under the title: "Is philosophy relevant to cosmology?" *American Philosophical Quarterly*, 18 (1981), 177-189.

1. It is ironic to find P.C.W. Davies (*Space and Time in the Modern Universe* [Cambridge: Cambridge University Press 1977]) claiming that the view of space and time as "concrete properties of the material world" is the product of modern science. The "biblical account of creation" (he asserts) assumed that God built "form into a pre-existing but uninteresting space and time," imagining God "reigning in an earlier phase of the cosmos and being motivated to cause the cosmos" (op. cit., pp. 216-217). But this is precisely the (Newtonian) view of creation that Augustine, the first Christian theorist of creation, and the legions of medieval philosophers who were influenced by him, were concerned to reject!

2. *De Civitate Dei*, Book XI, Chapter 6.

3. In her very useful review, "Cosmology: Man's place in the Universe" [*American Scientist*, 65 (1977), pp. 76-86], Virginia Trimble assumes that the successive cycles would each constitute a separate universe, and remarks that "the question: What happened before the Big Bang? belongs to the realm of pure speculation (philosophy?) rather than that of physics. It is rather like putting a car into a steel blast furnace and asking [of] the trickle of molten metal that comes out whether it was a Pinto or VW before" (p. 78). Of course, one could ask whether it was a Pinto or a Cadillac; a mass measurement might well suffice to answer this. Cosmologists who postulate a contraction preceding the Big Bang are not just indulging in "pure speculation," but are assuming that some parameters either remain invariant (total mass?) or are continuously traceable (radius?) throughout. Hawking has, however, raised some doubts whether even this sort of "information" could come through the singularity ("Breakdown of predictability in gravitational collapse," *Physical Review D*, 14 [1977], pp. 2460-2473).

4. One further complication about the notion of "age" in this context is (as Milne first pointed out in his *Kinematic Relativity* [Oxford: Clarendon Press, 1947]) that it may come out either as finite or infinite, depending on the choice of physical process to serve as basis for the time scale. Thus, even if one takes the Big Bang to be the event from which the age of the universe is to be counted, that "age" could still come out as infinite. To decide, therefore, whether the Big-Bang universe should be said to have had a beginning requires further precisions about the notion of beginning and of time-measurement. See C. Misner, "Absolute zero of time," *Physical Review*, 186 (1969), pp. 1328-1333.

5. Gott et. al. argue in a recent paper that the evidence already favors the "open" model. See "Will the universe expand forever?", *Scientific American*, 234 (1976), pp. 62-79.

6. *Causality* (Cambridge, Mass.: Cambridge Univ. Press, 1959), pp. 24, 240.

7. "Methodological remarks concerning cosmology", *Monist*, 47 (1962), pp. 104-115.

8. "Black holes and thermodynamics", *Physical Review D*, 13 (1976), pp. 191-197; "The quantum mechanics of black holes," *Scientific American*, 236 (1977), pp. 34-40.

9. Bondi has argued that the steady-state model brought the "problem of creation" into "the scope of physical inquiry," by proposing a statistical law which the new appearances of matter in that model would follow (*Cosmology*, [Cambridge: University Press, 1960], p. 140). Whether such a law explains the events depends in part on what one thinks of the D-N model of explanation. But even if it does, it certainly does not entitle one to assume that the problem solved is "the problem of creation."

10. See, for example, W.L. Rowe, *The Cosmological Argument* (Princeton: Princeton Univ. Press, 1975); D. Burrill (ed.), *Cosmological Arguments*, (Garden City, N.Y.: Anchor, 1967).

11. *Astronomy and Cosmology* (Garden City, N.Y.: Doubleday, 1975), p. 684. Note that this goes much further than the rejection of absolute cosmic beginning; it would exclude a Big-Bang type of singularity even if it were not an absolute beginning. See also Chapter 1 of his *Ten Faces of the Universe* (San Francisco: W.H. Freeman, 1977), with its highly emotional attack on religion generally, and on belief in "beginnings" specifically.

12. In *Ten Faces of the Universe*, Hoyle continually uses such phrases as 'I believe' or 'I prefer'. There is, at the very least, something premature about Davies' assurance to his readers that the new cosmology (unlike older world-views) "does not deal in beliefs but in facts. A model of the universe does not require faith but a telescope", *op. cit.*, p. 201.

13. Hoyle has recently proposed a new and ingenious model which explains galactic red-shifts by a steady increase in the masses of elementary particles over time, galactic distances remaining constant. The model does have a singularity in the past when all particle masses were zero. But Hoyle argues that one can plausibly postulate a prior cosmic state of negative masses, as well as a far larger universe, homogeneous over time on a scale much larger than even clusters of galaxies (thus escaping refutation from the growing evidence for local inhomogeneity over time). The theory is ad hoc to an altogether alarming extent -- alarming, that is, to anyone who is not more alarmed by an absolute time-beginning.

14. I am indebted to my fellow-panelists at the Dusseldorf World Congress of Philosophy (1978), Professors V. Weidemann and R. Sexl, for their clear delineation of the problem treated in this section.

15. "Why is the universe isotropic?", *Astrophysical Journal*, 180 (1973), pp. 317-334. For further references, see V. Weidemann, "Cosmology: science or speculation?"

16. It should be emphasized that this is not generally agreed. Trimble, though she agrees that the universe is a "delicately balanced" one in regard to the possibility of the development of life, supports the earlier view that galactic formation is an expected development: "The matter at this [early] stage was not perfectly smooth but was concentrated in lumps. . . . The cause of the clumps is not well understood, though they are not unexpected, since, when the universe was very young, there had not yet been time for interactions and smoothing to have occurred across large distances. But they must have been there, because we see galaxies and clusters now" (*op. cit.*, p. 78). It is the explanatory force of this "must have been" that is at issue.

17. B. Carter, "Large number coincidences and the anthropic principle in cosmology", in *Confrontation of Cosmological Theory with Astronomical Data*, ed. M.S. Longair (Dordrecht: Reidel, 1974) pp. 291-298. Carter uses a similar argument to "explain" why gravity is so weak, by noting that stable stars (and hence planetary life) could not develop were gravity to be a stronger force.

18. Davies, *op. cit.*, Section 7.3.
19. Trimble speculates that they might be "imbedded in five (or higher) dimensional space, existing simultaneously, from the point of view of a five (or higher) dimensional observer" (*op. cit.*, p. 85).
20. Trimble, *op. cit.*, pp. 85-86.
21. For a more detailed account see E. McMullin, "Philosophies of nature," *New Scholasticism*, 43 (1969), pp. 29-74.
22. This "myth of the given" has been very much the center of critical discussion in recent philosophy of science. See, for example, W. Sellars, *Science, Perception and Reality* (New York: Humanities Press, 1963).
23. Kant, Preface to the *Metaphysical Foundations of Natural Science*. It is in this work, perhaps, even more than in the *Transcendental Analytic of the Critique* that the difficulties of the Kantian "pure physics" become evident.
24. David Joravsky, *Soviet Marxism and Natural Science* (London, 1961), and review article, E. McMullin, *Natural Law Forum*, 8 (1963), pp. 149-159.
25. See L. Graham, *Science and Philosophy in the Soviet Union* (New York, 1972), pp. 156-188, for the material on which this and the following paragraph mainly depend. See also N. Lobkowicz, "Materialism and matter in Marxism-Leninism," *The Concept of Matter in Modern Philosophy*, E. McMullin, ed. (Notre Dame: University of Notre Dame Press, 1978), pp. 154-188.

CHAPTER XI

METAPHYSICS AND THE FOUNDATIONS OF ETHICAL AND SOCIAL VALUES

JOHANNES LOTZ

The theme of this paper is that metaphysics can provide a foundation for ethical and social values (positive aspect) and that without metaphysics no justification can be given to these values (negative aspect).

MAN AS PERSON

To treat this theme it might be noted that the human being is the bearer of these values, and therefore, one should ask first: what is the relationship of the human being (Mensch) to metaphysics? It must be made clear that he is rooted in that which is investigated by metaphysics. Is he still the 'animal metaphysicum', as in former times? To put the question more exactly we must look to that dimension of the human being which plays the deciding part in ethical-social life and which makes the human being a person. We have to discuss therefore whether and how the human being, specifically as person, is distinguished by his openness to metaphysics, and whether and how, according to this openness of the person, the human being has the necessary ethical and social values.

We shall begin with men or women (Menschen) as persons with two commonly accepted characteristics. First the person is, as Kant puts it: an end in himself (Zweck an sich selbst). Therefore, it is against his or her being to be used as a mere means to an end; his independence (Eigenständigkeit) is such that he exists never merely for someone else, but for himself. Secondly, the person is an individual, a single being; as such one stands out inasmuch as he exhibits a characteristic singularity. Accordingly, the person is not a homogeneous indifferent atom of man within the multitude or the mass, able arbitrarily to be replaced by some other atom. Rather the person appears as non-interchangeable and irreplaceable at any given time as this particular person; the person is always a singular that cannot be repeated. To the extent the person loses his singularity (Einmaligkeit) and with it his individuality, it is possible to take the person as a means for an end, and accordingly to use or consume a person. Of course, the person's singularity must not be overemphasized to the extent that the commonness of human nature (Menschennatur) disappears.

Independence and singularity manifest the individual life of the person, which displays itself in two characteristic features which show more exactly what the person is. The first characteristic is the self-consciousness (Ich-Bewusstsein) of the person. One does not lose himself in the other or others, nor does one have a diffused or fuzzy consciousness as does the ego-less animal; instead one lives in a clear consciousness of himself. He has always seized his own self and can therefore say to himself, "I." This agrees with the complete return upon oneself (reditio completa) which Thomas Aquinas assigns to the human being; he observes in the animal merely the beginning of a return to one's self (redire incipit). Accordingly, man comes to himself as a person, or is coming to himself, by himself. He is a person, insofar as he still becomes a person; and he becomes a person insofar as he already is a person.

The second characteristic of the person is his freedom (freie Selbstverfügung) to dispose or apply himself. By this characteristic one is not irresistibly handed over to the forces which arise

from one's own inner being, or those to one's surroundings. Rather, a person of himself stands back, as it were, from these powers so that he can respond with a yes or a no, can accept or discard. The person is not made to live by powers which overcome him, but lives on the basis of his own decision. In other words, he is not determined as a mere member of the whole of nature, but determines himself within the totality of nature; and on top of that, the person subjects this totality to his own determination in the creation of culture. A person's self-disposing capacity completes the self-consciousness, inasmuch as it distinctly expresses his independence and also his singularity. The former is without doubt apparent, the latter can be inferred from the fact that freedom develops its own and new initiatives, and does not accept the same fixed pattern.

PERSON AND METAPHYSICS

Our description of a person leads us to the question of whether and how the person is rooted in the metaphysical. The answer can be found through the transcendental method by looking for the reason which makes possible the two characteristic features by which a person can be recognized. In the self-consciousness the person reaches himself and therefore what he truly is; whereas, as long as the person remains in the realm of what he appears to be, or in the mere appearance of himself, and does not reach what he is, he does not truly come to himself and is not with himself or in his self-consciousness.

C.G. Jung, with this in mind, developed the difference between the persona or the role someone plays, and the person someone is. What a person really is, or what he himself seems to be, cannot be clear for the person while he remains locked in himself as this limited being. Every limited being discloses itself according to its own relative viewpoints. From this point everything shows itself according to the person's limited perspective, but not in the way it really is. This is the case with an animal which, therefore, can never reach itself or its own "I." Consequently, a person is capable of breaking through to his own being only when he steps beyond himself as this limited, confined being, and breaks through to the unlimited, unconfined Being-itself (Sein-selbst) which embraces and establishes all that is being and discloses the absolute viewpoint. Only from that viewpoint can a being show itself as it is in truth. Because the self-consciousness essentially includes a grasp of one's own being (das Ergreifen), it presupposes reaching out (den Aus-griff) to the all inclusive Being-itself and with it the foundation of the metaphysical.

The same thing holds for the person's freedom to dispose of himself (freie Selbstverfugung). The person is subject to the ever-present limiting impulses from within and without. But these are not irresistible as long as the attractive goods are unable to satisfy one's striving, i.e., when such goods, as the material object, a personal striving whose formal object is transcendent. On principle (though not factually in every case) the person confronts all limited goods freely, for fore, the formal object, which constitutes his striving and willing is necessarily unlimited. On the other hand, while all being is limited, the willing (das Wollen) stretches out to the all-inclusive or unlimited Being-itself (Sein selbst) which here appears as the good, while in the case of the self-consciousness it becomes effective as the true. Inasmuch as the person himself is a limited being, not only can he freely exercise control over such impulses, but he can also control himself as he accepts and rejects himself, completes or destroys himself which again is possible only by looking to Being-itself. According to this, man's free self-disposition is similar to his self-consciousness insofar as it presupposes reaching out to being-itself, by which the person, according to his two characteristic features or fundamental accomplishment (Grundvollzuge) is grounded metaphysically. Without this metaphysical

grounding the person would dissolve. One who explicitly rejects the metaphysical dimension of the person is continuously implicitly refuted through the very accomplishment (Vollzug) of his personal life.

METAPHYSICAL AND ETHICAL VALUE

Now that we have shown the foundational metaphysical structure of the person, through its help we can develop the connection between metaphysics and ethical values. In the person, the order of morality is set off from the order of nature. In the sub-human order of nature (untermenschliche Naturordnung) all proceedings play themselves out according to the unavoidability of a "must" (Muss). This does not change because of the indetermined relationships in the microphysical realm (Heisenberg), whence comes even the least statistical necessity in the macrophysical realm. In contrast to that order the ethical order is distinguished by the "ought" (Soll) which contains and manifests freedom. Certainly, the "ought" has a certain binding force; this however does not exclude, but opens toward freedom because when a certain action is demanded one is capable of doing the opposite. The action does not happen by itself or with the necessity of nature, but only through freedom. Since only the person possesses freedom, the moral order has an essentially personal stamp, while the order of nature is one of the impersonal or of "things."

On closer inspection, the natural and the ethical orders in man compenetrates: his personal life is imbedded in pre-personal happenings. In the child, the latter is first preponderant; while the former emerges from it gradually. In the mature man, at the high point of his life, the personal reaches its fullness. Not all human beings reach the same level of maturity, for freedom is the possibility of either taking freedom up to use and develop it, or withdrawing from it, not using it and so letting it spoil. With regard to the last alternative, however, and except for psychological disorders, no one can completely suffocate his freedom, although he can continue to let himself be driven by impersonal or unfree forces. In this regard, also, although ethical action is not so manifest, one who is ethically undeveloped falls behind the fullness of his humanness and becomes compulsive for lack self-identity and personal independence.

For the person freedom is that capacity for self-determination which essentially imparts a certain directedness (Gerichtetheit) along with human obligation or "ought" (Soll). Against this, Sartre sees freedom as the complete absence of determinateness (Bestimmungslosigkeit) so that man has no preimpressed essence or pre-given value order. He is only what he makes himself to be through his freedom. As this would lead to chaotic arbitrariness Sartre adds that everyone has his own freedom to work out an agreement with the freedom of all others. This contradicts his initial statement on freedom as the absence of determinateness by introducing determinateness (Bestimmtheit) or directedness (Gerichtetheit) into human freedom. Indeed, a certain essence (Wesen) has been stamped into man by his freedom, which singles him out from all sub-human beings, namely, the quality of standing out from, or of standing in Being-itself. Heidegger points to this when he says: The essence of "being-there" (Da-sein) is "ex-istence" (Ek-sistenz). This essence does not destroy freedom, as Sartre thinks, but stands at its very root. From this same essence springs the directedness (Gerichtetheit) which is essentially interwoven with freedom, or the binding "ought" (Soll) which demands that freedom shape one's life inasmuch as the person's freedom is not forced to do this. The different aspects of this essence and work of life-formation have their manifold values which attract our freedom and which, in turn, freedom has to realize.

Since the person as free is founded in the metaphysical and requires fixed ethical values, these values also have their roots in the metaphysical, without which the ethical would not exist.

MOTIVATION AND CONSCIENCE

It should be noted that ethical action is related not to what is determined (Determination) but to motivation. While what is determined denotes an influence which excludes freedom, motivation weighs the reasons (Grunde) which speak for or against a certain action, and which go back to the values that always are considered. This weighing of reasons does not lessen freedom, but leads to its completion, because it does not replace one's decision, but prepares for it and makes a pertinent decision possible. Only from such weighing or pondering could there emerge a truly personal action which depicts the individuality of a free person, usually known as a human act (actus humanus). The unconsidered deed, however, which shoots forth without the participation of freedom, is similar to impersonal happenings and is called an act of man (actus hominis) because, though it comes from man, it does not do so in a way that is proper to man. The preceding paragraph shows clearly how motivation attaches itself to the directedness dwelling in freedom, and how it concretizes this directedness for the here and now. Accordingly, ethical action develops itself from motivation: through weighing reasons or values it becomes truly free or personal and enables the metaphysical dimensions of the person to pervade every day life.

It is by conscience that we grasp the ought (Soll) dwelling within freedom and concretize it in individual behavior. It has its origin neither exclusively in the super-ego (Uber-Ich), nor in one's environment, as one often hears today. Its word (Spruch) comes from the depths of the person, where one becomes aware of what he is and what he, therefore, ought to be. In other words, in our conscience we meet our own being as our task or mission (Auftrag), both as it spans our whole lifetime and as it stamps us for the present hour. Because of this root, the conscience is imperturbable and capable of recalling itself to itself when it strays from its own track.

In specific cases, the conscience can be immature or mature, and consequently hazy or clear, mal-formed or well-formed and therefore false or true. One lives without a conscience when one has silenced it or goes against its unmistakable warnings. One acts according to one's conscience to the degree one faithfully follows its lead and so reaches one's true goal or life-truth. In this he avoids and overcomes his life-lie, into which the conscience-less person throws himself. Both the person with and the person without a conscience remain in the ethical realm, for the person can never leave that. But only the one with a conscience realizes the ethical dimension according to his own proper character (Eigentlichkeit), while the one without a conscience cannot get out of his peculiar perversion. Inasmuch as conscience continuously accompanies the person and derives from the very depths of man, at its roots it reaches the metaphysical or has a deeply metaphysical imprint, without which it would evaporate.

UNCONDITIONED OBLIGATION

Let us examine more in detail that by which the ethical bond surpasses other bonds or the nature of the "ought" (Soll) which, through one's conscience, makes demands upon us. Briefly, this "ought" distinguishes itself through its unconditionality (Unbedingtheit). Only one conditional bond can be expressed in the entire length of the if-then statement: if you want to

reach this goal, you will have to use the means necessary for it, just as the vocation of the physician requires a special education. In this and in similar cases, the bond is merely conditional, because one has to make use of the means only if one wishes to reach one's goal, and no other means will bring this about.

In contrast, the ethical "ought" imposes upon man an unconditional bond independent of every other bond, that is, it has value under any condition and the bond cannot be lifted. This unconditionality shows itself in the case of one's faithfulness to conscience, in the case of one's respect for human dignity, and in the case of the objectionableness of slander or of the misuse of the person as a mere means to an end. The person who in such cases goes back to an if-then connection, covers up all that is conditional or all the previously considered givens (Gegebenheiten). Certainly one could formulate the proposition that man must follow his "ought" only if he wishes to act ethically or to lead an unobjectionable life. However, that formulation differs essentially from the one mentioned above insofar as the ethically good action is precisely not left up to the discretion of man (as in the case of the physician's vocation). Rather, man is bound by the "ought" itself and is called unconditionally. In this lies the foundation of all other demands of the ethical order.

Today, one often hears it objected against the unconditionality of the ethical ought that it contradicts the historicity (Geschichtlichkeit) of all human actions. According to this, all these regulative norms have only a time-conditioned and, therefore, a conditional value: unconditional norms valid for all times would be excluded. The same would be said about ethical values, since the norms formulate the binding force given with the values. This objection is overcome by the fact that historicity would abolish itself if everything were subjected to the comings and goings of things in time or if nothing endured through change. If there is to be historicity then the foundation which makes it possible must endure. This foundation corresponds to the human foundation or structure, as was developed above, but it cannot be proven here in detail. In the same foundation or structure is rooted both the unconditionality of the ethical ought and the ethical values themselves, as will be made clearer in the following paragraphs. The given, trans-temporal, unconditional kernel of the ethical appears to us solely, but also truly, in completely time-conditioned realities. Therefore we can speak of the historical (geschichtlichen) unconditionality of the ethical in which neither of the two elements replaces or disappears into the other.

The ground or basis of possibility (ermöglichenden Grund) of the unconditioned in the ethical obviously cannot be found in the conditional, because the former essentially and incalculably supercedes the latter. Insofar that man is a being that is becoming (als Seiendes) one is only somewhat conditioned, insofar as Being (Sein) comes to him only with boundaries inasmuch as it is conditioned by one's essence. Whereas he is a relative being which is becoming (relativ seiend) or alone in a view peculiar to himself, the unconditioned is characteristic of the absolute standing free from any mere viewpoint. Thus man can be considered the bearer of unconditionality only if his imbeddedness (das Hineinragen) in the all-encompassing Being-itself belongs to his constitution. This imbeddedness attests to the Being in every point of view or beyond all boundaries, and thus to the absolute. This openness (Offenbarkeit) of Being-itself is expressed in the essential character of man's particularity and actions, so that the latter (his essential character) would not be what it is without the former (the openness of Being-itself).

Therefore, the unconditionality of the ethical leads to the same foundation-structure as that for man, which structure has shown itself to be the root of man's personal life. He is the being-which-becomes (das Seiende) constituted through the openness of Being, or he is the relative

being which is constituted through the lighting up (Aufleuchten) of the Absolute. In other words, ethical values are grounded in man only insofar as, even in the physical order, he has already reached, and lived on the basis of, the metaphysical.

COMPARISON TO OTHER VIEWS

What has just been said can be made clearer through some comparisons. Because Heidegger stops at the respective and therefore relative participations of Being (Seins) and does not take into consideration the clarifications (Aufhellung) of the one Being-itself, he does not penetrate to the absolute and therefore finds no foundation for the unconditionality of the ethical. Because Scheler sees only the becoming or changing character of being (das Seiende) and remains in forgetfulness of Being, he can preserve the unconditionality of ethical values only by asserting that these latter are independent of changing beings (Seienden) and by raising these ethical values to his own peculiar region of an emotional a priori. This is not sufficient, although a particular explanation of why this is so cannot be gone into here.

With regard to Hegel, it is important to develop the difference that has already been shown, the one which Heidegger calls the ontological difference (ontologische Differenz). In man this distinction manifests itself insofar as he is a changing or relative being reaching out to Being or the Absolute. As a being which is in the process of becoming he participates in Being or the Absolute, but he is not, however, the Being-itself or the Absolute. Genuine participation in the Absolute provides the foundation of the unconditionality of the ethical in man. Mere participation (Teil-nehmen) in the Absolute brings with it the historically conditioned forms of the ethical which mark man in his finiteness. While bound to the becoming or relative being, Being or the Absolute is not entirely itself in man. Thus the Being or Absolute dwelling within (immanente) man points beyond itself and man to its own form, in which it is totally itself.

Thomas calls this being beyond (transzendente) man, the subsisting (das subsistierende), standing in its own right as being itself, and Being itself. It is the absolute simply; separated from man and all becoming-beings, it is fully independent Being. It is, finally, the divine Being and the personal God, since the subsistence of Being is synonymous with complete openness, with self-consciousness and with the quality of freely disposing of oneself. God is the unconditioned one, the highest completion and, therefore, beyond every conditionality.

Thus, he shows himself to be the ultimate foundation for the unconditionality of the ethical ought or for ethical values, while man is merely, but also truly, the next foundation. Only insofar as man, by means of Being-itself, participates in the unconditionality of the divine Being or ultimate foundation can he, as the next foundation, bear the unconditionality of ethical values. He who denies such participation loses, with the ultimate foundation for the unconditionality of the ethical, the more immediate foundation, and consequently ethics itself. With the ascent to subsisting Being, we have reached the innermost kernel of the metaphysical, without which Being-itself, the unconditionality of ethical values, and even the person himself fall. For all of these, therefore, this foundation in the metaphysical is absolutely decisive and indispensable.

In the light of these findings, we can examine Hegel for whom the ontological difference takes on a dialectical character. Man, as a relative and changing being, is a dialectical moment in the unfolding of absolute Being; consequently he is identical with this dialectic. The uniquely unconditioned unfolds itself in the course of the conditioned (Durchlaufen des Bedingten): without the conditioned the unconditioned is a falsehood or not itself. Only in the conditioned can it attain to its truth and be totally itself. Finally, the dialectic is characteristically an

exchange, according to which not only does the conditioned reach its truth in the unconditioned, but also the unconditioned in the conditioned. As this whirlwind (Wirbel) does not permit a merely unconditioned, the unconditionality of ethical values is dissolved by this dialectic. For this reason, a dialectical metaphysics is not sufficient, although it surpasses the denial of any metaphysics.

The metaphysical foundation developed for the ethical "ought" as well as for the separation of ethical values can be made clearer in relation to further ethical data and individual ethical values. With the "ought" comes first of all the bond of duty; it carries with it responsibility and it is cause for guilt. In all this there is an unconditionality at work, from which alone stem the unqualified ethical character of such experiences, and such unconditionality necessarily shows the presence of the metaphysical.

THE BASIS OF SOCIAL VALUES

Closely connected with the ethical values are the social ones. Because many ethical values touch upon the social area, and contrariwise, one's social life has many ethical aspects. The statement goes even deeper: ethical and social values grow from the same root. Aristotle had been clear that man is not a simple or isolated entity, but needs to live together (Zusammenleben) with his peers. Man completes himself only in community and in his association with others, not in separation from them. In the animal kingdom we already find an anticipation of such living together, specifically in what one calls by analogy ant and bee colonies. The social life of man essentially exceeds such structures in openness and depth, as can be seen from what was said above about the person, for the person is grounded in the openness of Being-itself, which on account of its fullness embraces everything. This shows boundless openness to be the ultimate ground for all things, reaching a depth that cannot be equaled. In virtue of this same openness of Being the person is as much with himself as he is with others: both poles of this encounter come to the same depth as two communicating tubes. More precisely, the possibilities of communication exceed all boundaries in extent and depth, while from both points of view actually completed communication remains subject to boundaries. As this boundlessness originates because it concerns the openness of Being, so the boundaries arise because man, as a being who is becoming, only participates in this openness.

In the communication established for social life both partners are humans and persons. In this process the openness of Being shows itself in both parties as they bring to each other openness which in extent and depth may transcend all boundaries. However, the possibilities thus given are never totally exhausted because both partners cannot exceed the boundaries which exist for all changing beings, even though the partners can push these boundaries further and further away. Their communication becomes progressively richer the more the openness of Being unfolds itself in them and rules their reciprocal exchanges.

This points out two complimentary aspects. Each one goes to the other in such a way that he goes over to the other. There is no contradiction here; but for each of the two sides the other is fixed by Being-itself. This opens each partner to the other and at the same time strengthens him in himself so that he does not lose himself in the other. As the same Being both strengthens each of the partners in themselves and opens them to the other person they do not suffocate in their own narrowness.

In the measure Being is dissolved, the two sides fail in their meeting with one another, or a contradiction forms between being secure in oneself and going over to the other. Without Being,

one either goes to the other in such a way that he is not secure in himself and thus has to lose himself in the other, or he secures himself in such a way that he does not go over to the other and therefore becomes locked up in himself. Since Being-itself is precisely the root of all that is metaphysical, it alone makes possible this communication or meeting between men which is social life.

SOCIAL LIFE

The different ways in which human beings have contacts with each other can be explained through the openness of Being. One can meet the other as an it, as a he, or as a you. Someone treats another as an it, or a thing, and not as a person, when he takes him or her simply as a thing, and forgets the openness of Being which takes place in him; on this level the person is apt to be misused as a mere means to an end. Someone treats another as a he or she when one in fact respects the person in him and does not degrade him to a thing or to a mere means to an end. However, one may be interested only in the accomplishments of the other and not in the person himself; therefore this person can be replaced by another who can achieve the same thing. Here the openness of Being remains in the background and does not extend past the mainly material accomplishments to the one who realizes them.

Someone treats the other as a you or thou, however, when the person himself, and not his accomplishments, is the focus of attention. This other cannot be replaced and is respected as a person in the fullest sense. Since the openness of Being belongs to the constitution of the person, it becomes the characteristic basis of the relationship, which is thus lifted to its proper I-Thou level. As our presentation shows, if the kind and depth of social relationships cut themselves off from the empowering force of Being and thereby from the metaphysical, then in the measure that these relationships degenerate into the quantifiable the metaphysical dimension is lost.

We can come to better understand the significance of this, if we consider certain value-systems which play a decisive role in I-Thou relationships. First we should consider love which unfolds itself in two ways: a self-referral (*ich-bezogenen*) and a self-freeing (*ich-freien*) love. With the former I meet the other for my sake; in the latter I love him or her their sake. Only through this latter love can I proceed to the partner-love relationship in which I go beyond my own horizon and enter that of the other or wish the other well. As Augustine has beautifully formulated it, I will that the other be (*amo: volo, ut sis*). I say yes to the being of the other and contribute to it, so that he or she becomes more and more the person he is and ought to be. According to our earlier discussion, this occurs only when I remain in the horizon of Being-itself, that is, the openness of Being; the metaphysical is the ground that makes true love possible. Accordingly, in the measure love turns itself into self-seeking or hate, the metaphysical is lost or Being is forgotten.

Similar things can be said about the confidence which comes out of love. The more deeply human beings love each other, the more they place themselves and their affairs in the hands and heart of the other, confident that nothing will be misused. Herein lies trust in the partner, which presupposes his or her trustworthiness. This is possible only insofar as one is unshakable, but because of their limitations all beings are at all times subject to shock. Only Being-itself alone is unshakable, due to its unlimitedness. Therefore man is unshakable only to the degree he goes beyond himself as a changing being and makes himself one with Being-itself. Consequently, trustworthiness--and, with it confidence--are rooted in the metaphysical.

It is similar with faithfulness, by which a person gives himself to another or is at his disposal. He will not leave him even in bad times, but is willing to bear difficulties with him. Often he will be faithful to the other for a whole lifetime, even if the other disappoints him. Again, as a limited being one is fickle and inconsistent, but can gain strength and consistency to the degree that one takes root in the unlimited being or is grounded in the metaphysical.

COMMUNITY AND SOCIETY

Let us turn now from "I-Thou" relationships to "We relationships" in which community and society realize themselves. For community we will use the example of a nation (Volk) and for society that of the state. In the state tensions exist between the single person and the all-encompassing totality. Extreme solutions submit one of these two poles totally to the other and result in either liberalism, on the one hand, or totalitarianism, on the other. These can be overcome through a middle way in which the person serves the whole and the whole serves the person. The person serves the whole in order that it be capable of giving to the person the prerequisites for the full-development of the person. Hence, the person is subordinated to the whole only conditionally. This is proven from the previously developed idea of the independence of the person, who as his own self can never be a mere means to an end. The priority of the person is clear here. This could not be said of the person as a limited and changing being, because in these terms the state would be the greater being surpassing the person. On this account, precedence must come to the state.

Correspondingly, priority belongs essentially to the person from the fact that the person is rooted in Being and participates in its absoluteness. The person is thus subordinate to the state only insofar as it is a being which is becoming. It follows that the state can place obligations upon the person and as such be superior to the person only if the state is founded in or participates in the absoluteness of Being. Any absolute character on the part of the state is derived from that of the person, because the state is built on persons. Accordingly, the cooperation or the working together of persons and society is possible through the metaphysical; should this disappear everything would fall apart.

Authority in the state has the obligation to direct individuals to the common good, so that each one contributes his own share. This power of authority to bind persons together in duty is due to authority's participation in the absolutism of Being. Therefore, those who bear authority, whether in a monarchy, an aristocracy or a democracy, are capable of administering their office suitably only when they do not drown in power but bring themselves through to Being; this requires a penetrating purification of all who participate. In this administration, as Plato showed in his Republic, the most important thing is uncorrupted justice which distributes and assigns duties and rights according to objective data, without letting itself be confused through selfish interests. Only they can do such deeds who add to precise and expert knowledge a high degree of personal maturity. According to what has been said above, as this always and essentially depends upon being founded (Grunden) in the all-embracing Being, authority and justice also rise out of the metaphysical. Once again this proves to be the root of social values, just as above it was seen to be the foundation of ethical values and the source of personal life.¹

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NOTE

1. See Johannes Lotz, *Ich-Du-Wir: Fragen um den Menschen* (Frankfurt, 1968); *Die Drei-Einheit der Liebe: Eros, Philia, Agape* (Frankfurt, 1979); *Person und Freiheit: Eine philosophische Untersuchung mit theologischen Ausblicken* (Freiburg, 1979).

CHAPTER XII

METAPHYSICS AND HISTORY

T.A. ROBERTS

The aim of this paper is to discuss some philosophical problems relating to history, both in the sense of what happened in the past and, more significantly, in the sense of producing an account of what happened in the past. Discussion of these selected problems will reflect trends in philosophical thinking over the past twenty years or so in the Anglo-Saxon speaking world. The main general trend which seems to be discernable is a shift away from a predominantly empiricist approach to the problem of historical knowledge which was prevalent in the immediate postwar period--an empiricist approach well reflected in Patrick Gardiner's *The Nature of Historical Explanation* (1952). As is well established, this empiricist approach was an off-shoot of certain aspects of linguistic philosophy, if not of logical positivism, which found classical expression in A.J. Ayer's *Language, Truth and Logic* (1936). In that book Ayer castigated all metaphysical propositions as pseudo-propositions and therefore meaningless. In recent years metaphysics has been rehabilitated, and contemporary discussions of problems in the philosophy of history clearly recognize that important philosophical arguments in this area involve crucial and unavoidable metaphysical issues.

Nothing will be said in this paper about the details of historical methodology or historiography, that is to say, the methods or techniques used by historians in their task of reconstructing the past. Some philosophers believe that one of the tasks of the philosophy of history is to examine and analyze the presuppositions underlying historical methodology. This is, in my view, a mistaken approach. Historical methodology reflects the empirical practice of historians. Philosophers on the other hand discuss those peculiarly philosophical problems that arise, irrespective of the nature of historical methodology, when we reflect on the very possibility of being able to obtain knowledge of the past. Historical methodology assumes, unquestionably, that knowledge of the past is possible, and has always been possible. It seeks to analyze and systemize the methods used most effectively by historians to establish this knowledge of the past. But if philosophers examine the very possibility of knowing the past, this task is clearly logically prior to the task of formulating a historiography. It is therefore no part of the philosopher's task to worry about historical methodology: indeed the boot is on the other foot. It is for historians to pay heed to what the philosophers are about despite their scarcely disguised impatience with, if not downright contempt for, philosophical speculation. As parts of this paper will, I hope, make clear, historical methodology sometimes reflects a confused apprehension of the way things are, and this very often because the confusion stems from a failure to recognize metaphysical issues which must be resolved one way or another, if the kinks, so to speak, are to be straightened out in historical methodology.

No account is taken here of philosophical problems about time, which, since history clearly involves the past, are obviously relevant to any comprehensive reflection about history. Is time linear, continuous, unending and without beginning? If so, we will tend to represent the structure of time by a horizontal straight line, the points of that line representing the moments of time.

Any point on that line can be chosen to represent the present, so that all points to the left of it represent the past, and all to the right represent the future. Granted such a structure of time, it is tempting to think of the history as a movement or process in time, a movement of progress or decline. A rival theory of time claims that time is closed and its structure is best represented, not

by a line, but by a circle. On this view, the historical process is neither one of progress nor of decline but one of returning again and again to a point through which it has already passed. Yet a third possibility, canvassed by McTaggart, is that time is unreal. How do we decide between these rival theories of time? I mention these possibilities in order to distinguish between philosophical problems about time and philosophical problems about history, which presupposes time. My concern in this paper is exclusively, if narrowly, with philosophical problems about history.

What kind of philosophical problems about history does one have in mind. Consider the following propositions.

1. There are no 'bare' historical facts. All historical facts are an inextricable blend of fact and interpretation.
2. All history is contemporary history.
3. The Christ-event (the death and resurrection of Jesus) is the meaning of all history.

These three propositions share at least one feature in common. They are of a high order of generality. The first makes a claim about all the members of a sub-class of the class of facts i.e. about the class of historical facts. The second arises from a well known dictum of R. G. Collingwood, a distinguished historian who became an equally distinguished philosopher, about the nature of all historical methodology. And the third claims that one particular event is the key to the meaning, not of parts of history e.g. the history of western civilization, or types of history, e.g., religious history, but of all history.

Another feature these three propositions share in common is the fact that acceptance or rejection of them is not to be decided by appeal to particular states of affairs in the world. If this is true then these propositions possess something of a metaphysical flavour. That is, if we accept them, we accept them not because they are in some straightforward sense true or false, but because they encapsulate (in very abbreviated form) some insight or emphasize some feature, considered important, of the way we think we must structure reality, in order to make it intelligible.

FACTS AND INTERPRETATION

Some historians who have recently discussed historiography have made great play of the claim that there are no bare historical facts, only facts plus interpretation. They have advanced this claim to counter views advanced by J. B. Bury in his inaugural address at Cambridge in 1903 that history is a science no more, no less, and that the task of the historian is to chronicle simply and impartially what happened in the past to narrate the bare facts. Another Cambridge historian, Norman Sykes,¹ writing in 1949, challenged and rejected Bury's thesis; a thesis which implied according to Sykes that the documents on which the historian worked were impartial, and the use made of them by the historian was impartial. According to Sykes, the theory that a historian can be impartial seems to us today manifest nonsense. Impartiality is impossible since the writer of the historical document has selected what to relate about events and the historian's use of this document is based on selection and interpretation of the material and this selection presupposes a point of view. Hence neither the documents which survive from the past nor the use made of them by the contemporary historian can be impartial. Bury's ideal for the historian, presenting the facts as they happened, without the refractory element of interpretation, is impossible.

This claim that all historical facts are interpreted facts is often held up as a unique feature of historical methodology. It is also used to defend as legitimate the historian who adopts an explicitly avowed ideological, political or religious standpoint in his historical writing be it Marxist, Protestant, or that of the Whig historian. Since all historical facts are interpreted facts it is impossible to eliminate the element of interpretation which is constitutive of historical fact: and if an interpretative element seems inescapable, one interpretation seems as valid as another.

The appeal by historians discussing historical methodology to the claim that all historical facts are facts plus interpretation seems to me to be a clear example of how historians have seized upon a valid philosophical insight but without recognizing its metaphysical nature or import. Being unaware of its nature, they have distorted its importance for historical methodology in at least two ways: (a) by claiming this dictum represents something which is a unique feature of historical methodology, and (b) by using it to buttress a defence of what is in effect the adoption of a particular bias (ideological, religious or political) in historical interpretation. The valid philosophical proposition which lies hidden and unrecognized in the discussions of historical methodology to which I have alluded is the claim that all facts are interpreted facts. If this is valid, it applies to all facts, and not merely to historical facts. If it does apply to all facts, then it follows that it applies to historical facts. But if it is valid of historical facts in virtue of being valid of all facts, then it is illegitimate to use it to defend or buttress the Whig view of history or the Marxist view of history. The reason for that is very simple. When we say that all facts are interpreted facts, the sense of 'interpretation' we have in mind is very different from the sense of 'interpretation' which is used when historians debate the merits or otherwise of the Whig interpretation of history or the Marxist interpretation of history.

What is it that someone may have in mind when he or she intends that all facts are interpreted facts and why are we inclined to categorize such a claim as a philosophical claim? It is justly a claim of extremely wide generality, whose truth does not rest on particular empirical facts about the world, on how the world is. The claim implies that however the world is, it will consist of facts which are all interpreted facts. The status of the proposition is what Kant would have termed synthetic a priori--it is universal yet applies to experience. To understand its import is in effect to reject a rival metaphysical claim. A rival claim, to take an example at the very opposite metaphysical pole, is the claim that all facts are reducible ultimately to simple facts, and simple facts are descriptions of pure simple acts of awareness by the intellect of simple sense experiences. All knowledge can in principle be reduced to the awareness by the mind of simple sense impressions--patches of color and bits of sound--to cite Russell's examples in his Logical Atomism. This kind of claim stems via Hume from Locke who regarded the mind as a blank and virgin piece of wax upon which objects in the world made impressions--the mind passively receiving them. Thereafter the mind might be active, creative and spontaneous in its manipulation of these impressions, but the very basis of all knowledge is the bedrock of the passive assimilation of pure sense experiences.

In sharp contrast to this Russellian, Humean, and in part Lockean empiricist metaphysic, there is a Kantian view according to which even in the act of awareness of the most basic sense impression there is more than a passive assimilation of a sense datum. The mind is active in the assimilation, and in the transformation of what is assimilated into its own representation--something which owes its origin to sense, but equally to mind. To rephrase this in more modern language, the Kantian claim is that the description of the most simple fact--e.g., there is a red patch on that wall--is not a mere description of a simple sense awareness. Any such description presupposes an already existing conceptual scheme. Such a scheme will contain empirical

concepts e.g. 'red', but it will also presuppose non-empirical concepts--what Kant termed categories--fundamental concepts, not derived or based on sense experience as empirical concepts, are yet essential if we are to be aware of any experience whatsoever.

We have now placed the claim 'all facts are interpreted facts' in a distinctly philosophical context, implying a Kantian type metaphysic in contrast to an extreme empiricist metaphysic which asserts the existence of simple facts as acts of simple assimilation of sense awareness. It is interesting to note in passing that the historian's use of the dictum "all historical facts are interpreted facts" arguably owes much to Collingwood, whose philosophical sympathies lie distinctly with the Kantian rather than with the empiricist metaphysic.

The adoption of one metaphysic in preference to another carries with it its own implications, and this is no less true of the Kantian type metaphysic to which our historian methodologists are, probably unconsciously, committed. Considerations of space allow only a brief mention of two of these implications.

If our representations of states of affairs--of facts--are an inevitable amalgam of elements of sense and of mind, then the resulting representation cannot be an exact mirror of the states of affairs which are non-mental in the sense that whatever their ontological status, they must be differentiated from mind. On a Kantian type metaphysic, we cannot have a simple realist view of the world: our representations do not represent directly how the world is. A representation of the past is then in some sense and to some degree a reconstruction which does not exactly correspond with what happened--if we mean by that past events as apprehended by a non-human intelligence. I do not know whether historians are aware of this implication, or whether they would be at all worried by it were they aware of it.

The core of the Kantian "all facts are interpreted facts" type metaphysic is the claim that all awareness of experience--and historical experience is part of experience--presupposes a non-empirical categorial scheme by means of which we represent our experience. Now we may adopt the Kantian claim for the necessity of some categorial scheme without committing ourselves to accepting Kant's own analysis of the necessary categorial scheme. Once we adopt the Kantian--as contrasted to Kant's--position regarding the necessity of some categorial scheme, much fruitful philosophical discussion can be generated concerning the minimum content of such a categorial scheme. Clearly this is not the place to embark upon such a discussion but I wish to make one observation about this notion of the minimum requirements for a necessary conceptual scheme which is of relevance to historical enquiry. The observation is this. Whatever conception we finally entertain of the minimum categorial requirements, I think it is possible to state that such a minimum set of categorial conditions will rule out that it will be possible to give an intelligible account of being aware of an experience, description of which predicates opposite or contrary predicates of the same thing, e.g., it will rule out the notion that propositions of the form 'p and ~ p' are true. Now some anthropologists have appealed to the notion of a pre-logical mind which some primitive peoples allegedly possess, and their conception of the pre-logical mind implies the possibility of asserting contradictory propositions, in at least the sense of predicating contrary predicates of the same thing at the same time. Some historical theologians in interpreting what they consider the primitive stages of early Hebrew history have borrowed this notion of a pre-logical mind as a valid explanatory tool. On the Kantian metaphysic, the notion of a pre-logical mind is incoherent. If it exists, we could not make sense of it: indeed we could not establish that it exists.

This is a good example of how a sound knowledge of conceptual issues is essential to spot the kinks in historical methodology. The mistaken appeal to the notion of a pre-logical mind as a

valid explanatory concept in historical explanation is after all only of limited application in historical writing. I now turn to an area where awareness of conceptual puzzles will uncover deeper, more prevalent and therefore more difficult to eradicate, kinks in contemporary notions of historical methodology. In uncovering these kinks, I will be seriously questioning the theoretical possibility of historical knowledge.

HISTORY AND CONTEMPORARY HISTORY

As will be readily granted, the main concern of the historian is the reconstruction of past human actions. Now as R.G. Collingwood correctly observed in his *Idea of History* (1946), human actions possess a dual nature: they possess external and internal features. By external we mean the observable physical feature of the action--the movement of the arm. By internal we mean the beliefs, the desires, the intentions, and the motives which necessarily accompany an action, for without these mental features an action is not strictly speaking an action. An action is voluntary, or willed; and if willed, someone intends to achieve something by it, for which he may have his motives. To allow for intentions and motives, we must necessarily have reference to a person's beliefs and desires: otherwise a physical movement of the arm without intention is not an action. It is certainly an event, a change in the state of affairs in the world, but a random or chance happening in the world. To sum up, an action possesses a physical aspect and a thought aspect. And as Collingwood correctly implies, we do not correctly understand an action unless, in addition to achieving an awareness of the physical aspect, we also understand the thought aspect; and of these two, the latter is a more difficult achievement. So far as past human actions are concerned, the historian must re-think the thoughts of the agents who acted in the past. Since this rethinking occurs in the present, Collingwood summarized his metaphysical insight in the highly original dictum: all history is contemporary history.

Original as his dictum undoubtedly is, Collingwood is not to be accepted uncritically. By confining the subject matter of history to the thoughts, beliefs, desires and decisions of agents in the past, Collingwood is being unduly restrictive, for the historian must take into account natural influences on a person's environment--economic, geographical and cultural factors. Nor, interpreted strictly, can Collingwood's dictum overcome the difficulty posed by the notion of identity--by what criteria do we know that our rethinking of past thoughts correspond exactly to those thoughts. Nevertheless, despite these and other objections, Collingwood places the emphasis where it should belong--namely that historians are primarily interested in past human actions, and the thought side of these actions is by far the most difficult to reconstruct as it is the most important.

It is in connection with recovering and explaining the thought side of past human actions that the philosopher discerns theoretical problems of some considerable difficulty. I propose to review three of these briefly.

Can the Motives of Past Actions be Established?

The first problem raises the question what exactly is involved in interpreting past actions. Straightforwardly this involves deciding what was the meaning of the action, and what its explanation. Notice that in these problems I am concerned with the action of individuals. Group actions pose much the same problems, only more acutely.

Working from texts or traces of the past, the historian must establish what the agent did. This is the overt act, the observable side of the action. He or she then must establish what the agent meant to do by this behavior--i.e., what was his or her intention. In explaining the action, the historian asks whether it was apt in the circumstances--in the historical context in which the agent found himself. Then we can ask what was the agent's motive in doing what he did. This is to offer an explanation of the action.

The point I wish to emphasize here is that there is disagreement amongst philosophers as to whether historians should be or indeed can be concerned to discover the motives for human actions. Some philosophers of history argue that discovering a man's intentions, and asking whether these intentions were appropriate in terms of the historical circumstances is as far as the historian can go. It is no part of the historian's task to tackle, still less to prejudge, the question of motive. When we have penetrated an agent's intention, we cannot and need not do more. Once we have discovered that an agent had sufficient reason to do what he or she did, we can penetrate no further. We have done enough. The major assumption underlying this view is that men act rationally. If men do not act rationally, there is no possibility of explaining their actions. A rational agent, in recognizing good reasons for acting, makes those reasons his or her own. The historian reconstructs his or her actions and discovers he or she had good reason for acting as he or she did. We need not be concerned with motives, for an agent may act from different motives, whereas an action is explained when we can cite sufficient reason to account for it.

The opposite contention is to claim that citation of motive is important for a full explanation of an agent's action. Just because two possible motives could yield the same action in the context, it does not follow that explanation can proceed without deciding possible motives. To know why a man acted as he did involves knowing how he could have acted in other circumstances, in other conditions, for instance, those where the two motives would have moved him along different paths.

This question as to whether historical explanation should take account of motives of human action is a fundamental theoretical issue, a philosophical issue involving our analysis of what constitutes a human action. Until this issue is resolved, the standard model of historical methodology used by historians--namely that they attempt to discover the meaning of actions and their motives--is out on a limb.

If it is decided to include motives as part of any full or reasonably comprehensive explanation of human actions, it is important to recognize that deciding in any particular case what was the motive normally requires far more concrete information or evidence than the historian usually has at his disposal. This points to a fundamental weakness in historical methodology. To decide questions of motive, we need to investigate fully the agent's situation, his or her state of knowledge, the nature of the evidence available to him or her, the rules and conventions prevailing in his or her time with regard to social action, how he or she would have acted in quite different circumstances. Ascribing motives for an action involves knowing (or believing) that the agent knew (or believed) what the meaning of his or her action was, and the way in which he or she thought the reasons for his/her action justified his/her action. It is only necessary to set out these requirements for one to realize that, so far as most past human actions are concerned, the historian lacks the abundance of evidence which would enable him to give a reasonably certain and reasonably full answer to such questions.

Historical Understanding

I turn now to another philosophical problem posed by reflection on historical methodology. An agent does something--performs a piece of behavior--and in order to understand his action, which is essentially more than just the observable behavior, it is necessary to ask what did he mean by doing what he did. What was his intention? The point here is that what an agent intends by a piece of behavior is governed by rules or conventions in his or her society, or by the rules and conventions of a group or sect to which he or she belongs.

Consider the following simple, biblical example: "And John baptized Jesus in the river Jordan." The actual piece of behavior performed by John is not stated. We infer that he dipped Jesus bodily into the waters of the river. We infer this from our knowledge of Jewish baptism, of Jewish practices of ritual washing. The writer in using the concept of baptism presupposes that we understand the meaning of what was done, the dipping in water for the washing away of sins. This is what is meant by saying that John, in doing what he did, obeyed the rules or conventions of Jewish baptism, although in obeying them he also changed them slightly, for there is reason to believe that there was something distinctive about John's baptism. Had John merely dipped Jesus in the river, such behavior would not in itself count either as Jewish baptism or John's baptism. Had he dipped Jesus into the water accidentally or by chance, that would not count as baptism, any more than the sprinkling of water on an infant's head counts as Christian baptism. John's behavior takes its meaning from a certain context which gives the action--which includes the behavior (what was observable) but is more than the behavior--a specific religious meaning.

Let us now ask the question--did John believe that the dipping in water literally washed away sins? If so, how do we conceive of it? Do we understand it in terms of causal efficacy? Or did John think of it as a symbolic washing away of sins? One thing is clear: until we answer this question, we do not fully understand how John's behavior was meant to have meaning. And can we ever fully understand John's action if we examine his behavior from the standpoint of a scientific culture which believes that dipping in water could, by itself, not wash away sins, and that to think so is to be governed by some magical thought form, which is unreal. Could a culture which rejects the notion of sin, or did not possess a notion of sin, ever understand the meaning of what John did?

The problem posed here is the problem of understanding cross-culturally the rules and conventions which give meaning and point to men's actions. So far as I am aware the problem is first posed by F. H. Bradley in his *Presuppositions of Critical History* (1874). Bradley in that book is perplexed by the question, how can a 19th century citizen of western civilization understand a society such as that of 1st century Palestine which apparently believed in the efficacy of devils and miracles. Interestingly enough Bradley was led to ponder this question by reflecting on a historical work on the early Christian community which had been published by a distinguished historical theologian, F.C. Bauer's *Epochs of Church History*. Bradley's concern has been revived in our own day, but from a Wittgensteinian standpoint, by Professor Peter Winch.² There is an important difference between them. Whereas Bradley raises the specifically historical problem of understanding a past culture from the standpoint of another quite different culture, Winch raises the problem of understanding cross-culturally: how can the contemporary westerner enter into the thought world of primitive African tribes? Whereas Bradley addressed his discussion to historian, Winch addresses himself to anthropologists. Philosophically, the issue appears to be the same, in principle.

I do not propose, nor does space allow, to follow the ramifications of the Winchian or Bradleian discussions. I wish only to draw attention to the following observation. The Winch discussion gives rise to a strong and a weak thesis. The strong thesis is that it is impossible for us

to understand the meaning of men's actions cross-culturally, that is on the basis of anthropological evidence. It is impossible to get under the skin of a primitive society and understand the point or meaning of what the primitive man does. The weak thesis allows that this is possible though extremely difficult in practice.

If we apply the strong thesis to history, it rules out the possibility of understanding across the centuries, just as much as it rules out understanding cross-culturally. The weak thesis, although it admits the viability of anthropological studies, is of little comfort to the historian. For whereas the weak thesis allows that an anthropologist can, by long sojourn in a primitive society and by constant questioning of his or her hosts, eventually get under the skin of that society, the historian is by comparison much less favorably placed. He or she lacks the wealth of vital information which the anthropologist can gain, and therefore the historian is not in practice in a position to be able to understand a past culture very different from his or her own.

Before leaving the topic of the role of motives and intentions in understanding human actions, past or otherwise, it should be emphasized that we have taken no account of possible unconscious motives or intentions--motives and intentions in so far as a man is aware, or thinks he is aware, of them have alone been taken into account. There exists the phenomena of unconscious motivation. For example a person is hypnotised and commanded under hypnotism to pass over the ace of spades as she goes through the pack of cards. She does as she was bidden. Although unaware that in so acting she obeyed the hypnotist's command she is nevertheless aware which card is the ace of spades, for she does pull it out of the pack. How are we to describe what goes on here in terms of motives and intentions?

But there is an even more difficult problem. If individuals can manifestly act from unconscious motives, is it possible that groups or societies can be in the grip of unconscious forces? How would we recognize such unconscious forces, and behavior which is determined by them? Questions about possible unconscious motivation pose very difficult problems, but so far as one can make out, historians do not seem to give them much consideration when they construct their historical accounts of the past.

Finally I wish to mention briefly one other philosophical problem which must be resolved before a satisfactory historiography can be developed. As we mentioned earlier, an agent's actions are explained by locating his or her actions in a context and showing how he or she had good reasons for acting as he or she did. His action was an appropriate--or one of several possible appropriate--response to a particular set of circumstances.

The problem which arises here, which has been extensively discussed in recent philosophy is quite simply--can reasons for action be causes? Some prominent philosophers e.g., Melden, Hampshire, Kenny, Winch, Peters³ have argued that reasons cannot be causes.

Allied to this question is the problem whether it is possible to formulate scientific type laws about human actions. Impressed by the success of the natural sciences, philosophers such as Comte (the father of sociology) believed it was possible in principle to fashion causal laws about human actions, and to base predictions about future human actions on these laws. This enterprise has hardly been very successful, and some philosophers argue that the attempt is impossible in principle. They concede that we can certainly appeal to known or possible scientific laws to explain behavior in the behavioral parts of actions. But they argue that the intentional component of actions cannot be the subject of law in the scientific sense, and therefore human actions will forever remain beyond the scope of the scientific type of law. Giving reasons for actions is explaining them and this is a form of causal explanation. Often the explanation is a singular causal statement but singular causal statements do not necessarily and always imply general

causal laws. Here is an example of a radical theoretical disagreement amongst philosophers which ideally needs to be resolved before a satisfactory historical methodology can be constructed.

The other philosophical problem is not unconnected with the alleged impossibility of subsuming intentions under scientific law. It arises from Quine's radical translation thesis.⁴ So far as I understand it, the application of Quine's thesis to the area under discussion is something like this. If we allow that what an action means to a man is what he intends by it, Quine contends that owing to certain logical difficulties connected with the notion of exact synonymy, we can never be certain that we understand what a man's intention is.

Consider the example already cited: "And John baptized Jesus in the Jordan." The meaning of what John did is closely related to what he intended to do. And what he intended to do was closely governed by John's understanding of the concept of 'baptism'. But since this concept is, in a sense, a theoretical concept one which does not possess an exact or precise extensional reference, then what John previously understood by 'baptism' may be one of several possibilities. But we can never be sure we know which one of these John had in mind: indeed the meaning of baptism for him cannot be translated exactly in terms of my (i.e. the interpreter's) understanding of baptism. Clearly, to the extent that Quine's thesis is correct, to that extent it undermines at a stroke the theoretical possibility of recovering another's intention, and hence of recovering the intentions of past actions.

The Christ Event and the Meaning of All History

This discussion would be incomplete if no reference was made to the third of the propositions instanced at the outset, namely: The Christ event is the meaning of all history.

The first comment is to draw attention to the ambiguity of the expression, "the meaning of all history". This can refer to history in the sense of "all that happened," i.e., what is known by an omniscient being such as God. In that sense, the philosophical difficulties of constructing satisfactory historical accounts, to which most of this paper has been devoted, would be irrelevant to the validity of the claim that the Christ event is the meaning of all history. On the other hand, if the proposition refers to history as recorded or reconstructed by historians, i.e. to accounts of the past, then the philosophical problems to which attention has been drawn in this paper are indeed relevant. For if consideration of these philosophical problems serves to cast doubt about the very possibility of our being able to reconstruct the past on the basis of evidence or traces bequeathed by the past, then this is directly relevant to any claim that presupposes we can successfully know the past. That is the claim that X is the meaning of all recorded history logically presupposes that we can reconstruct recorded history before we can claim that X is its meaning.

My second comment concerns the question of how one is to understand the expression "the Christ event is the meaning of. . . ." Now it seems that at least one theological interpretation of this expression which is advanced does invoke the concept of intention, and may therefore generate philosophical difficulties of the kind discussed in this paper.

The theological interpretation one has in mind is Bultmann's.⁵ For him, correctly interpreting the Christ event is connected with true understanding of the notion of the self's authentic existence. A correct understanding of the authentic existence of the self is the meaning of all history. That is, we fail to understand history if we fail to understand what is the self's authentic existence. Bultmann connects the notion of authentic existence with Christ's death on the cross in

this way. Christ accepted the humiliation of the Cross in perfect obedience to God. Authentic existence of the self can only be realised in perfect obedience to God. The supreme perfect example of this obedience--the death of Jesus on the cross--is the meaning of all history.

Apart from any other problems generated by Bultmann's version, it does presuppose that qua historical event, as historical action, we can recover the intention of Jesus in accepting the death of the cross. It must at least be possible to establish that it was a historical fact that Jesus intended to be perfectly obedient to God. This discussion will I hope serve to register a word of caution. Apart from the practical difficulties arising from the nature of the surviving evidence, or lack of it, the problem of recovering Jesus' intention poses severe philosophical problems.

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NOTES

1. Norman Sykes, "Some Recent Conceptions of Historography and Their Significance for Christian Apologetic." *Journal of Theological Studies*, Jan-Apr, 1949, fn. 24-37.

2. Peter Winch, "Understanding a Primitive Society," *American Philosophical Quarterly*, I (1964); reprinted in D.Z. Phillips, ed., *Religion and Understanding* (Oxford: Blackwell, 1967), pp. 9-42.

3. A.I. Melden, *Free Action*, London, 1961. Stuart Hampshire, *Thought and Action*, London, 1959. A. Kenny, *Action, Emotion and Will*, London, 1963. P. Winch, *The Idea of a Social Science*, London, 1958. R.S. Peters, *The Concept of Motivation*, London, 1958. Donald Davidson, "Actions, Reasons and Causes" reprinted in Davidson, *Essays on Actions and Events*, OUP, 1980.

4. W.V.O. Quine, "Two Dogmas of Empiricism" in *From a Logical Point of View* (Cambridge, Mass., 1953).

5. R. Bultmann, *History and Eschatology*, Edinburgh University Press, 1957.