INSIGHT

CHAPTER XIV

THE METHOD OF METAPHYSICS
~~THE DIALECTIC OF PHILOSOPHY~~

1. The Underlying Problem.
~~Ground of the Dialectic~~

It is not difficult to set antitheses against the conclusions of the preceding three chapters. Against the objectivity that is based on intelligent inquiry and critical reflection, there stands the unquestioning orientation of extroverted biological consciousness and its uncritical survival not only in dramatic and practical living but also in much of philosophic thought. Against the concrete universe of being, of all that can be intelligently grasped and reasonably affirmed, there stands in a prior completeness the world of sense, in which the "real" and the "apparent" are subdivisions within a vitally anticipated "already out there now". Against the self-affirmation of a consciousness that at once is empirical, intellectual, and rational, there stands the native bewilderment of the existential subject, revolted by mere animality, unsure of his way through the maze of philosophies, trying to live without a known purpose, suffering despite an unmotivated will, threatened with inevitable death and, before death, with disease and even insanity.

The peculiarity of these antitheses is not to be overlooked. They are not mere conflicting propositions. They are not pure logical alternatives, of which one is simply true and the other is utterly false. But in each case both the thesis and the antithesis have their ground in the concrete unity-in-tension that is man. For human consciousness is polymorphic. The pattern in which it flows may be biological, aesthetic, artistic, dramatic, practical, intellectual, or mystical. These patterns alternate: they blend or mix: they can interfere, conflict, lose their way, break down. The intellectual pattern of experience is supposed and expressed by our account of self-affirmation, of being, and of objectivity. But no man is born in that pattern; no one reaches it easily: no one remains in it permanently; and when some other pattern is dominant, then the self of our self-affirmation seems quite different from one's actual self, the universe of being seems as unreal as Plato's noetic heaven, and objectivity spontaneously becomes a matter of meeting persons and dealing with things that are "really out there".

Not merely are the antitheses based on the polymorphic fact of a protean consciousness, but initially there is the bewildering fact without the clear antitheses. To reach that sharp formulation, it was necessary for us to begin from insight, to study its functioning in mathematics, in empirical science, and in common sense, to turn to reflective understanding and judgment, and throughout to avoid involvement in obviously pressing problems on the nature of

knowledge, of reality, and of the relation between them. Even in unfolding the process that ends in self-affirmation, we were unprepared to say whether affirming the self was knowing the self. Affirming the self became knowing the self inasmuch as knowing being was seen to be affirming it; and knowing being became objective knowing through a grasp of the nature of experiential, normative, absolute, and the consequent principal objectivity.

If a clear and sharp formulation of the antitheses occurs only at the end of a long and difficult inquiry, still that inquiry today is prepared and supported in a manner unattainable in earlier centuries. The development of mathematics, the maturity of some branches of empirical science, the investigations of depth psychology, the interest in historical theory, the epistemological problems raised by Descartes, by Hume, and by Kant, the concentration of modern philosophy upon cognitional analysis, all serve to facilitate and to illumine an investigation of the mind of man. But if it is possible for later ages to reap the harvest of earlier sowing, still before that sowing and during it, there was no harvest to be reaped.

It is not too surprising, then, that the philosophies have been many, contradictory, and disparate. For surprise merely expresses the mistaken assumption that the task of philosophy lies in the observation or utterance of some simple entity by some simple mind. In fact, the mind is polymorphic; it has to master its own manifold before it can determine what utterance is, or what is uttered, or what is the relation between the two; and when it does so, it finds

its own complexity at the root of antithetical solutions. From the welter of conflicting philosophic definitions, and from the Babel of endless philosophic arguments, it has been concluded that the object of philosophy either does not exist or cannot be attained. But this conclusion disregards two facts. On the one hand, the philosophers have been men of exceptional acumen and profundity. On the other hand, the many, contradictory, disparate philosophies can all be contributions to the clarification of some basic but polymorphic fact; because the fact is basic, its implications range over the universe; but because it is polymorphic, its alternative forms ground diverse sets of implications.

Such is the view to be developed in the present account of the method ~~dialectic~~ of philosophy. As in our remarks on mathematics, on empirical science, and on common sense, so also here, the one object of our inquiry is the nature and fact of insight. Philosophers and philosophies engage our attention inasmuch as they are instances and products of inquiring intelligence and reflecting reasonableness. It is from this viewpoint that there emerges a unity not only of origin but also of goal in their activities; and this twofold unity is the ground for finding in any given philosophy a significance that can extend beyond the philosopher's horizon and, even in a manner he did not expect, pertain to the permanent development of the human mind.

The possibility of contradictory contributions to a single goal is, in its main lines, already familiar to the reader. Besides the direct insights that grasp the systematic, there are also the inverse insights that deal with

the non-systematic. As both types of insight are needed by the mathematician, the empirical scientist, the depth psychologist, and the theorist of history, so also both types are needed by the philosopher. Moreover, inasmuch as the philosopher employs both direct and inverse insights in his survey and estimate of the philosophic process, his mind and grasp become the single goal in which contradictory contributions attain their complex unity. Finally, the heuristic structure of that unity admits determination through the principle that positions invite development and counterpositions invite reversal. This principle we now must explain.

First, in any philosophy, it is possible to distinguish between its cognitional theory and, on the other hand, its pronouncements on metaphysical, ethical, and theological issues. Let us name the cognitional theory the basis, and the other pronouncements the expansion.

Secondly, there are two aspects to the basis. On the one hand, cognitional theory is determined by an appeal to the data of consciousness and to the historical development of human knowledge. On the other hand, the formulation of cognitional theory cannot be complete unless some stand is taken on basic issues in philosophy.

Thirdly, the inevitable philosophic component, immanent in the formulation of cognitional theory, will be either a basic position or else a basic counterposition.

It will be a basic position, 1) if the real is the concrete universe of being and not a subdivision of the "already out there now"; 2) if the subject becomes known

when it affirms itself intelligently and reasonably and so is not known yet in any prior "existential" state; or 3) if objectivity is conceived as a consequence of intelligent inquiry and critical reflection, and not as a property of vital anticipation, extroversion, and satisfaction.

On the other hand, it will be a basic counter-position, if it contradicts one or more of the basic positions.

Fourthly, any philosophic pronouncement on any epistemological, metaphysical, ethical, or theological issue will be named a position if it is coherent with the basic positions on the real, on knowing, and on objectivity; and it will be named a counter-position if it is coherent with one or more of the basic counter-positions.

Fifthly, all counter-positions invite reversal. For any lack of coherence prompts the intelligent and reasonable inquirer to introduce coherence. But counter-positions, though coherent with one another, though the insertion of their symbolic equivalents into an electronic computer would not lead to a break-down, none the less are incoherent with the activities of grasping them intelligently and affirming them reasonably. For these activities contain the basic positions; and the basic positions are incoherent with any counter-position. One can grasp and accept, propose and defend a counter-position; but that activity commits one to grasping and accepting one's grasping and accepting; and that commitment involves a grasp and acceptance of the basic positions. The only coherent way to maintain a counter-position is that of the animal; for animals not only do not speak but

also do not offer excuses for their silence.

Sixthly, all positions invite development. For they are coherent not only with one another but also with the activities of inquiring intelligence and reflective reasonableness; because these activities are coherent with existing attainment, their exercise is possible; because existing attainment is incomplete, further development is invited.

A simple example will clarify the meaning of the foregoing abstract statements. Let us say that Cartesian dualism contains both a basic position and a basic counter-position. The basic position is the "cogito, ergo sum" and, as Descartes did not endow it with the clarity and precision that are to be desired, its further development is invited by such questions as, What is the self? What is thinking? What is being? What are the relations between them? On the other hand, the basic counter-position is the affirmation of the res extensa; it is real as a subdivision of the "already out there now"; its objectivity is a matter of extroversion; knowing it is not a matter of inquiry and reflection. This counter-position invites reversal, not merely in virtue of its conjunction with the other component in Cartesian thought, but even when posited by itself in anyone's thought. Thus, Hobbes overcame Cartesian dualism by granting reality to the res cogitans only if it were another instance of the res extensa, another instance of matter in motion. Hume overcame Hobbes by reducing all instances of the "already out there now real" to manifolds of impressions linked by mere habits and beliefs. The intelligence and

reasonableness of Hume's criticizing were obviously quite different from the knowledge he so successfully criticized. Might one not identify knowledge with the criticizing activity rather than the criticized materials? If so, Cartesian dualism is eliminated by another route. One is back at the thinking subject and, at the term of this reversal, one's philosophy is enriched not only by a stronger affirmation of the basic position but also by an explicit negation of the basic counter-position.

In the light of the dialectic, then, the historical series of philosophies would be regarded as a sequence of contributions to a single but complex goal. Significant discoveries, because they are not the prerogative of completely successful philosophers, are expressed either as positions or as counter-positions. But positions invite development, and so the sequence of discoveries expressed as positions should form a unified, cumulative structure that can be enriched by adding the discoveries initially expressed as counter-positions. On the other hand, since counter-positions invite reversal, a free unfolding of human thought should tend to separate the discovery from its author's bias in the measure that its presuppositions are examined and its implications tested.

However, the dialectic itself has a notable presupposition, for it supposes that cognitional theory exercises a fundamental influence in metaphysics, in ethics, and in theological pronouncements. This presupposition merits exploration. In the present chapter, then, an attempt will be made to define metaphysics, to state its method, and to

clarify the method by contrasting it with other methods. In subsequent chapters, the method will be articulated by an outline of metaphysics, a sketch of ethics, and a presentation of transcendent knowledge.

2. A Definition of Metaphysics

Just as the notion of being underlies and penetrates and goes beyond all other notions, so also metaphysics is the department of human knowledge that underlies, penetrates, transforms, and unifies all other departments.

It underlies all other departments, for its principles are neither terms nor propositions, neither concepts nor judgments, but the detached and disinterested drive of the pure desire to know and its unfolding in the empirical, intellectual, and rational consciousness of the self-affirming subject. From the unfolding of that drive proceed all questions, all insights, all formulations, all reflections, all judgments; and so metaphysics underlies logic and mathematics, the various sciences and the myriad instances of common sense.

It penetrates all other departments. For other departments are constituted by the same principle as metaphysics. They are particular departments inasmuch as they are restricted to some particular viewpoint and field. Yet despite the restrictions that make them particular, all departments spring from a common source and seek a common compatibility and coherence, and in both these respects, they are penetrated by metaphysics.

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*It transforms all other departments. For the consciousness of man is polymorphic and it ever risks formulating its discoveries not as positions but as counter-positions. Common sense is subject to a dramatic bias, an egoistic bias, a group bias, and a general bias that disregards the complex theoretical issues in which it becomes involved, and their long term consequences from which it blindly suffers. Scientists are not just scientists but also men of common sense; they share its bias in so far as their specialty does not correct it; and in so far as their specialty runs counter to the bias of common sense, they find themselves divided and at a loss for a coherent view of the world. Metaphysics springs from the pure desire to know; it is free from the restrictions of particular viewpoints; it distinguishes positions from counter-positions in the whole of knowledge; it is a transforming principle that urges positions to fuller development, and by reversing counter-positions, liberates discoveries from the shackles in which, at first, they were formulated.

It unifies all other departments. For other departments meet particular ranges of questions, but it is the original, total question and it moves to the total answer by transforming and putting together all other answers. Metaphysics, then, is the whole in knowledge but not the whole of knowledge. A whole is not without its parts, nor independent of them, nor identical with them. So it is that, while the principles of metaphysics are prior to all other knowledge, still the attainment of metaphysics is the keystone that rests upon the other parts and presses them together in the unity of a whole.

From the foregoing account, it would appear that metaphysics can exist in three stages or forms. In its first stage, it is latent. Empirical, intellectual, and rational consciousness are immanent and operative in all human knowing; from them spring both the various departments of knowledge and the attempts that are made to reverse counter-positions and to attain coherence and unity; but the common source of all knowledge is not grasped with sufficient clarity and precision; the dialectical principle of transformation is not a developed technique; and efforts at unification are haphazard and spasmodic. In its second stage, metaphysics is problematic. The need of a systematic effort for unification is felt; studies of the nature of knowledge abound; but these very studies are involved in the disarray of the positions and counter-positions that result from the polymorphic consciousness of man. In its third stage, metaphysics is explicit. Latent metaphysics, which always is operative, succeeds in conceiving itself, in working out its implications and techniques, and in affirming the conception, the implications, and the techniques.

What is this explicit metaphysics? It will simplify matters enormously if, in the present chapter, we prescind from the complicated and disputed question of the possibility of man's knowing what lies beyond the limits of human experience. Accordingly, we introduce the notion of proportionate being. In its full sweep, being is whatever is to be known by intelligent grasp and reasonable affirmation. But being that is proportionate to human knowing not only is to be understood and affirmed but also is to be experienced.

So proportionate being may be defined as whatever is to be known by human experience, intelligent grasp, and reasonable affirmation.

Now let us say that explicit metaphysics is the conception, affirmation, and implementation of the integral heuristic structure of proportionate being. The meaning and implications of this statement have now to be explored.

First, what is meant by an integral, heuristic structure? To begin by assembling the elements of the answer, conceptual contents may be primitive or derived; the derived are defined by appealing to the primitive; the primitive are fixed inasmuch as terms and relations proceed from a single understanding with the relations settled by the terms and the terms settled by the relations. However, prior to the understanding that issues in answers, there are the questions that anticipate answers: and as has been seen, such anticipation may be employed systematically in the determination of answers that as yet are unknown: for while the content of a future cognitional act is unknown, the general characteristics of the act itself not only can be known but also can supply a premise that leads to the act. A heuristic notion, then, is the notion of an unknown content and it is determined by anticipating the type of act through which the unknown would become known. A heuristic structure is an ordered set of heuristic notions. Finally, an integral heuristic structure is the ordered set of all heuristic notions.

In illustration, one may point to the definition of proportionate being. It is whatever is to be known by human experience, intelligent grasp, and reasonable

affirmation. The definition does not assign the content of any experience, of any understanding, of any affirmation. Yet it does assign an ordered set of types of acts, and it implies that every proportionate being is to be known through such an ordered set. Accordingly, the definition is an instance of a heuristic structure; but it is not an instance of an integral heuristic structure, for it does not exhaust the resources of the human mind in anticipating what it is to know.

Secondly, if the integral heuristic structure of proportionate being were conceived, affirmed, and implemented, then latent metaphysics would become explicit. For latent metaphysics is the dynamic unity of empirical, intellectual, and rational consciousness as underlying, penetrating, transforming, and unifying the other departments of knowledge. But an integral heuristic structure of proportionate being would perform these offices in an explicit manner. As heuristic, it would underlie other knowledge. As the questions, which other knowledge answers, it would penetrate other fields. As dialectical, it would transform these answers. As integral, it would contain in itself the order that binds other departments into a single intelligible whole.

Thirdly, such an explicit metaphysics would be progressive. For heuristic notions and structures are not discovered by some Platonic recall of a prior state of contemplative bliss. They result from the resourcefulness of human intelligence in operation. They are to be known only by an analysis of operations that have become familiar and

are submitted to examination. Just as the other departments of knowledge advance by discovering new methods, so metaphysics advances by adding these discoveries to its account of the integral heuristic structure of proportionate being.

Fourthly, such an explicit metaphysics would be nuanced. It would be a whole of many parts, and different parts would possess varying degrees of clarity and precision, of evidence and inevitability. It follows that not all parts could be affirmed with the same confidence, that some could be regarded as certain, others as highly probable, others as recommended by the lack of alternatives, others as doubtful and in need of further confirmation.

Fifthly, such a metaphysics would be factual. Proportionate being is not the merely possible nor need it be absolutely necessary. It is what in fact is, and the science that views it as a whole can be content to ascertain what in fact is true. Moreover, the various empirical sciences and the myriad instances of common sense aim at no more than knowing what in fact is so; but metaphysics is their unification; as a principle, it precedes them; but as an attainment, it follows upon them, emerges from them, depends upon them; and so, like them, it too will be factual.

Sixthly, the dependence of such a metaphysics upon the sciences and upon common sense would be the dependence, neither of a conclusion on premisses nor of an effect upon its cause, but of a generating, transforming, and unifying principle upon the materials that it generates, transforms, and unifies. Metaphysics does not undertake either to discover or to teach science; it does not undertake either

to develop or to impart to common sense; it does not pretend to know the universe of proportionate being independently of science and common sense; but it can and does take over the results of such distinct efforts, it works them into coherence by reversing their counter-positions, and it knits them into a unity by discerning in them the concrete prolongations of the integral heuristic structure which it itself is.

Seventhly, such a metaphysics, once it had surmounted its initial difficulties, would be stable. It would admit incidental modifications and improvements, but it could not undergo the revolutionary changes to which the empirical sciences are subject. For a science is open to revolutionary change inasmuch as it is possible to reach a higher viewpoint and consequently to alter the content of its primitive terms and relations. But it is possible to reach a higher viewpoint only within the framework of inquiring and critical intelligence; there is not, in human knowledge, any possible higher viewpoint that goes beyond that framework itself, and replaces intelligent inquiry and critical reflection by some surrogate; and the viewpoint of metaphysics is constituted by nothing less than inquiring intelligence and critical reflection. Moreover, a higher viewpoint can alter the content of primitive terms and relations only if that content is some determinate object of thought or affirmation. The Aristotelian, the Galilean, the Newtonian, and the Einsteinian accounts of the free fall of heavy bodies are all open to revision, for all are determinate contents. On the other hand, a merely heuristic account is not open to revision. One cannot revise the heuristic

notion that the nature of a free fall is what is to be known when the free fall is understood correctly; for it is that heuristic notion that is both antecedent to each determinate account and, as well, subsequent to each and the principle of the revision of each. Accordingly, since metaphysics is the integral heuristic structure of proportionate being, since it is a structure that is coincident with inquiring intelligence and critical reflection, metaphysics is not open to revolutionary change.

Eighthly, metaphysics primarily regards being as explained, but secondarily it includes being as described. Primarily, it regards being as explained, for it is a heuristic structure, and a heuristic structure looks to what is to be known when one understands. Secondarily, it includes being as described. For explanation is of things as related to one another; description is of things as related to us; and so, since we are things, the descriptive relations must be identical with some of the explanatory relations.

It is to be noted that the inclusion of descriptive relations in metaphysics is implicit, general, mediated, and intellectual. It is implicit, for explicitly metaphysics regards things as explained. It is general, for metaphysics is just a heuristic structure and so only in the most general fashion can it determine which explanatory relations are identical with descriptive relations. It is mediated, inasmuch as metaphysics unifies the sciences and common sense and through them it can determine more precisely which explanatory relations also are descriptive. Finally, the inclusion is intellectual, for it occurs on

the level of intelligence and judgment and not on the level of sense. Just as thinking of the thermodynamic equations will not make anyone feel warmer or cooler, so the metaphysics of heat will be incapable of producing the experience of heat as felt. Similarly, no metaphysics, even if it regards mathematical science as superficial and undertakes to uphold the distinctive reality of quality, will be able to impart to a blind man the experience of color as seen or to a deaf man the experience of sound as heard.

Incidentally, once this last point is grasped, it would seem that metaphysical attempts to uphold the distinctive reality of sensible quality have nothing to uphold. For if metaphysics cannot reproduce the sensed as sensed, it can uphold sensible quality only by assigning some corresponding intelligibility. But mathematical science already offers a corresponding intelligibility and, though the materials of mathematical intelligibility are quantitative or, more accurately, ordinable, mathematical intelligibility is not itself quantitative. The difference between a trigonometric and an exponential function is not a difference in size; it is a difference in intelligible law governing relations between continuously ordinable elements.

A corollary of wider interest regards the ten categories commonly ascribed to Aristotle. They are descriptive. A naturalist will assign the genus, species, and instance (substance) of an animal, its size and weight (quantity), its color, shape, abilities, propensities (quality), its similarities to other animals and its differences from them (relation), its performance and susceptibilities

(action and passion), its habitat and seasonal changes (place and time), its mode of motion and rest (posture), and its possession of such items as claws, talons, hooves, fur, feathers, horns (habit). But metaphysics, as it is being conceived, is a heuristic structure that regards being as explained and only implicitly, generally, mediately, and intellectually includes being as described. It follows that Aristotle's ten categories, though they regard proportionate being, none the less do not pertain to the constitutive structure of metaphysics.

Perhaps enough has been said to clarify what we mean by metaphysics. The detached and disinterested desire to know and its unfolding in inquiry and reflection not only constitute a notion of being but also impose a normative structure upon man's cognitional acts. Such a structure provides the relations by which unknown contents of the acts can be defined heuristically. This heuristic structure is immanent and operative in all human knowing, but initially it is latent and the polymorphism of human consciousness makes it problematic as well. None the less, it can be conceived, affirmed, and implemented, and from that implementation there follow a transformation and an integration of the sciences and of the myriad instances of common sense. But knowing is knowing being. So the integral heuristic structure of proportionate being, as determined by the sciences and common sense, is knowledge of the organizing structure of proportionate being. As has been said, such a metaphysics is progressive, nuanced, factual,

formally dependent on cognitional theory and materially dependent on the sciences and on common sense, stable, and in its outlook, explanatory.

There remains the clarification that results from a discussion of method, and to this we now turn our attention.

3. Method in Metaphysics

A method is a set of directives that serve to guide a process towards a result. The result, at which we are aiming, is the explicit metaphysics outlined in the previous section. It would consist in a symbolic indication of the total range of possible experience, in a set of acts of insight that unify such experience, and in a grasp of the virtually unconditioned issuing in a reasonable affirmation of the unified view.

This result can exist only in the empirical, intellectual, and rational consciousness of the self-affirming subject. Metaphysics, then, is not something in a book but something in a mind. Moreover, it is produced not by a book but only by the mind in which it is. Books can serve to supply the stimulus for a set of precise visual experiences, to issue through experiences an invitation to acts of insight, to lead through the insights to a grasp of the virtually unconditioned. But books cannot constitute the visual experiences, nor necessitate the insights, nor impose the attainment of the high moment of critical reflection that through the unconditioned reaches judgment. Further, the subject that is envisaged is not some general or trans-

cendental or absolute subject; from the viewpoint of the writer it is any particular subject that can experience, can inquire intelligently, can reflect critically; but from the viewpoint of the reader the particular subject is the subject that he or she is. No one can understand for another or judge for another. Such acts are one's own and only one's own. Explicit metaphysics is a personal attainment.

Particular subjects are many. Their respective histories and attainments are diverse. Their outlooks on the universe are disparate. Yet despite their multiplicity, their diversity, their disparateness, they as they actually are, constitute the starting-point for the process that leads to explicit metaphysics. There is no use addressing minds that could be or should be but in fact are not, if one would encourage the genesis of explicit metaphysics in the minds that are. Just as metaphysics can exist only in a mind and can be produced only by the mind in which it is to be, so also metaphysics can begin only in minds that exist and it can proceed only from their actual texture and complexion. Bluntly, the starting-point of metaphysics is people as they are.

Between this starting-point and the goal, there is the process. It is a process from latent through problematic to explicit metaphysics. People ~~as they~~ cannot avoid experience, cannot put off their intelligence, cannot renounce their reasonableness. But they may never have adverted to these concrete and factual inevitabilities. They may be unable to distinguish between them sharply, or discern the immanent order that binds them together, or find

in them the dynamic structure that has generated all their scientific knowledge and all their common sense, or acknowledge in that dynamic structure a normative principle that governs the outcome of all inquiry, or discover in themselves other equally dynamic structures that can interfere with the detached and disinterested unfolding of the pure desire to know, or conclude to the polymorphism of their subjectivity and the untoward effects it can have upon their efforts to reach a unified view of the universe of proportionate being.

The process, then, to explicit metaphysics is primarily a process to self-knowledge. It has to begin from the polymorphic subject in his native disorientation and bewilderment. It cannot appeal to what he knows for as yet he has not learnt to distinguish sharply and effectively between the knowing men share with animals, the knowing that men alone possess, and the manifold blends and mixtures of the two that are the disorientation and ground the bewilderment of people as they are. Since an appeal to disorientated knowledge would only extend and confirm the disorientation, the appeal must be to the desire that is prior to knowledge, that generates knowledge, that can effect the correction of miscarriages in the cognitional process. Still, it cannot be taken for granted that the subject knows his own desire and its implications; were there such knowledge, the disorientation would be remedied already; and so the initial appeal is to the desire, not as known, but as existing and operative. The first directive, then, is to begin from interest, to excite it, to use its momentum to carry things along. In other words, the method of metaphysics primarily is peda-

gogical: it is headed towards an end that is unknown and as yet cannot be disclosed; from the viewpoint of the pupil, it proceeds by cajoling or forcing attention and not by explaining the intended goal and by inviting an intelligent and reasonable cooperation. So it was that without mentioning metaphysics, we studied the fact and the nature of insight in mathematics, in the empirical sciences, in common sense, in judgments on mathematics, on the empirical sciences, and on the myriad concrete and particular objects of common sense. So too, we examined self-affirmation and the notions of being and of objectivity. So too we began to talk about the dialectic of philosophy. In the measure in which we have been successful, the reader will know what is meant by insight, what is meant by reasonableness, how both differ from the internal and external experience that they presuppose, how all three form a patterned orientation that differs from other orientations that commonly are more familiar and more frequent. In the measure that such self-knowledge has been reached, it is possible to leave pedagogy and to discuss method; and so we find ourselves discussing method.

A method, as was remarked, is a set of directives that guide a process to a result. But the result can exist only in a self-affirming subject, and the process can be produced only by the subject in which the result is to exist. It follows that the directives of the method must be issued by the self-affirming subject to himself. The initial pedagogical stage was to enable the subject to issue the proper directives; and the present discussion of method has to be the subject's own determination of the directives he is to issue.

The method, then, of metaphysics is dictated by the self-affirming subject in the light of his pedagogically acquired self-knowledge. For that self-knowledge is dynamic. It has revealed the source of disorientation and bewilderment. Spontaneously it moves towards the attainment of reorientation and integration.

The reorientation is to be effected in the field of common sense and of the sciences. On the one hand, these departments of the subject's knowledge and opinion are not to be liquidated. They are the products of experience, intelligence, and reflection, and it is only in the name of experience, intelligence, and reflection that self-knowledge issues any directives. As they are not to be liquidated, so they are not to be taken apart and reconstructed, for the only method for reaching valid scientific views is the method of science, and the only method for attaining common sense is the method common sense already employs. As metaphysicians neither teach science nor impart common sense, so they cannot revise or reconstruct either science or common sense. Still, this is not the whole story. For it would be excessively naive for the self-knowing subject to suppose that his scientific knowledge and his common sense are purely and simply the product of experience, intelligent inquiry, and critical reflection. The subject knows the polymorphism of his own consciousness; he knows how it generates a dramatic, an egoistic, a group, and a general bias in common sense; he knows how it intrudes into science confused notions on reality, on objectivity, and on knowledge. While, then, science and common sense are to be accepted, the acceptance is not

to be uncritical. There are precise manners in which common sense can be expected to go wrong; there are definite issues on which science is prone to issue extra-scientific opinions; and the reorientation demanded and effected by the self-knowledge of the subject is a steadily exerted pressure against the common nonsense that tries to pass for common sense and against the uncritical philosophy that pretends to be a scientific conclusion.

As the subject's advertence to the polymorphism of his consciousness leads to a transforming reorientation of his scientific opinions and his common sense, so his advertence both to his detached and disinterested desire to know and to the immanent structure of its unfolding leads to an integration both of what is known and of what is to be known of the universe of proportionate being. It is in this integration that metaphysics becomes explicit and, to forestall misapprehension and misinterpretation, let us attempt to state as clearly as we can the nature of the transition from latent to explicit metaphysics.

First, then, in its general form, the transition is a deduction. It involves a major premiss, a set of primary minor premisses, and a set of secondary minor premisses.

Secondly, the major premiss is the isomorphism that obtains between the structure of knowing and the structure of the known. If the knowing consists of a related set of acts and the known is the related set of contents of these acts, then the pattern of the relations between the acts is similar in form to the pattern of the relations between the contents of the acts. This premiss is analytic.

Thirdly, the set of primary minor premisses consists of a series of affirmations of concrete and recurring structures in the knowing of the self-affirming subject. The simplest of these structures is that every instance of knowing proportionate being consists of a unification of experiencing, understanding, and judging. It follows from the isomorphism of knowing and known that every instance of known proportionate being is a parallel unification of a content of experience, a content of understanding, and a content of judgment.

Fourthly, the set of secondary minor premises is supplied by reorientated science and common sense. From the major and the primary minor premisses there is obtained an integrating structure; but from the secondary minor premisses there are obtained the materials to be integrated. Again, from the major and the primary minor premisses there is obtained a well-defined and definitive set of questions to be answered; from the secondary minor premisses there is obtained the fact of answers and their frequency.

Fifthly, this use of the above premisses effects a transition from a latent to an explicit metaphysics. For, in any case, cognitional activity operates within heuristic structures towards goals that are isomorphic with the structures. If this basic feature of cognitional activity is overlooked, metaphysics is latent. If this feature is noted, if the structures are determined, if the principle of isomorphism is grasped, then the latent metaphysics, to which everyone subscribes without knowing he does so, ceases to be latent and becomes explicit.

Sixthly, the method is not essential to obtaining the results. There is nothing to prevent an intelligent and reasonable man from beginning with the set of secondary minor premisses, from discovering in them the structures that they cannot escape, and from generalizing from the totality of examined instances to the totality of possible instances. In fact, this has been the procedure of the Aristotelian and Thomist schools and, as will appear, their results largely anticipate our own.

Seventhly, however, there is much to be gained by employing the method. Aristotelian and Thomist thought has tended to be, down the centuries, a somewhat lonely island in an ocean of controversy. Because of the polymorphism of human consciousness, there are latent in science and common sense not only metaphysics but also the negation of metaphysics; and only the methodical reorientation of science and common sense puts an end, at least in principle, to this permanent source of confusion. Further, without the method it is impossible to assign with exactitude the objectives, the presuppositions, and the procedures of metaphysics; and this lack of exactitude ~~will~~ may result in setting one's aim too low or too high, in resting one's case on alien or insecure foundations, in proceeding to one's goal through unnecessary detours.

Finally, the misconceptions, in which metaphysics thus becomes involved, may rob it of its validity and of its capacity for development: what should provide an integration for the science and the common sense of any age risks taking ~~takes~~ on the appearance of a mummy that would preserve for all time Greek science and medieval common sense.

To recapitulate, the goal of the method is the emergence of explicit metaphysics in the minds of particular men and women. It begins from them as they are, no matter what that may be. It involves a preliminary stage that can be methodical only in the sense in which a pedagogy is methodical, that is, the goal and the procedure are known and pursued explicitly by a teacher but not by the pupil. The preliminary stage ends when the subject reaches an intelligent and reasonable self-affirmation. Such self-affirmation is also self-knowledge. It makes explicit the pursuit of the goal that has been implicit in the pure desire to know. From that explicit pursuit there follow the directives, first, of reorientating one's scientific knowledge and one's common sense and, secondly, of integrating what one knows and can know of proportionate being through the known structures of one's cognitional activities.

4. A Critique of Some ~~The Dialectic of~~ Methods in Metaphysics

A method can direct activity to a goal only by anticipating the general nature of the goal. But the only question to be settled in metaphysics is the general nature of the goal of knowledge, for all questions of detail have to be met by the sciences and by common sense. Accordingly, it would seem that every method in metaphysics must be involved in the fallacy of begging the question. By the mere fact of settling upon a method, one presupposes as settled the very issue that metaphysics proposes to resolve.

This difficulty reveals the significance of the distinction we have drawn between latent and explicit

metaphysics. For latent metaphysics is an anticipation of the goal of knowledge that is present and operative independently of any metaphysical inquiry. Inasmuch as metaphysical inquiry aims at making latent metaphysics explicit, it proceeds not from arbitrary assumptions about the goal of knowledge, which would involve it in the fallacy of begging the question, but from matters of fact that any inquirer can verify in his own empirical, intelligent, and rational consciousness.

There is, however, a further aspect to the matter. Because the results obtained in the empirical sciences commonly are far less general than the methods they employ, scientists are not troubled to any notable extent by a predetermination of their results by their choice of method. In metaphysics, however, methods and results are of equal generality and tend to be coincident. It follows that difference in metaphysical positions can be studied expeditiously and compendiously by examining differences in method. Moreover, such a study is not confined to tabulating the correlations that hold between different methods and different metaphysical systems. For there is only one method that is not arbitrary, and it grounds its explicit anticipations on the anticipations that, though latent, are present and operative in consciousness. Finally, besides the correlations between methods and systems, besides the criticism of methods based on the latent metaphysics of the human mind, there is the dialectical unfolding of positions inviting development and counter-positions inviting reversal. It is to this dialectic

of metaphysical methods that attention now is to be directed, not of course in the full expansion that would be possible only in a survey of the whole history of philosophy, but in the articulation of its basic alternatives and with the modest purpose of indicating the outlines of a heuristic scheme for historical investigations.

4.1 Deductive Methods

Any metaphysical system eventually assumes the form of a set of propositions. The propositions can be divided into primitive and derived, and a logical technique can establish that if the primitive propositions are accepted, then the derived must also be accepted. The problem, then, of a deductive method is to select correctly the primitive propositions.

A first alternative is to assert that one's primitive propositions are universal and necessary truths. Since they are not deduced, they commonly will be claimed to be self-evident. However, a dialectic of method need not scrutinize this claim, for the properties of universal and necessary truths turn out to be sufficiently significant.

If the primitive propositions are universal, then they are abstract. They may refer to existing objects, but they do not assert the existence of any object, unless the universal is supposed to exist. This conclusion is confirmed by such keen logicians as Duns Scotus and William of Ockham, both of whom felt compelled to complement their abstract systems with the affirmation of an intuition of the existing and present as existing and present.

Further, if the primitive propositions are necessary, then they hold not merely for this universe but also for any possible world. It follows that the metaphysical system has no particular reference to this universe, for it holds equally for any universe. Again, it follows that the metaphysical system does not aim at integrating the empirical sciences and common sense; for both the empirical sciences and common sense are content to ascertain what in fact is so; but the deductive system in question has no interest in any contingent truth no matter how general or how comprehensive it may be.

Let us now inquire which truths can be regarded as universal and necessary. Clearly, all analytic propositions meet the above requirements. For they suppose nothing but the definitions of their terms and the rules of syntax that govern the coalescence of the terms into propositions. Provided that one does not affirm either the existence of the terms or the existence of operations in accord with the syntactical rules, one can have at one's disposal an indefinitely large group of truths that are universal and necessary, that affirm no existent, and that are equally valid in every possible world. On the other hand, the metaphysical system in question cannot be based on analytic principles, for the transition from the analytic proposition to the analytic principle is through concrete judgment of fact affirming that the terms, as defined, occur in a concrete existing universe.

It follows that the abstract metaphysics of all possible worlds is empty. Historically, however, this

emptiness was discovered by a different route. For the medieval theologians that explored this type of system acknowledged the existence and the omnipotence of God; the only possible restriction upon divine omnipotence and so the only restriction on the range of possible worlds lay in the principle of contradiction. Their metaphysics dealt with all possible worlds and so it dealt simultaneously with every possible instance of the non-contradictory. Not only did this object prove extremely tenuous and elusive, but it soon became apparent that the one operative principle in their thought was the principle of contradiction. Moreover, this principle ran counter to their affirmation of an intuition of the existing and present as existing and present. For it would be contradictory to affirm and deny some occurrence of the intuition; it would be contradictory to affirm and deny the existence of some object; but there is no apparent contradiction in affirming the occurrence of the intuition and denying the existence of its object. If no contradiction is involved, then in some possible world there would occur intuitions of the existence of what did not exist; and as Nicolaus of Autrecourt perceived, neither analytic propositions nor intuitions can assure one that the possibility of illusory intuitions is not realized in this world.

The alternative to the abstract deduction that turns out to be empty is, of course, a concrete deduction. The existent does not lie outside the deductive system but, from the start, is included within it. Instead of operating vainly with analytic propositions, one proposes to operate fruitfully with analytic principles whose terms,

in their defined sense, refer to what exists.

Now it is characteristic of a deduction that conclusions follow necessarily from the premisies. It follows that a concrete deduction is possible only if an objective necessity binds the existent that is concluded to the existent referred to in the premisies. For without this objective necessity logically impeccable inferences would arrive at possibly false conclusions.

Now there are many metaphysical systems that reveal how this objective necessity might be conceived. Thus, a monist would affirm the existence of a single reality with a set of necessary attributes and modes; and clearly enough his chain of syllogisms could be applied validly to a universe conceived in this fashion. Again, emanationist doctrines begin from a necessary being from which proceed necessarily all other beings; the application of a syllogistic chain would be more difficult in this case but there is no point in haggling over the matter. In the third place, one might suppose that God exists necessarily but is bound morally to create the best of all possible worlds; and so in a fashion one would secure a universe for concrete deductivist thought.

However, it is one thing to conceive a variety of universes; it is another to know whether any one of them exists. If one affirms this universe to be monist, because that is the conclusion of one's concrete deduction, it will be pointed out that one's choice of method amounted to begging the question; for the choice of concrete deduction makes it inevitable that one conclude to a monism or an emanationism

or an optimism or a mechanist determinism; and so one's argument could be revelant only to discovering which of this limited range of alternatives was the most satisfactory. Clearly, the real issue is to determine, not what follows once the method of concrete deduction is assumed, but whether or not that method is to be employed.

Accordingly, if abstract deduction is empty, concrete deduction sets a prior question. Moreover, since the metaphysical question is the general nature or structure of the universe, the prior question, it seems, must regard the mind that is to know the universe. In this fashion one is led to ask what kind of mind would be needed if the universe is to be known by concrete deduction. Or, to give the issue its more concrete form, what are the constitutive conditions of such a concrete deduction as Newton's Mathematical Principles of Natural Philosophy.

Since the deducing can be performed satisfactorily by an electronic computer, the problem may be limited to the origin of the requisite premisses. These premisses, it would seem, must be both synthetic and a priori. They must be synthetic. For analytic propositions lack both relevance and significance; they lack relevance, for they regard all possible worlds but are isolated from the actual world; they lack significance, for they are obtained by studying the rules of syntax and the meanings of words, and clearly that procedure does not yield an understanding of this universe. Again, the required premisses must be a priori. They are not to be known merely by taking a look at what is there to be seen; for what is there to be seen is particular; and no

amount of mere looking endows it with the significance that explains the existing universe. The possibility, then, of a concrete deduction, such as Newton's, coincides with the possibility of synthetic a priori premisses. But this possibility implies that the mind must be, not a mirror that simply reflects reality, but a sort of factory in which the materials supplied by outer and inner sense are processed into appropriate syntheses. Finally, if the mind is a factory of this type, it is capable of performing concrete deductions of the scientific type but it does not seem at all capable of performing concrete deductions of the metaphysical type.

Various objections have been raised against such a deduction of the possibility of concrete deduction, but the most fundamental seems to be that the problem is not envisaged in its full generality. It is not enough to account for Newton's deduction alone or for Einstein's deduction alone. What has to be accounted for is a series of concrete deductions, none of which is certain and each of which is the best available scientific opinion of its time. The mind is not just a factory with a set of fixed processes; rather it is a universal machine tool that erects all kinds of factories, keeps adjusting and improving them, and eventually scraps them in favor of radically new designs. In other words, there is not some fixed set of a priori syntheses. Every insight is an a priori synthesis; insight follows on insight to complement and correct its predecessor; earlier accumulations form viewpoints to give place to higher viewpoints; and above the succession of viewpoints,

there is the activity of critical reflection with its demand for the virtually unconditioned and its capacity to estimate approximations to its rigorous requirement.

Now there are those who would prefer a simpler solution, and they point out that Kant overlooked the medieval theory of abstraction. The oversight, however, is multiple for there were different medieval theories and at least two of them merit our attention.

Certainly Duns Scotus would have rejected the Kantian notion of the a priori for the very reasons that led him to reject the Aristotelian and Thomist view that intellect apprehends the intelligible in the sensible and grasps the universal in the particular. After all, what is presented by sense or imagination, is not actually intelligible or actually universal. But objective knowing is a matter of taking a look at what actually is there to be seen. If then intellect apprehends the intelligible in the sensible and the universal in the particular, its apprehension must be illusory, for it sees what is not there to be seen. None the less, we do know what is intelligible and universal. To account for this fact without violating his convictions on extroversion as the model of objectivity, Scotus distinguished a series of steps in the genesis of intellectual knowledge. The first step was abstraction: it occurs unconsciously; it consists in the impression upon intellect of a universal conceptual content. The second step was intellection: intellect takes a look at the conceptual content. The third step was a comparison of different contents with the result that intellect saw which concepts were conjoined

necessarily and which were incompatible. There follows the deduction of the abstract metaphysics of all possible worlds and to it one adds an intuition of the existing and present as existing and present to attain knowledge of the actual world.

Aristotle and Aquinas both affirmed the fact of insight as clearly and effectively as can be expected. As they considered the sensible as seen to be only potentially in the object, so they considered the intelligible as understood to be only potentially in the image. Similarly, they considered both faculties to operate infallibly, but they affirmed this infallibility not absolutely but only as a rule (per se). (Nor is it difficult to surmise what the per se infallibility of insight is. One cannot misunderstand what one imagines; misunderstanding is the fault, not of intelligence, but of imagination which can exhibit what is not and can fail to exhibit all that is; hence, when we attempt to correct a misunderstanding, we point out what we think is misrepresented or overlooked by imagination; and when we acknowledge a misunderstanding, we add that we had not adverted to this or that.) Finally, truth and error lie not on the level of questions for intelligence but on the level of questions for reflection; and prior to judgment, which is true or false, there occurs a scrutiny in which the proposed judgment is reduced to its sources in the data of sense and the activities of intellect.

Footnote (. . .)

Again, Aristotle and Aquinas affirmed self-evident principles that result necessarily from the definitions of their terms. But Aquinas, at least, had a further require-

ment; it was not enough for the principles to result necessarily from any terms whatever; the terms themselves needed some validation, and this office was attributed to the judicial habit or virtue named wisdom. What, then, is wisdom? In its higher form, Aquinas considered it a gift of the Holy Spirit and connected it with mystical experience. In its lower form, Aquinas identified it with Aristotle's first philosophy defined as the knowledge of all things in their ultimate causes. Clearly enough, the problem of metaphysical method demands a third form of wisdom. For the problem is not to be solved by presupposing a religion, a theology, or mystical experience. Similarly, the problem is not to be solved by presupposing a metaphysics, for what is wanted is the wisdom that generates the principles on which the metaphysics is to rest. But it does not seem that Aquinas treated explicitly the third type of wisdom. He was concerned to present the universe from the explanatory viewpoint that relates things to one another. From that viewpoint the human subject is just one being among others; and the human subject's knowledge is a relating of one type of being to others. So Thomist cognitional theory is cast explicitly in metaphysical terms; and one cannot be surprised that the Thomist theory of basic judgments similarly has metaphysical suppositions. Finally, if, as I have argued elsewhere, there is to be pieced together from Thomist writings a sufficient number of indications and suggestions to form an adequate account of wisdom in cognitional terms, it cannot be denied that the polymorphism of human consciousness interferes with the performance of this delicate opera-

tion; after all, G. van Riet needed over six hundred pages to outline the various types of Thomist epistemology that have been put forward in the last century and a half.

Our consideration of deductive methods in metaphysics found abstract deduction to be empty and concrete deduction to stand in need of a prior inquiry. This prior inquiry was not conducted with sufficient generality by Kant, nor with sufficient discrimination by Scotus. Finally, its possibility was implied by Aquinas, but the varieties of Thomist interpretation are as much in need of a prior inquiry as anything else. It would seem, then, that at least one positive conclusion can be drawn, namely, that deductive method alone is not enough. The fascination exerted by this method lies in its apparent promise of automatic results that are independent of the whims and fancies of the subject. The deducing proceeds in accord with a rigorous technique; the primitive premisses are guaranteed by a self-evidence that claims to exercise an objective compulsion to which the subject must submit if he is not to be guilty of a lapse in intellectual probity. In fact, however, it is not so easy to leave the subject outside one's calculations, and so we now must turn to directive methods that aim to guide the metaphysical enterprise by guiding the subject that undertakes it.

4.2 Universal Doubt

In its simplest form the method of universal doubt is the precept: Doubt everything that can be doubted. Let us begin by attempting to determine the consequences of

following out this precept by applying rigorously its criterion of indubitability.

First, all concrete judgments of fact are to be excluded. For while they rest on invulnerable insights, still the invulnerability amounts to no more than the fact that further relevant questions do not arise. A criterion of indubitability is more exigent. It demands the impossibility of further relevant questions, and in concrete judgments of fact such impossibility neither exists nor is apprehended.

Secondly, both empirical science and common sense are excluded. For both aim at ascertaining what in fact is so, and neither succeeds in reaching the indubitable. No doubt, it would be silly to suppose that there are further relevant questions that would lead to the correction of the insights grounding bare statements of fact or elementary measurements. But that is beside the point, for the question is not what certainly is true or false but what indubitably is true or false; and indubitability requires not the fact but the impossibility of further relevant questions.

Thirdly, the meaning of all judgments becomes obscure and unsettled. For the meaning of a judgment can be clear and precise only if one can assign a clear and precise meaning to such terms as reality, knowledge, objectivity. A clear and precise meaning can be assigned to such terms only if one succeeds in clarifying the polymorphic consciousness of man. Such a clarification can be effected by a lengthy, difficult, and delicate inquiry into the facts of human

cognitional activity. But if one excludes all concrete judgments of fact, one excludes the clarification and so one is bound to regard the meaning of every judgment as obscure and unsettled.

Fourthly, all mere suppositions satisfy the criterion of indubitability. For the mere supposition excludes the question for reflection, and doubt becomes possible only after the question for reflection arises. Thus, if you suppose that A is B, and I ask whether A really is B, you are entitled to point out that you are merely supposing A to be B, and that my question tries to put an end to mere supposing. On the other hand, there is no possibility of doubting whether or not A is B until that question arises, and so all mere suppositions are indubitable. It follows that all analytic propositions are indubitable, inasmuch as they rest on rules of syntax and on definitions of terms, and all such rules and definitions are regarded as mere suppositions. On the other hand, analytic principles are not indubitable, for they require concrete judgments of fact in which occur the defined terms in their defined sense; and, as has been seen, all concrete judgments of fact are excluded by the criterion of indubitability.

Fifthly, the existential subject survives, for the existential subject is the subject prior to the question, Am I? The criterion of indubitability does not eliminate the experienced center of experiencing, the intelligent center of inquiry, insight, and formulations, the rational center of critical reflection, scrutiny, hesitation, doubt, and frustration. Indeed, the method of uni-

versal doubt presupposes the existence of this center and imposes frustration upon it. One can argue that before I can doubt, I must exist, but what does the conclusion mean? What is the "I"? What is existing? What is the meaning of affirming? All these questions can be given answers that are correct in fact. But as long as the criterion of indubitability remains in force, they cannot be given any clear or precise answer, for that would suppose a clarification of the polymorphism of human consciousness.

Sixthly, not even the criterion of indubitability is indubitable. It is clear enough that one makes no mistake in accepting the indubitable. It is not at all clear that one makes no mistake in rejecting everything that in fact is true. But the criterion of indubitability excludes all concrete judgments of fact, no matter how true and certain they may be. Therefore, the criterion of indubitability is not itself indubitable. It follows that the frustrated existential subject practising universal doubt cannot console himself with the thought that there is anything rational about his doubting.

Seventhly, every assignable reason for practising universal doubt is eliminated by a coherent exercise of the doubt. Thus, one might adopt the method of universal doubt in the hope of being left with premisses for a deduction of the universe; but the exercise of the doubt removes all premisses and leaves only mere suppositions; moreover, even if it left some premisses, it would question the validity of the project of deducing the universe, for it is

not indubitable that the universe can be deduced. Again, one might adopt the method of universal doubt, because one felt the disagreement of philosophers to reveal their incompetence and to justify the use of a violent remedy; but the exercise of the doubt leaves nothing for philosophers to disagree about and, as well, it leaves open to suspicion the assumption that their disagreements stem from their incompetence; for it is conceivable that philosophic process is dialectical with positions inviting development and counterpositions inviting reversal.

Eighthly, the method of universal doubt is a leap in the dark. If we have been able to determine a list of precise consequences of universal doubt, we also have presupposed our account of the structure of human knowledge and of the polymorphism that besets it. But that account is not indubitable. At most, it is true as a matter of fact. Accordingly, to accept the criterion of indubitability is to deprive oneself of the means of ascertaining what precisely that criterion implies; and to accept a criterion without being able to determine its precise implications is to make a leap in the dark.

Ninthly, while the consequences of universal doubt will come to light in the long run, the proximate results of the method will be arbitrary and illusory. Proximate results will be arbitrary, for the exact implications of the method are unknown. Moreover, proximate results will be illusory. For doubting affects, not the underlying texture and fabric of the mind, but only the explicit judgments

that issue from it. One can profess in all sincerity to doubt all that can be doubted, but one cannot abolish at a stroke the past development of one's mentality, one's accumulation of insights, one's prepossessions and prejudices, one's habitual orientation in life. So one will have little difficulty in seeing that the views of others are very far from being indubitable; at the same time, because the doubt is applied arbitrarily, one's own rooted convictions not merely will survive but also will be illuminated with the illusory splendor of having passed unscathed through an ordeal that the views of others could not stand. Accordingly, it will be only in the long run that the full implications of universal doubt will come to light, when the method has been applied by many persons with quite different initial convictions.

However, if I believe that universal doubt was practised more successfully by Hume than by Descartes and, perhaps, more successfully by the existentialists and some of the logical positivists than by Hume, I must also recall that my topic has been, not the concrete proposal entertained by Descartes, but the consequences of interpreting literally and applying rigorously the precept, Doubt everything that can be doubted. Clearly enough, the implications of that precept fail to reveal the profound originality and enduring significance of Descartes, for whom universal doubt was not a school of skepticism but a philosophic program that aimed to embrace the universe, to assign a clear and precise reason for everything, to exclude the influence of

unacknowledged presuppositions. For that program we have only praise, but we also believe that it should be dissociated from the method of universal doubt whether that method is interpreted rigorously or mitigated in a fashion that cannot avoid being arbitrary.

Finally, it should be noted that a rejection of universal doubt implies a rejection of the excessive commitment with which it burdens the philosophic enterprise. The only method to reach the conclusions of science is the method of science. The only method to reach the conclusions of common sense is the method of common sense. Universal doubt leads the philosopher to reject what he is not equipped to restore. But philosophers that do not practise universal doubt are not in that predicament, and it is only a mistaken argument from analogy that expects of them a validation of scientific or common sense views.

4.3 Empiricism

A second method that offers to guide the subject issues the precept: Observe the significant facts. Unfortunately, what can be observed is merely a datum; significance accrues to data only through the occurrence of insights; correct insights can be reached only at the term of a prolonged investigation that ultimately reaches the point where no further relevant questions arise; and without the combination of data and correct insights that together form a virtually unconditioned, there are no facts. Such, I believe, is the truth of the matter, but is is an extreme-

ly paradoxical truth, and the labor of all the pages that precede can be regarded as a sustained effort both to clarify the nature of insight and judgment and to account for the confusion, so natural to man, between extroversion and objectivity. For man observes, understands, and judges, but he fancies that what he knows in judgment is not known in judgment and does not suppose an exercise of understanding but simply is attained by taking a good look at the "real" that is "already out there now". Empiricism, then, is a bundle of blunders, and its history is their successive clarification.

In its sublimest form, the observation of significant facts occurs in St. Augustine's contemplation of the eternal reasons. For years, as he tells us, St. Augustine was unable to grasp that the real could be anything but a body. When with Neo-Platonist aid he got beyond that view, his name for reality was veritas; and for him truth was to be known, not by looking out, nor yet by looking within, but rather by looking above where in an immutable light men consult and contemplate the eternal reasons of things. It is disputed, of course, just how literally St. Augustine intended this inspection of the eternal to be understood. Aquinas insisted that the Uncreated Light grounds the truth of our judgments, not because we see that Light, but because our intellects are created participations of it. But if St. Augustine's meaning is doubtful, there is less doubt about a group of nineteenth century Catholics, known as ontologists, who believed that the only way to meet Kant's

claim that the unconditioned is, not a constitutive element in judgment, but a merely regulative ideal, was to issue under Augustinian auspices the counter-claim that the notion of being was an obscure intuition of God.

As there is an empiricism on the level of critical reflection, so there is an empiricism on the level of understanding. The Scotist theory of abstraction was outlined above and, as was said, its second step consists in intellect taking a look at a conceptual content produced in the intellect by the unconscious cooperation of the intellective and the imaginative powers of the soul. Moreover, such intellectual empiricism reaches far beyond the confines of the Scotist school. The objective universals of Platonist thought seem to owe their origin to the notion that, as the eye of the body looks upon colors and shapes, so there is a spiritual eye of the soul that looks at universals or, at least, recalls them. Finally, the Aristotelian and Thomist traditions are not without their ambiguities. Though Aristotle acknowledged the fact of insight and Aquinas added to Aristotle a transposition of Augustinian thought on judgment and of Neo-Platonist thought on participation and being, still Aristotle's physics probably is a study of "bodies" and, until recently, Thomist commentators have tended, almost universally, to ignore Aquinas' affirmation of insight and to take it for granted that, while Aquinas obviously differed from Scotus in the metaphysical analysis of cognitional process, still the psychological content of his doctrine was much the same as that of Scotus.

The conflict between objectivity as extroversion and intelligence as knowledge has provided a fundamental theme in the unfolding of modern philosophy. Cartesian dualism was the juxtaposition of the rational affirmation, "Cogito, ergo sum", and of the "already out there now real" stripped of its secondary qualities and of any substantiality distinct from spatial extension. While Spinoza and Malebranche attempted to swallow the dualism on the rationalist side, Hobbes reduced thinking to an unprivileged instance of matter in motion. The Cambridge Platonists endeavored to accept Hobbes' conception of the real as "out there now" and yet to affirm God as supremely real because his omnipresence was the reality of space and his eternity was the reality of time. Berkley sought the same end by a different route; he granted secondary qualities to be mere appearance, and concluded that primary qualities with still greater certainty were mere appearance: being then was being perceived, and so reality shifted from apparent "bodies" to the cognitional order. Finally, Hume brought analysis to bear effectively on the issue; our knowing involves not only elements but also unities and relations; the elements consist in a manifold of unrelated sense impressions; the unities and relations have no better foundation than our mental habits and beliefs; whatever may be the practical utility of our knowledge, at least it cannot pretend to philosophic validity.

If it is merely confusion of thought that interprets objectivity in terms of extroversion, Kant's Copernican revolution was a half-hearted affair. He pronounced both

primary and secondary qualities to be phenomena. He made absolute space and absolute time a priori forms of outer and inner sense. He regarded the things themselves of Newtonian thought to be unknowable. But he was unable to break cleanly from the basic conviction of animal extroversion that the "real" is the "already out there now". Though unknowable, Newton's things themselves were somehow known to produce impressions on our senses and to appear. The category of reality was to be employed by understanding when there occurred some filling in the empty form of time. The category of substance was identified with the permanence of reality in time. However convinced Kant was that "taking a look" could not be valid human knowing, he devoted his energies to showing how it could seem to be knowing and in what restricted sense it could be regarded as valid. Nor is the anomaly of his position surprising. If the schematism of the categories comes within striking distance of the virtually unconditioned, still Kant failed to see that the unconditioned is a constituent component in the genesis of judgment and so he relegated it to the role of a regulative ideal of systematizing rationality. But once extroversion is questioned, it is only through man's reflective grasp of the unconditioned that the objectivity and validity of human knowing can be established. Kant rightly saw that animal knowing is not human knowing; but he failed to see what human knowing is. The combination of that truth and that failure is the essence of the principle of immanence that was to dominate subsequent thought.

Cartesian dualism had been a twofold realism, and both the realisms were correct: for the realism of the extroverted animal is no mistake, and the realism of rational affirmation is no mistake. The trouble was that, unless two distinct and disparate types of knowing were recognized, the two realisms were incompatible. For rational affirmation is not an instance of extroversion, and so it cannot be objective in the manner proper to the "already out there now". On the other hand, the flow of sensible contents and acts is neither intelligent nor reasonable and so it cannot be knowledge of the type exhibited by science and philosophy. The attempt to fuse disparate forms of knowing into a single whole ended in the destruction of each by the other; and the destruction of both forms implied the rejection of both types of realism. The older materialism and sensism were discredited, but there was room for positivism and pragmatism to uphold the same viewpoint in a more cultured tone. German idealism swung through its magnificent arc of dazzling systems to come to terms with reality in relativism and Neo-Kantian analysis. But if a century and a half have brought forth no solution, it would seem necessary to revert to the beginning and distinguish two radically distinct types of knowing in the polymorphic consciousness of man.

For I do not think that E. Husserl's phenomenology does provide a solution. Scientific description can be no more than a preliminary to scientific explanation. But Husserl begins from relatedness-to-us, not to advance to

the relatedness of terms to one another, but to mount to an abstract looking from which the looker and the looked-at have been dropped because of their particularity and contingence. The vitality of animal extroversion is attenuated from sensitive perception to intuition of universals and from intuition of universals to the more impalpable inspection of formal essences (approximately, Scholastic transcendentals). As objects increase in generality and purity, subjects shrink to intentional acts. With remarkable acuteness and discrimination there are uncovered, described, compared, and classified the pure forms of noetic experience terminating in noematic contents. But the whole enterprise is under the shadow of the principle of immanence, and it fails to transcend the crippling influence of the extroversion that provides the model for the pure ego. In brief, phenomenology is a highly purified empiricism, and it did not take long for it to topple over into an existentialism that describes, not the abstract possibility of description, but men as they are.

But description is not enough. If it claims simply to report data in their purity, one may ask why the arid report should be added to the more lively experience. If it pretends to report the significant data, then it is deceived, for significance is not in data but accrues to them from the occurrence of insight. If it urges that it presents the insights that arise spontaneously, immediately, and inevitably from the data, one must remark that the data alone are never the sole determinants of the insights that arise in any but an infantile mind and that beyond the level

of insight there is the level of critical reflection with its criterion of the virtually unconditioned. If it objects that at least one must begin by describing the facts that are accessible to all, one must insist that knowledge of fact rests on a grasp of the unconditioned and that a grasp of the unconditioned is not the starting-point but the end of inquiry. Moreover, if one hopes to reach this end in an inquiry into knowledge, then one had better not begin with the assumption that knowing is "something there to be looked at and described". For knowing is an organically integrated activity: on a flow of sensitive experiences, inquiry intelligently generates a cumulative succession of insights, and the significance of the experiences varies concomitantly with the cumulation of insights; in memory's store of experiences and in the formulation of accumulated insights, reflection grasps approximations towards the virtually unconditioned and attainments of it to issue into probable and certain judgments of fact. To conceive knowing one must understand the dynamic pattern of experiencing, inquiring, reflecting, and such understanding is not to be reached by taking a look. To affirm knowing it is useless to peer inside, for the dynamic pattern is to be found not in this or that act but in the unfolding of mathematics, empirical science, common sense, and philosophy; in that unfolding must be grasped the pattern of knowing and, if one feels inclined to doubt that the pattern really exists, then one can try the experiment of attempting to escape experience, to renounce intelligence in inquiry, to desert reasonableness in critical reflection.

In brief, empiricism as a method rests on an elementary confusion. What is obvious in knowing is, indeed, looking. Compared to looking, insight is obscure, and grasp of the unconditioned is doubly obscure. But empiricism amounts to the assumption that what is obvious in knowing is what knowing obviously is. That assumption ~~obviously~~ is false, for if one would learn mathematics or science or philosophy or if one sought common sense advice, then one would go to a man that is intelligent and reasonable rather than to a man that is stupid and silly.

4.4 Common Sense Eclecticism

The third of the methods that would guide the philosopher to his goal is common sense eclecticism. If it rarely is adopted by original thinkers, it remains the inertial center of the philosophic process. From every excess and aberration men swing back to common sense and, perhaps no more than a ~~negligible~~ minority of students and professors, of critics and historians, never wander very far from a set of assumptions that are neither formulated nor scrutinized.

As has been seen however, common sense is variable. The common sense of one age is not that of another; the common sense of Germans is not that of Frenchmen; the common sense of Americans is not that of Englishmen and still less that of Russians. Roman Catholics have their common sense, Protestants theirs, Moslems theirs, and agnostics a fourth variety. Clearly such variations preclude hard and fast rules, yet general tendencies are not too difficult to discern. For commonly a distinction is drawn between the

activities of theoretical understanding, which not undeservedly are to be distrusted, and the pronouncements of pre-philosophic reflection, which ground human sanity and human cooperation and therefore must be retained.

Theoretical understanding, then, seeks to solve problems, to erect syntheses, to embrace the universe in a single view. Neither its existence, nor its value, nor the remote possibility of its success are denied. Still common sense is concerned not with remote but with proximate possibilities. It lauds the great men of the past, ostensibly to stir one to emulation, but really to urge one to modesty. It remarks that, if there are unsolved problems and, no doubt, there are, at least men of undoubted genius have failed to solve them. It leaves to be inferred that, unless one is a still greater genius, then one had best regard such problems as practically insoluble. But emphatically it would not discourage anyone inclined to philosophy. A recognition of one's limitations need not prevent one from studying philosophy, from teaching it, from contributing to reviews, from writing books. One can become learned in the history of philosophy. One can form one's reasoned judgments about the views of others. By taking care not to lose the common touch, by maintaining one's sense of reality, by cultivating balance and proportion, one can reach a philosophic viewpoint that is solidly reliable and, after all, sufficiently enlightened. For opinions are legion; theories rise, glow, fascinate, and vanish; but sound judgment remains. And what is sound judgment? It is to bow to the necessary, to accept the certain, merely to entertain the probable,

to distrust the doubtful, to disregard the merely possible, to laugh at the improbable, to denounce the impossible, and to believe what Science says. Nor are these precepts empty words, for there are truths that one cannot reject in practical living, there are others which it would be silly to doubt, there are claims to truth that merit attention and consideration, and each of these has its opposites. List the lot, draw out their implications, and you will find that you already possess a sound philosophy that can be set down in a series of propositions confirmed by proofs and fortified by answers to objections.

Such, approximately, is the program of common sense eclecticism, and I must begin by clarifying which of its many aspects I shall single out for comment and criticism. The present topic is the method of philosophy. On common sense eclecticism as a practical attitude, as a pedagogy, as a style in composing text-books, as a technique in discussing issues, I have no remarks to make. But I began by pointing out that one's method in philosophy predetermines what one's philosophy will be, and now I have to examine what is the philosophy or lack of philosophy to which one commits oneself by adopting common sense eclecticism as a method.

In the first place, attention must be drawn to the difference between the foregoing eclecticism and my own concessions to common sense. In the method outlined after defining metaphysics, common sense no less than science ~~were~~ was called upon to supply secondary minor premisses in the argument; for the aim was to integrate science and common sense and an integration is not independent of its materials.

However, before being invited to play this subsidiary role, both science and common sense were to be subjected to a reorientation which they did not control: in particular, the liability of common sense to dramatic, egoistic, group, and general bias, had been noted; the ambiguities of such terms as reality, knowledge, and objectivity had been examined; and only a criticized and chastened common sense was entrusted with no more than a subsidiary philosophic role. The method of common sense eclecticism not only dispenses with such criticism and reorientation but also allows uncriticized common sense to settle by its practicality the aim of philosophy and to measure naively the resources at the philosopher's disposal. Let us attempt to expand these points briefly.

Secondly, then, common sense eclecticism brushes aside the aim of philosophy. For that aim is the integrated unfolding of the detached, disinterested, and unrestricted desire to know. That aim can be pursued only by the exercise of theoretical understanding and, indeed, only by the subtle exercise that understands both science and common sense in their differences and in their complementarity. But common sense eclecticism deprecates the effort to understand. For it, problems are immutable features of the mental landscape, and syntheses are to be effected by somebody else who, when he has finished his system, will provide a name for merely another viewpoint.

Thirdly, common sense eclecticism denies the vital growth of philosophy. It restricts significant activity to men of genius, and it takes it for granted that they are

very few and very rare. But within the context of the philosophic process, every discovery is a significant contribution to the ultimate aim. If it is formulated as a position, it invites the development of further coherent discovery. If it is formulated as a counter-position, it invites the exploration of its presuppositions and implications and it leads to its own reversal to restore the discovery to the cumulative series of positions and to enlighten man on the polymorphism of his consciousness. This activity of discovery, of developing positions, and of reversing counter-positions, is not restricted to the men of genius of whom common sense happens to have heard. It results from all competent and conscientious work and, like natural growth, it goes forward without attracting widespread attention. So far from being the product of genius, it produces genius. For the genius is simply the man at the level of his time, when the time is ripe for a new orientation or a sweeping reorganization; and it is not the genius that makes the time ripe, but the competent and conscientious workers that slowly and often unconsciously have been developing positions and heading towards the reversal of counter-positions. But common sense eclecticism brushes all this aside with a homily on the acknowledgement of one's personal limitations. The exercise of theoretical understanding is to be left to men of genius, and common sense will see to it that no effort is made to prepare their way and no comprehension is available to greet their achievements.

Fourthly, while common sense eclecticism discourages the effort to understand, it encourages a wide exercise of judgment. But this is to overlook the fact that under-

standing is a constitutive component in knowledge, that before one can pass judgment on any issue, one has to understand it. Nor is the requisite understanding to be estimated by average attainment, by the convictions of common sense, by the beliefs of a given milieu, but solely by that absence of further relevant questions that leads to a reflective grasp of the virtually unconditioned. Unless one endeavors to understand with all one's heart and all one's mind, one will not know what questions are relevant or when their limit is approached. Yet eclecticism, while discouraging understanding, urges one to pass through the display of opinions in the history of philosophy and to discriminate between the necessary and the certain, the probable and the doubtful, the possible, the improbable, and the impossible.

The fallacy of this procedure is, of course, that it fails to grasp the limitations of common sense. The proper domain of common sense is the field of particular matters of fact; it is that field, not as a single whole, but divided up and parcelled out among the men and women familiar with its several parts; it is such a part, not in its basic potentialities, nor in its underlying necessities, nor in its accurately formulated actuality, but simply in its immediate relevance to human living in the mode and fashion of such living in each region and each age. One can entrust common sense with the task of a juror; one cannot ask it to formulate the laws of a country, to argue cases in its courts, to decide on issues of procedure, and to pass sentence on criminals. One does not have to be a scientist to see the color of litmus paper or to note the position

of a needle on a dial; but one cannot rely on mere common sense to devise experiments or to interpret their results. Similarly, in philosophy, if one presupposes an independently established set of philosophic concepts and positions, then common sense can provide the factual boundary conditions that decide between theoretical alternatives. But it is vain to ask common sense to provide the philosophic concepts, to formulate the coherent range of possible positions, to set the questions that can be answered by an appeal to commonly known facts. By deprecating theoretical understanding and by encouraging a wide exercise of judgment, common sense eclecticism does what it can to make philosophy obtuse and superficial.

Fifthly, common sense eclecticism cannot be critical. Not only is common sense a variable but also it is subject to a dramatic, an egoistic, a group, and a general bias. Once the aim of philosophy is brushed aside, once the resources of its natural growth are ignored, once a vain program of incompetent judgment is established, not only common sense but also its bias are in charge and they are there to stay. Distinct philosophies emerge for the changing tastes and fashions of racial, economic, regional, national, cultural, religious, and anti-religious groups and even subgroups. Spice and originality are added by the special brands of common sense peculiar to psycho-neurotics, assertive egoists, and aspiring romanticists. And if human society tires of muddling through one crisis into another, then there arises the temptation that the only means to attain an effective community of norms and directives is to put the educational

system, the press, the stage, the radio, and the churches, under the supervision of a paternal government, to call upon social engineers to channel thought and condition feeling, and to hold in reserve the implements that discipline refractory minds and tongues. For common sense eclecticism is incapable of criticizing common sense. It is not only by discouraging theoretical understanding that the polymorphism of human consciousness can be grasped, and it is not by appealing to what common sense finds obvious that the correct meaning of such terms as reality, knowledge, and objectivity is to be reached.

4.5 Dialectic

Whether one considers the deductive methods that offer to function automatically or the guiding methods that rest on the conviction that the subject cannot be ignored, one is forced to the conclusion that philosophic method must concern itself with the structure and the aberrations of human cognitional process. Abstract deduction yields to concrete; the use of concrete deduction raises the question of its own possibility; and that possibility is found to lie in the genesis of a wisdom that is prior to metaphysics. Universal doubt heads for the same emptiness as abstract deduction; empiricism seeks the concrete in the obvious manner that proves mistaken in almost every respect; and a common sense use of judgment leaves philosophy obtuse, superficial, and divided. Might one not conclude, then, that the method of philosophy lies in this very process that turns positions into their contradictories only

to discover in such reversal a new position that begets its opposite to bring to birth a third position with similar consequences until through successive repetitions the totality of positions and opposites forms a dialectical whole? Such, approximately, was Hegel's inspiration, and since I venture to employ his term, dialectic, I feel constrained to list the differences that separate his notion from my own.

In the first place, then, Hegelian dialectic is conceptualist, closed, necessitarian, and immanental. It deals with determinate conceptual contents; its successive triadic sets of concepts are complete: the relations of opposition and sublation between concepts are pronounced necessary; and the whole dialectic is contained within the field defined by the concepts and their necessary relations of opposition and sublation. In contrast, our position is intellectualist, open, factual, and normative. It deals not with determinate conceptual contents but with heuristically defined anticipations. So far from fixing the concepts that will meet the anticipations, it awaits from nature and from history a succession of tentative solutions. Instead of binding these solutions by necessary relations, it regards them as products of a cumulative succession of insights and it claims that the succession follows neither a unique nor a necessary path; for identical results can be reached by different routes, and besides valid developments there are aberrations. Finally, the appeal to heuristic structures, to accumulating insights, to verdicts awaited from nature and history, goes outside the conceptual field to acts of

understanding that rise upon experiences and are controlled by critical reflection; and so instead of an immanental dialectic that embraces all positions and their opposites, ours is a normative dialectic that discriminates between advance and aberration.

The foregoing differences have a common source. Hegel endeavors to pour everything into the concept; while we regard concepts as by-products of the development of understanding and place understanding itself in an intermediate role between experience and critical reflection. It follows that, what Hegel is bound to regard as conceptual, we can interpret quite differently. Thus, Hegel's notion of being is a minimum conceptual content that topples over into nothing, but our notion of being is the all-inclusive heuristic anticipation issuing from an unrestricted desire to know. Hegel's dialectical opposition is a contradiction within the conceptual field, but our dialectical opposition is the conflict between the pure desire to know and other human desires. Hegel's sublation is through a reconciling third concept, but our development is both the accumulation of insights moving to higher viewpoints and the reversal of the aberrations that were brought about by the interference of alien desire. Hegel's absolute is a terminal concept that generates no antithesis to be sublated in a higher synthesis; we recognize a manifold of instances of the virtually unconditioned, and through them attain knowledge of proportionate being in its distinctions and relations. Hegel's concrete is an integrated whole of determin-

ate conceptual contents, but our concrete is a prospective totality to be known by answering correctly the totality of questions for intelligence and for reflection. Hence it is that Hegel's dialectic is a universal and undifferentiated tool: it is relevant in the same manner within logic, within nature or science, and within the realm of spirit. Our dialectic is a restricted and differentiated tool: it is relevant to human knowledge and to human activities that depend upon knowledge; it admits separate application to psycho-neural problems, to the historical expansion of practical common sense, to the diversity of philosophic methods and systems; but it does not lie within logic but rather regards the movement from one logically formalized position to another; and it has no relevance to purely natural process.

Finally, from a genetic standpoint, Hegel's dialectic has its origins in the Kantian reversal both of the Cartesian realism of the res extensa and of the Cartesian realism of the res cogitans; but where Kant did not break completely with extroversion as objectivity, inasmuch as he acknowledged things themselves that, though unknowable, caused sensible impressions and appeared, Hegel took the more forthright position that extroverted consciousness was but an elementary stage in the coming-to-be of mind; where Kant considered the demand of reflective rationality for the unconditioned to provide no more than a regulative ideal that, when misunderstood, generates antinomies, Hegel affirmed an identification of the real with a rationality that

moved necessarily from theses through antitheses to higher syntheses until the movement exhausted itself by embracing everything: where Kant had restricted philosophy to a critical task, Hegel sought a new mode, distinct from Cartesian deductivism, that would allow philosophy to take over the functions and aspirations of universal knowledge. In contrast, we affirm the realism of the res cogitans for human knowing and the realism of the res extensa for elementary knowing; while the two realities as realities may be coincident, the two knowings must be distinguished and kept apart; and it is failure to keep them apart that originates the component of aberration in our dialectic of philosophy. Hence, we break completely from mere extroverted consciousness, not because it is illusory, but because it is confusing and philosophically irrelevant. At the same time, a more thorough and precise account of human knowing enables us to eliminate the rigidity of the Kantian a priori, to uncover a grasp of the unconditioned as essential to judgment, to identify the notion of being with the drive of intelligent inquiry and critical reflection, to define metaphysics by the integral heuristic structure of this drive, and so to conceive philosophy as universal knowledge without infringing upon the autonomy either of empirical science or of common sense. Finally, as will appear shortly, this procedure yields a metaphysics that brings to contemporary thought the wisdom of the Greeks and of the medieval Schoolmen, as reached by Aristotle and Aquinas, but purged of every trace of antiquated science, formulated to integrate not only the science of the present but also of the future, and elaborated in accord with a method that makes it possible

to reduce every dispute in the field of metaphysical speculation to a question of concrete psychological fact.

4.6 Scientific Method and Philosophy

As there is nothing to prevent a scientist from being a man of common sense, so there is nothing to prevent him from being a philosopher. Indeed, the scientist's dedication to truth and his habituation to the intellectual pattern of experience are more than a propaedeutic to philosophy: and if every mind by its inner unity demands the integration of all it knows, the mind of the scientist will be impelled all the more forcibly to proceed to that integration along a course that is at once economical and effective.

In the past, the philosophic appetite of scientists was satisfied ~~enough~~ with a scientific monism. The philosophies were regarded as misguided efforts to attain the knowledge that science alone can bestow. Common sense was considered a mere ignorance that the advance of science and the legal enforcement of universal education soon would eliminate. In this fashion, the integration of human knowledge was identified with the unification of the sciences, and that unification was obtained by the simple device of proclaiming that objectivity was extroversion, knowing was taking a look, and the real was a subdivision of the "already out there now". It followed that the universe consisted of imaginable elements linked together in space and time by natural laws; because the elements were imaginable, the universe was mechanist; because the laws were ne-

cessary, the mechanism was determinist. Mechanics, then, was the one science, and thermodynamics, electromagnetism, chemistry, biology, psychology, economics, politics, and history were just so many provisional, macroscopic views of a microscopic reality. Finally, to add a note on method, it was unsuspected that there was involved an extra-scientific supposition in the pronouncement on the meaning of objectivity, knowledge, and reality. That was far too obvious to be questioned. It followed that to doubt mechanist determinism was to doubt the validity of the sciences, and so doubters were summoned to explain which of the methods or conclusions of the sciences they thought to be mistaken.

From the incubus of this fallacy, the more recent development of the sciences has been effecting a salutary liberation. Darwin introduced a type of explanation that had its basis not in necessary laws but in probabilities. Freud, despite his ~~personal loyalty to~~ involvement in mechanist determinism, established the concept of psychogenic disease. Einstein removed the space and time in which the imaginable elements were imagined to reside. Quantum mechanics removed from science the relevance of any image of particles, or waves, or continuous process. No less than his predecessors, the contemporary scientist can observe and experiment, inquire and understand, form hypotheses and verify them. But unlike his predecessors, he has to think of knowledge, not as taking a look, but as experiencing, understanding, and judging: he has to think of objectivity, not as mere extroversion, but as experiential, normative, and tending towards an absolute: he has to think of the real, not as a part of

the "already out there now", but as the verifiable. Clearly, the imagined as imagined can be verified only by actual seeing, and so there is no verifiable image of the elements of mechanism. Moreover, what science does verify, does not lie in any particular affirmations, which are never more than approximate; what science verifies is to be found in general affirmations, on which ranges of ranges of particular affirmations converge with an accuracy that increases with the precision of measurements and with the elimination of probable errors.

Still, this is only one aspect of the matter. Scientific monism not only identified science with philosophy but also concluded that the method of science must be the method of philosophy. While this implication cannot be challenged as long as its premiss stands, the break-down of the premiss cannot be expected to transform the long-established habits of mind that were generated and nourished by the conclusion. Only through a positive accumulation of new insights can scientists be expected to grasp the differences between the methods of empirical science and the method that must be followed if the detached and disinterested desire to know is to attain an integrated view of the universe. Accordingly, though most of the present book bears on this issue, it will not be amiss, I think, to indicate and to explain briefly the differences of method that commonly lead scientists to find philosophy baffling, repellent, or absurd.

The basic difference is that scientific method is prior to scientific work and independent of particular scientific results, but philosophic method is coin-

cident with philosophic work and so stands or falls with the success or failure of a particular philosophy. This difference leads the scientist to conclude that it is nonsense to talk about a philosophic method and that the plain fact is that philosophy has no method at all. Now if there is no use disputing about names, there is a point to understanding just where differences lie. At least in a generalized sense, there is a method if there is an intelligible set of directives that lead from a starting-point, that may be assumed, to a goal that is to be obtained. In this generalized sense, both science and philosophy possess method. In a specialized sense, there is a method if the same intelligible set of directives will lead to a variety of different goals. In this specialized sense, science has a method and philosophy has not. The first reason for this difference is that there are many particular sciences and each of them deals with a variety of objects, but there is only one integrated view of one universe and so there is only one set of directives that lead to it. The second reason for the difference is that the sciences are concerned to assign determinate conceptual contents to fill empty heuristic structures, so that the same method leads successively to a series of different determinations; on the other hand, philosophy obtains its integrated view of a single universe, not by determining the contents that fill heuristic structures, but by relating the heuristic structures to one another. Because of these differences in their objectives, scientific method stands to scientific conclusions as a genetic universal to generated particulars, but

philosophic method stands to philosophic conclusions as the genesis to the attainment of a single, all-inclusive view.

In the second place, scientists are repelled by the failure of philosophers to reach a single, precise, universally accepted, technical language. They point out the simplicity of this device and the enormous benefits it has conferred on science. They lament the obtuseness of philosophers in overlooking so necessary a procedure, and they deplore their wrong-headedness in clinging to equivocal and even literary usage. Perhaps, however, they will grant that the desired technical language of philosophy must be compatible with the problems of philosophy. It would be absurd to demand that modern chemists express their thought in terms of Aristotle's four elements, and similarly it would be absurd to provide philosophers with a language that was incapable of expressing their thought. Further, the polymorphism of human consciousness seems relevant to the problems of philosophy, for philosophy is concerned with knowledge, reality, and objectivity, and these terms take on different meanings as consciousness shifts from one pattern or blend of patterns of experience to another. But the meaning of every other term changes with changes in the meaning of the terms, knowledge, reality, objectivity, for the function of all language is to express presumptive knowledge of presumptive reality and affirm or deny the objectivity of the knowledge. Accordingly, the fundamental task in working out an appropriate technical language for philosophy would be to explore the range of meanings that may be assumed by

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the basic variables, knowledge, reality, and objectivity. There would follow the complementary task of selecting the range of different combinations of particular values of the three basic variables and of showing how each combination modified the meaning of the remaining terms of philosophy. This, of course, would be a lengthy procedure and allowance would have to be made for differences of opinion on the manner in which variations in the basic combinations modified the meaning of the remaining terms. # Finally, two further points must be mentioned. There would be the problem of discovering what logicians call the meta-language in which one would express with technical accuracy just what is meant by the polymorphism of human consciousness, and by different meanings in the ranges of the basic variables. There also would be the difficulty of explaining to people as they are before they begin philosophy just what is meant by the terms and syntax of this meta-language and, at the same time, of convincing them, as well as those with philosophic opinions of a different color and shade, that the polymorphism of human consciousness is the one and only key to philosophy. It would seem that this preliminary task would have to be conducted in literary language despite its equivocations: and as the performance of the preliminary task has to be adapted continuously to the changing mentality of successive generations, it seems unlikely that a philosophy, which integrates the personal knowledge of living and changing minds, will ever be able to wrap itself completely in the restful cocoon of a technical language.

In brief, while enormous advantages are to be derived from a technical language in exploiting what is already known, the problems of contemporary philosophy are not problems of exploitation.

A third difficulty of scientists, when they turn to philosophic problems, is psychological. We are accustomed to think of scientists as pioneers in a novel and daring adventure of exploration, but the fact is that modern science has had four centuries in which to develop a traditionalist mentality. Again, there is a screening ambiguity to contemporary usage of the word, belief. If a moron reads in his newspaper that energy is equal to the product of the mass by the square of the velocity of light, we are not inclined to say that his acceptance is mere belief, for after all what Science says is not belief but knowledge. However, if we care to be accurate, the difference between knowledge and belief lies not in the object but in the attitude of the subject. Knowing is affirming what one correctly understands in one's own experience. Belief is accepting what we are told by others on whom we reasonably rely. # Now every conclusion of science is known by several scientists, but the vast and cumulative collaboration of the scientific tradition would be impossible if every conclusion of science had to be known by every scientisit. For each science is an extensive array of elements of information and correlation, and the scientific attitude is not to spend one's life checking over what was settled by one's predecessors but to proceed from this basis to further discoveries.

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The theoretical and practical training of a scientist aims at bringing him abreast of present knowledge and enabling him to carry on the work. He must understand how information was acquired, what type of evidence went to the determination of definitions, formulae, constants, systems, how he might test and, if need should arise, successfully challenge past or current views. But no effort is made to enable each scientist to recapitulate within his own experience, understanding, and reflection, the whole development of the science. On the contrary, the effort that is made is to convince him how reasonably he may rely on past results; on the one hand, there are the specimens of scientific method that he witnesses in class demonstrations and, more intimately, in his own laboratory work; and on the other hand, there is the general argument that, whatever is wrong in any accepted view, will come to light sooner or later, not by reliving the past, but by using it as a premise for further investigation. Belief, then, is an essential moment in scientific collaboration. It is variable in its extent. It is provisional. It is subject to checking and control. It is quite reasonable. But the reasonableness of belief does not make it knowledge, and the extent, to which belief is essential in the scientific tradition, disposes and conditions the minds of scientists in a manner that ill equips them for philosophy.

For while philosophy has had its traditional schools from the days, it seems, of Pythagoras, still the schools have proliferated. Instead of a single tradition with distinct departments as in science, philosophy has been

a cumulative multiplication of distinct and opposed traditions. Nor is there anything surprising about this contrast. For in science a single method operates towards a variety of different goals, but in philosophy a single all-inclusive goal is sought by as many different methods as arise from different orientations of the historically developing but polymorphic consciousness of man. Hence, while a scientist is reasonable in entering into the scientific tradition and carrying on its work, a philosopher cannot be reasonable on the same terms; he has to become familiar with different traditions; he has to find grounds for deciding between them; and it is the reasonableness of that decision on which will rest the reasonableness of his collaboration within any single tradition. It follows that, while the reasonableness of each scientist is a consequence of the reasonableness of all, the philosopher's reasonableness is grounded on a personal commitment and on personal knowledge. For the issues in philosophy cannot be settled by looking up a handbook, by appealing to a set of experiments performed so painstakingly by so-and-so, by referring to the masterful presentation of overwhelming evidence in some famous work. Philosophic evidence is within the philosopher himself. It is his own inability to avoid experience, to renounce intelligence in inquiry, to desert reasonableness in reflection. It is his own detached, disinterested desire to know. It is his own advertence to the polymorphism of his own consciousness. It is his own insight into the manner in which insights accumulate in mathematics, in the empirical sciences,

in the myriad instances of common sense. It is his own grasp of the dialectical unfolding of his own desire to know in its conflict with other desires that provides the key to his own philosophic development and reveals his own potentialities to adopt the stand of any of the traditional or of the new philosophic schools. Philosophy is the flowering of the individual's rational consciousness in its coming to know and take possession of itself. To that event, its traditional schools, its treatises, and its history are but contributions; and without that event they are stripped of real significance.

It is this aspect of personal development and personal commitment that the scientist turning to philosophy is, perhaps, most likely to overlook. Spontaneously, he will be attracted by the range of recent philosophies that rest on the successive attempts to formulate a symbolic logic, for a deductivism offers the security of an impersonal and automatically expanded position. Spontaneously, he will seek a new integration of the sciences in works written by individual scientists or by commissions of scientists, for he is accustomed to believing scientists and hopes for a new philosophy that can be named not philosophy but science. In the light of his antecedents, such tendencies are explained easily enough, but the explanation does not reveal them to be reasonable. As has been seen, the attractions of deductivism have been felt before, and abstract deductivism proved to be empty, concrete deductivism turned out to beg the question, and transcendental deductiv-

ism revealed itself too crude an instrument to deal with the complexity of developing intelligence. Nor can any hope be entertained that the unification of the sciences will be effected correctly because it is the work of scientists. They are not made of a different clay from mere philosophers. They are not exempt from the polymorphism of human consciousness. They are not to be expected to escape involvement in the ambiguities that reside in such terms as knowledge, reality, objectivity.

To conclude, philosophy has been fertilized repeatedly by scientific achievement. But it would seem a mistake to expect that philosophy should conform to the method, to the linguistic technique, or to the group mentality of the scientist. The contribution of science and of scientific method to philosophy lies in a unique ability to supply philosophy with instances of the heuristic structures which a metaphysics integrates into a single view of the concrete universe.