

INSIGHT.

Introduction.

The aim of the present work may be bracketed by a series of disjunctions. In the first place, the question is not whether knowledge exists but what precisely is ~~the nature~~ its nature. Secondly, while the content of the known cannot be disregarded, still it is to be treated only in the schematic and incomplete fashion needed to provide a discriminant or determinant of cognitive acts. Thirdly, the aim is not to set forth a list of the abstract properties of human knowledge but to assist the reader in effecting a personal appropriation of the concrete, dynamic structure immanent and ^{recurrently} operative in his own cognitional activities. Fourthly, such an appropriation can occur only gradually, and so there will be offered, not a sudden account of the whole of the structure, but a slow assembly of its elements, relations, alternatives, and implications. Fifthly, the order of the assembly ~~begins~~ is ^{abstract} governed, not by considerations of logical or metaphysical priority, but by concrete motives of pedagogical efficacy.

~~To expand each of these disjunctions in turn, we may begin by noting that the question whether there is knowledge can be no more significant than the least significant item known in the whole of knowledge.~~

The program, then, is both concrete and practical, and the motives for undertaking its execution reside, not in the realm of easy generalities, but in the difficult domain of matters of fact. If, at the end of the ~~course~~ course, the reader will be convinced of those facts, much will be achieved; but

at the present moment all I can do is to clarify my intentions by stating my beliefs. I ask, accordingly, about the nature rather than about the existence of knowledge because in each of us there exist two different kinds of knowledge. They are juxtaposed in Cartesian dualism with its rational "Cogito, ergo sum" and with its unquestioning extroversive to substantial extension. They are separated and alienated in the subsequent rationalist and empiricist philosophies. They are brought together again to cancel each other in Kantian criticism. If these statements approximate to the facts, then the question of human knowledge is not whether it exists but what precisely are its two diverse forms and what are the relations between them. If that is the relevant question, then any departure from it is, in the same measure, the misfortune of missing the point. But whether or not that is the relevant question, can be settled only by undertaking an arduous exploratory journey through the many fields in which ~~men~~ men succeed in knowing or attempt the task but fail.

Secondly, an account of knowing cannot ~~disregard~~ disregard its content, and ~~its~~ its content is so extensive that ~~it is divided~~ it mocks encyclopedias and over-flows libraries; its content is so difficult that a man does well devoting his life to mastering some part of it; yet even so ^{its content} ~~it~~ is incomplete and subject to further additions, inadequate and subject to repeated, future revisions. Does it not follow that the proposed exploratory journey is, not merely arduous, but impossible? Certainly it would be impossible, ~~if not for the reader,~~ at least for the writer, if an acquaintance with

the whole range of knowledge were a requisite in the present inquiry. But, in fact, our primary concern is not the known but the knowing. In the known there are strategic instances that will call for careful investigation. But the instances will be strategic precisely in the measure that further instances of mathematical thought, of scientific method, of common sense procedures, will be seen to add involve no significant additional procedures, will be seen to advance, not knowledge of knowledge, but knowledge of mathematics, of science, and of the concrete world in which men live.

but the knowing. The known is extensive, but the knowing is a recurrent structure that can be investigated sufficiently in a series of strategically chosen instances. The known is difficult to master, but in our day competent specialists have labored to select and present to serious readers have labored to select for serious readers and to present to them in an adequate fashion the basic components of the various departments of knowledge. Finally, the known is incomplete and subject to revision, but our concern is the knower that will be the source of the future additions and revisions.

It will not be amiss to add a few corollaries, for nothing so disorientates a reader than a failure to state clearly what a book is not about. Basically, then, this is not a book on mathematics, nor a book on science, nor a book on common sense, nor a book on metaphysics; indeed, in a sense, it is not even a book about knowledge. On a primary level, the book contains sentences on mathematics, on science, on common sense, on metaphysics. On a secondary level, the meaning of all these sentences, their intention and significance, are to be grasped only by going beyond

the scraps of mathematics or science or common sense or metaphysics to the dynamic, cognitional structure that is exemplified in knowing them. On a third level, the dynamic, cognitional structure to be reached is not the ~~transcendental~~ transcendental ego of Fichtean speculation, nor the abstract pattern of relations verifiable in Tom and Dick and Harry, but the personally appropriated structure of one's own experiencing, one's own intelligent inquiry and insights, one's own critical reflection and judging and deciding. The crucial issue is an experimental issue, and the experiment will be performed not publicly but privately. It will consist in one's own rational self-consciousness clearly and distinctly taking possession of itself as rational self-consciousness. Up to that decisive achievement, all leads. From it, all follows. No one else, no matter what his knowledge or his eloquence, no matter what his logical rigor or his persuasiveness, can do it for you. But though the act is private, both its antecedents and its consequents have their public manifestation. There can be long series of marks on any paper that communicate an invitation to know oneself in the tension of by that duality of one's own knowing; and among such series of marks with an invitatory meaning the present book ~~is~~ would be numbered. Nor is ~~will~~ it any secret whether such invitations are ~~accepted~~ helpful or, when helpful, accepted. For winter twilight cannot be mistaken for the summer noon-day sun.

In the third place, then, more than all else
~~More than all else, then,~~ the aim of the book

is to issue an invitation to a personal, decisive act. But the very nature of the act demands that it be understood in itself and in its implications. What on earth is meant by rational self-consciousness? What is meant by inviting it

to take possession of itself? Why is such self-possession said to be so decisive and momentous? The questions are perfectly legitimate, but the answer cannot be brief.

However, it is not the answer itself that counts so much as the manner in which it is read. For the answer ~~can~~ cannot but be written in words; the words cannot but proceed from definitions and correlations, analyses and inferences; yet the whole point of the present answer would be missed if a reader insisted on concluding that I must be engaged in setting forth lists of abstract properties of human knowing. ~~Just as my words proceed from my conceptual formulations, just as my conceptual formulations proceed from my insights, so too any reader that understands what is said can go beyond the unnoticed fact that he is understands understanding to discover and identify in his present or his pre past experience the occurrence of insights~~

The present work is not to be read as though it described some distant region of the globe, which the reader never visited, or some strange and mystical experience, which the reader never shared. It is an account of knowledge. Though I cannot recall to each reader his personal experiences, he can do so for himself and thereby pluck my general phrases from the dim world of ~~my~~ thought to ~~illuminate~~ the pulsing flow of life. Again, in such fields as mathematics and natural science it is possible to delineate with some accuracy the precise content of a precise insight; but the point to the delineation is not to provide the reader with a stream of words that he can repeat to others or with a set of terms and relations from which he can proceed to draw inferences and prove conclusions. On the contrary the point here as ~~elsewhere~~ elsewhere is appropriation; the point is to

discover, to identify, to become familiar with the activities of one's own intelligence; the point is to become able to discriminate with ease and from personal conviction between one's purely intellectual activities and the manifold of other, "existential" concerns that invade and mix and blend with the operations of intellect to render it ambivalent and its pronouncements ambiguous.

At this ~~point~~ juncture, however, many a potential reader will expostulate. The illustrations offered in the first five chapters ~~are not taken from~~ do not lie within the orbit of his interests. Intelligence and reasonableness are marks common to all instances of homo sapiens. But my initial concentration on mathematics and natural science seem unduly to narrow the effective range of the invitation that I issue to an appropriation of one's own rational self-consciousness.

~~Perhaps the most appropriate~~

Perhaps an explanation of the motives that guided my decision in this matter will serve, not only to explain my procedure, but also to enable each reader to estimate for himself the measure in which the earlier chapters have to ^{be} understood if ^{he} one is to be in a position to ~~pass~~ profit from the book as a whole. In the first place, it is essential that the notion of insight, of the accumulation of insights, of higher viewpoints, and of their heuristic ~~signi-~~ significance and implications, not only should be grasped clearly and distinctly but also, in so far as possible, should be identified in one's personal intellectual experience. The precise nature of such an identification will be clarified in the chapter on Self-affirmation for, as seems clear, ~~there~~

~~can be attached, more easily than not.~~

it is both easy and common to conceive introspection and intellectual experience in a fashion that, when submitted to scrutiny, ~~proves~~ proves to be meaningless. Still, if that account of the levels of consciousness is to be intelligible, it has to be preceded by a grasp, both precise and firm, of the successive types of activity that serve to mark and to define the successive levels of consciousness. In turn, if one's apprehension of those activities is to be clear and distinct, then one must prefer the fields of intellectual endeavor in which the greatest care is devoted to exactitude and, in fact, the greatest exactitude is attained. Thus,

~~while I would not only admit but also contend that insights and their accumulation, shifting viewpoints and heuristic procedures, may be illustrated from the ordinary use of intelligence named common sense, I also would be obliged to add~~

For this reason, then, I have felt obliged to begin my account of insight and its expansion with mathematical and scientific illustrations and, while I would grant that ~~essentially~~ essentially the same activities can be illustrated from the ordinary use of intelligence that is named common sense, I must also submit that it would be impossible for common sense to grasp and say what precisely common sense ~~happens~~

^{happens} ~~happens~~ to illustrate.

But further considerations are no less operative. For the present enterprise is concerned to unravel an ambiguity and to eliminate an ambivalence. St. Augustine of Hippo narrates that it took him years to make the ~~discovery~~ discovery that the name, real, might have a different connotation from

the name, body. Or, to bring the point nearer home, one might say that it has taken modern science ~~for~~ four centuries to make the ~~what~~ discovery that the objects of its inquiry need not be imaginable entities moving through ~~imaginable processes~~ imaginable processes in an imaginable space-time. The fact that a Plato attempted to communicate through his dialogues, the fact that an Augustine eventually learnt from the writers whom, rather generically, he refers to as Platonists, has lost its antique flavor and its apparent irrelevance to the modern mind. Even before Einstein and Heisenberg it was clear enough that the world described by scientists was strangely different from the world depicted by artists and inhabited by men of common sense. But it was left to twentieth century physicists to envisage the possibility that the objects of their science were to be reached only by severing the umbilical cord that tied them to the maternal imagination of man.

new paragraph

As the reader will have ~~divid~~ divined, the relevance of mathematics and mathematical physics to the present investigation is not only the transference of their clarity and precision to ~~my~~ ^{the} account of insight but also the significance of the transition from the old mechanism to relativity and from the old determinism to statistical laws. In earlier periods the thinker that would ~~come to grips with his thinking could appeal to what M. Gilson would call the historical experience of philosophy.~~ ~~would call the experiment of history in philosophy.~~ ~~to~~ come to grips with his thinking could ~~appeal~~ be aided by the dialogues of Plato and, on a more recondite level, he could appeal to what M. Gilson would call the experiment of history in ancient, medieval, and modern philosophy. But today there ~~is~~ ^{are} at his disposal both the exactitude and the impressive scale

of a complementary historical experiment that began with the blending of scientific principles and philosophic assumptions in Galileo and has ended with their sharp segregation in our own day. What a Plato labored to communicate through the effort in appropriation of his ~~artistic~~ artistic dialogues, what the intelligence of an Augustine only slowly mastered in the throes of a religious conversion, what led a Descartes to a method of universal doubt and prompted a Kant to undertake a critique of Pure Reason, has cast a ~~no less momentous~~ shadow, no less momentous but far more sharply defined, in the realm of exact science. Clearly it would be foolhardy for a contemporary effort to resolve the duality in man's knowledge, to ignore, if not the most striking, at least the most precise element in the evidence available on the issue.

~~But there is also a third purpose that I hope to achieve through an appropriation of the modes of scientific thought. What, in my opinion, was meant originally by the abstraction of form from material conditions, what ~~later~~ ~~Descartes~~ Descartes later was struggling to convey in his incomplete Regulae ad directionem ingenii, what Kant conceived as a priori synthesis, what the scientist refers to when he affirms his reliance to be placed on scientific method itself rather than on contemporary scientific conclusions, falls into the unity of a single perspective when formulated as heuristic structure.~~

But there is also a third purpose that I hope to achieve through an appropriation of the modes of scientific thought. For such thought is methodical and the scientist pins his faith, not on this or that scientific system or conclusion, but on the validity of scientific method itself. But what ultimately is the nature and ground of method but a reflective grasp and specialized application of the object of our inquiry, namely, of the dynamic structure immanent and recurrently operative in human cognitional activity? It follows that empirical science as methodical not merely offers a clue ~~but also~~ ~~exhibits an instance of the larger, multiform dynamism that we are seeking to explore~~

for the discovery but also exhibits concrete instances for the examination of the larger, multiform dynamism that we are seeking to explore. Accordingly, it will be from the structural and dynamic features of scientific method that we shall approach and attempt to cast into the unity of a single perspective such apparently diverse elements as ~~1) the point~~

1) Plato's point in asking how the inquirer recognizes truth when he reaches what, as an inquirer, he did not know, 2) the intellectualist (though not the conceptualist) meaning of the abstraction of form from material conditions, 3) the psychological manifestation of Aquinas' natural desire to know God by his essence, 4) what Descartes was struggling to convey in his incomplete Regulae ad directionem ingenii, 5) what Kant conceived as a a priori synthesis, and 6) what is named the finality of intellect in J. Maréchal's vast labor on Le Point de Départ de la Métaphysique.

I have been insisting on the gravity of the motives that led me to begin this essay in aid of self-appropriation with a scrutiny of ~~the~~ mathematical physics. But if I am to avoid a over-statement, I must hasten to add ~~that their significance is psychological rather than logical~~ that the significance of the scrutiny is, so to speak, psychological rather than logical. For the present work falls into two parts. In the first part, insight is studied as an activity, as an event that occurs within various patterns of ~~of~~ other related events. In the second part, insight is studied as knowledge, as an event that, under determinate conditions, reveals a universe of being. The first part deals with the question, What is happening when we are knowing? The second part moves to the question, What is known when that is happening? Were there no psychological problem, the first part could be reduced to sets of definitions and clarifications for, from a logical viewpoint, the first judgment that occurs in the whole work is the judgment of self-affirmation in the eleventh chapter. But the hard fact is that the psychological problem exists, that there exist in man two diverse kinds of knowing, that they exist without differentiation and in an ambivalent confusion until they are distinguished explicitly and the implications of the distinction are drawn explicitly. The hard fact is that the ^{personal} psychological problem cannot be solved by the ordinary procedure of affirming the propositions that are true and denying the propositions that are false, for the true meaning of the true propositions always ^{tends to be} ~~is~~ misapprehended by a ~~deeper~~ consciousness that has not yet discovered its need of discovering what an Augustine took years and modern science centuries to discover.

It remains that something be said on the last two of the five disjunctions by which we proposed to bracket the aim of this book. As has been said, we are concerned not with the existence of knowledge but with its nature, not with what is known but with the structure of the knowing, not with the abstract properties of cognitional process but with a personal appropriation of one's own dynamic and recurrently operative structure of cognitional activity. There is now to be explained the fourth disjunction, for the labor of self-appropriation cannot occur at a single leap. Essentially, it is a development of the subject and in the subject and, like all development, it can be solid and fruitful only by being pains-taking and slow.

Now it would be absurd to offer to aid a process of development and yet write as though the whole development were already an accomplished fact. A teacher of ~~such~~ geometry may be convinced that the whole of Euclid is contained in the theory of the n-dimensional manifold of any curvature. But he does not conclude that Euclid is to be omitted from the High School program and that his pupils should begin from the tensor calculus. For even though Euclid is a particular case, still it is the particular case that alone gives access to the general case. And even though Euclidean propositions call for ~~qualification~~ qualification when the more general context is reached, still an effective teacher does not distract his pupils with qualifications they will understand only vaguely, when it is his business to herd them, as best he can, across the pans asinorum.

In similar fashion this book is written, not from above downwards, but from below upwards. Any coherent set of statements can be divided into definitions, postulates, and

conclusions. But it does not follow that between the covers of a single book there must be a single coherent set of statements. For the single book may be written from a moving viewpoint, and then it will contain, not a single set of coherent statements, but a sequence of related sets of coherent statements. Moreover, as is clear, a book designed to aid a development must be written from a moving viewpoint. It cannot begin by presupposing that a reader can assimilate at a stroke what ~~is~~ can be attained only at the term of a prolonged and arduous effort. On the contrary, it must begin from a minimal viewpoint and a minimal context; it will exploit that minimum to raise a further question that enlarges the viewpoint and the context; it will proceed with the enlarged viewpoint and context only as long as is necessary to raise still deeper issues that again transform the basis and the terms of reference of the inquiry; and, clearly, this device can be repeated not merely once or twice but as often as may be required to reach as the universal viewpoint and ~~y~~ the completely concrete context that embraces every aspect of reality.

However, if this procedure alone is adapted to the aim of the present work, I must beg to stress, once and for all, that its implications are not to be overlooked. If Spinoza wrote his Ethics in what, in his day, was thought to be the geometric style, it is not to be inferred that I am endeavoring to walk in his footsteps, that I never heard of Gödel's theorem, that I am not operating from a moving viewpoint that successively sets up contexts only to go beyond them. If the inference is not to be made, the further implications of such an inference are not to be assumed. The premisses from which my own position

can be deduced are not complete in the first section of the first chapter when a brief description endeavors to fix the meaning of the name, insight. The context is enlarged but not completed when a study of mathematical development makes the notion of insight more precise. There is the broader context of a mathematized world of events that has appeared by the end of the fifth ~~chapter~~ chapter, but it has to be included within the still fuller context of the world of common sense to be depicted in ~~chapters~~ chapters six and seven. The eighth ~~chapter~~ chapter adds things, which, though previously disregarded, never were denied. The ninth and tenth chapters add reflection and judgment, which neither were excluded from earlier considerations nor, on the other hand, ^{were they} capable of making a systematic entry. In the eleventh chapter there occurs the first judgment of self-affirmation but only in the twelfth chapter is it advanced that ^{that} the judgment is knowledge and only in the ~~the~~ thirteenth is it explained in what sense such knowledge is to be named objective. The four chapters on metaphysics ^{follow} to sweep all that has been seen ~~up~~ into the unity of a larger perspective, only to undergo a similar fate, first, in the account of general transcendent knowledge and, again, in the approach to special transcendent knowledge.

Clearly, then, if anyone were to offer to express my meaning within a briefer compass than I have been able to attain, he must bear in mind that earlier statements are to be qualified and interpreted in the light of ~~my~~ later statements.

~~Now is this all, for I have not been able to reach within these pages the ultimate statements that govern the meaning of my last statements~~

Nor is this all. For already it has been pointed out that the present work is concerned with the known only in the schematic ~~form~~ and incomplete fashion ~~needed~~ that is needed to clarify the nature and ^{affirm the} existence of different departments of knowing. This extremely general qualification has to be combined with the qualification of earlier statements by later and, I suggest, the combination can be effected systematically in the following manner.

Gödel's theorem is to the effect that any set of definitions and postulates gives rise to further questions that cannot be answered on the basis of the definitions and postulates. Consider, then, a series of sets of definitions and postulates, say P, Q, R, ... such that, if P is assumed, there arise questions that can be answered only by assuming Q, if Q is assumed, there arise questions that can be answered only by assuming R, and so forth. Then besides the successive lower contexts, P, Q, R, ... there is also the upper context in which Gödel's theorem is expressed. Moreover, inasmuch as the theorem is quite general, ~~it~~ ^{the upper context} is independent of the content of any particular contexts such as P, Q, R, ... Finally, since there is no last, ~~the~~ lower context that is definitive, since R will demand a context S, and S a context T, and T a context U, and so on indefinitely, the really significant context is the upper context; all lower contexts, P, Q, R, S, T, U, ... are provisional; and they attain a definitive significance only in the measure that they give access to the upper context.

~~Now let P denote our initial context in which we assign a meaning to the name, insight. Let Q denote our next context in which we study mathematical insights. Let R denote the subsequent context concerned with the insights~~

Now let us go beyond Gödel's theorem, not in the direction of greater abstractness, but in the direction of greater concreteness, and not to greater concreteness on the side of the object (which is vast and difficult and ^{open} ~~subject~~ to further additions and revisions) but to greater concreteness on the side of the subject. Besides the noëma or intencio intenta or pensée pensée, illustrated by the lower contexts, P, Q, R, ... and by the upper context that is Gödel's theorem, there also is the noësis or intencio ~~the~~ intendens or pensée pensante that inquires and reflects, understands and affirms, not only the lower contexts, P, Q, R, ... and the upper context that is ~~Gödel's~~ Gödel's theorem but also its own activity of inquiring and reflecting, understanding and affirming, asking further questions and reaching more nuanced answers. Clearly pensante that is constituted by the very activity of inquiring and reflecting, understanding and affirming, asking further questions and reaching further answers. Let us say that this noetic activity is engaged in a lower context when it is doing mathematics or following scientific method or exercising common sense. Then it will be moving towards an upper context when it scrutinizes mathematics or science or common sense in order to grasp the nature of noetic activity. And if it comes to understand and affirm what it is to understand and affirm, then it has reached an upper context that logically is independent of the ~~scaffolding~~ scaffolding of mathematics, science, and common sense. Moreover, if it can be shown that the upper context is invariant, that any attempt to revise it can be legitimate only if the ~~reviser~~ hypothetical reviser refutes his own attempt by invoking experience, understanding, and reflection in the already prescribed manner, then it will appear that, ~~wh~~ while

the noêma or intentio intenta or pensée pensée may always be expressed with greater accuracy and completeness, still the immanent and recurrently operative structure of the noêsis or intentio intendens or pensée pensante must always be one and the same.

In other words, not only are we writing from a moving viewpoint but also we are writing about a moving viewpoint. Not only are earlier statements to be qualified by later statements, but also the later qualification is to the effect that earlier statements tend to be mere scaffolding that can be subjected to endless revision ^{without} ~~with~~ implying the necessity of any revision of one's appropriation of one's own intellectual and rational self-consciousness.

In the fifth place, to turn to the final disjunction, the order in which the moving viewpoint assembles the elements for an appropriation of one's own intellectual and rational self-consciousness is ~~governed~~ governed, not by considerations of logical or metaphysical priority, but by considerations of pedagogical efficacy.

Now this fifth disjunction would be superfluous if I could not anticipate that among potential readers there might be men already in possession of a logical or a metaphysical scheme of things. ~~Conversely, if the disjunction is to be ~~not~~ helpful, it must envisage precisely the points on which logicians or metaphysicians are likely to find it obvious that, on their already established criteria, I must be on the wrong track. So with the more general reader's permission, I I now shall depart from the~~

~~scheme of things. Accordingly, with the permission of the more general reader, I must depart for the moment from the basic rule of the present work~~

scheme of things. Accordingly, though it will be the constant rule of the present work to deal with issues in their proper generality and at their proper place and time, it seems necessary to depart for a moment from that rule to envisage some of the points on which logicians or metaphysicians are going to find it obvious that, ^{on} ~~of~~ their ~~z~~ already established criteria, I must be utterly on the wrong track.

From a logical viewpoint, indeed, it might seem that enough has been said. The argument is to move through a sequence of lower ~~context~~ contexts for the purpose of reaching an upper context; and the basic upper context is to be pre-logical, not in the sense made current by M. Lévy-Bruhl, but in the sense that developing intelligence and reasonableness are prior to intelligently grasped and reasonably affirmed utterances. Still it may not be amiss to indicate a single instance in which the genetic order of developing insights differs from the logical order of defining thought. ~~For Thus,~~ logically it is illegitimate to speak, for example, of the equality of the spokes of a cart-wheel without explaining ~~is that by equality one means~~ the spokes will be said to be equal if the same number is reached in ~~measuring~~ measuring each of them. In turn, this statement calls for a further statement in which the meaning of the word, measuring, is explained; ~~and~~ that explanation calls for an account of ~~measuring~~ units of measurement, of their standardization, ~~and~~ of the numbers employed in measuring, ~~and~~ of the isomorphism of mathematical and physical relations. On the other hand, ~~from a genetic~~

genetically it seems clear enough that Euclidean geometry existed for some ~~centuries~~ centuries before there occurred any effective advertence to its metrical suppositions. More generally, it seems true that prior to every correct logical formalization there is a sufficiently univocal communication of ~~its~~ insights, that this prior communication grounds not only non-technical discourse but also the possibility of discussing the adequacy or inadequacy of any formalization, and that from a pedagogical viewpoint the correct procedure is to begin by communicating the insights.

~~To turn from logical the difficulties of logic~~

~~To turn from possible possible difficulties of logicians to possible difficulties of metaphysicians~~

To turn from logical to metaphysical considerations, I had best begin by explaining why metaphysicians are likely to find all my arguments upside down and inside out. As Aristotle noted, one may assign either a causa essendi (because the moon is a sphere, it passes through such and such phases) or a causa cognoscendi (because the moon passes through these phases, it must be a sphere). Now this distinction is significant enough to bear the weight of an application on the grand scale that envisages at once the whole of metaphysics. For the whole of metaphysics can be set forth ~~by~~ in terms of the causa essendi and then it begins from the ontological cause of all being and ~~from that~~ in terms of that ground and its derivatives explains all else that is or can be. But inverse to every causa essendi, there is a causa cognoscendi. It follows that, if an ontological metaphysics is known, there must be as well an epistemological metaphysics that begins from the cognitional ground of all that is to be known

~~and in terms of that ground explores all that is to be known of every being. The existence of such an epistemological metaphysics might be denied by anyone that denied the existence of an ontological metaphysics. Again, epistemological metaphysics might be rejected by those that 1) admit an ontological metaphysics but 2) deny that either they themselves or anyone else can know how it is that an ontological metaphysics can be known. But, at least, it is impossible to avoid both positivism and irrationalism and yet reject epistemological metaphysics; and the difficulty that, at the moment, I would forestall arises neither from positivists nor irrationalists but from metaphysicians who, I believe, fail to grasp the full implications of their own position.~~

To turn from logical to metaphysical considerations, I had best begin by explaining a probable paradox. For I think it likely that I ~~may~~ ^{some} succeed in persuading positivists of the existence ~~of~~ ^{yet,} and validity of metaphysics ~~and,~~ at the same time, draw from hitherto convinced metaphysicians ~~that~~ outraged protests that I have everything upside down and inside out. To elucidate such a bewildering phenomenon, ~~if~~ it will be helpful to recall Aristotle's distinction between the causa essendi (the moon goes through these phases, because it is a sphere) and the causa cognoscendi (the moon is a sphere, because it goes through these ~~what~~ phases). Now the traditional presentation of metaphysics has been in terms of the causa essendi, and only incidentally has the inverse relationship of the causa cognoscendi received attention. But in the present work the whole conception of metaphysics is dominated by the causa cognoscendi; and while the labor of writing a supplementary volume would reveal in detail the equivalence of

the two presentations, still so great a labor would be superfluous for anyone willing to attend to a rather brief argument.

~~For it seems demonstrable that, if there exists an ontologically structured metaphysics that grounds all its basic explanations on the causa essendi, then there also exists an epistemologically structured metaphysics that grounds all its basic explanations on the causa cognoscendi.~~

~~Let us distinguish between an ontologically structured metaphysics that grounds all its basic explanations~~

Let us suppose that metaphysics is a science and that a science is certa rerum cognitio per causas. Let us also suppose that there exists an ontologically structured metaphysics, that is, that there is a department of certain knowledge of things in which in all basic instances the ground or cause is a causa essendi. Then either it is or it is not possible to explain how the ontologically structured metaphysics is known. If that explanation is possible, then the ontologically structured metaphysics in its entirety is deducible from a ~~ground or set of grounds that assign the causa cognoscendi~~ ground or set of grounds in which regularly the causa cognoscendi is assigned. So on this first ~~the~~ ^{supposes} alternative the ontologically structured metaphysics necessarily ~~implies~~ an epistemologically structured metaphysics. But on the second alternative, on which one cannot know how the ontologically structured metaphysics is known, there arises a series of disconcerting questions. For if one cannot know how it is known, then there can be no method of metaphysics; it can be claimed that results are obtained; but it cannot be suggested that anyone can know how to go about obtaining them. Again, if one cannot know how

the ontologically structured metaphysics is known, there arises the suspicion that it is not known but merely asserted; for if one cannot know how knowledge is acquired, how can one know that it is possessed. Again, as will appear, it is possible to explain just how mathematics is known, just how natural science is known, just how common sense is developed, just how beliefs are acquired and spread. ~~It follows~~ It follows that the unknowable genesis of ontologically structured metaphysics can have nothing in common with the genesis of mathematics, nothing in common with the genesis of natural science, nothing in common with the genesis of common sense, and nothing in common with the genesis of belief. Indeed, even though mystical knowledge and extra-sensory perception have not been explained, no one claims that they cannot ever be explained; and so it would follow that the unknowable genesis of ontologically structured metaphysics is even more unscrutable than mystical experience and extra-sensory perception.

In brief, while there is a certain novelty to my approach to metaphysics, the novelty lies not in the principle but in the achievement. The notion of the causa cognoscendi is as old as the notion of the causa essendi. If an ontologically structured metaphysics can be known, then the activity of knowing it can be known. If that activity can be known, then the activity supplies a premiss from which the known can be deduced. ~~Though the deduction is new, still only the complacent deviation~~
~~departs complacent deviation to a familiar routine~~
 Though the deduction is new, still it can be rejected in principle only by affirming in principle that metaphysics cannot be methodical, cannot but be suspect, cannot but be classed

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as more mysterious than mysticism and extra-sensory perception. Such consequences are no more acceptable to the metaphysicians of the present than to those of the past; and so one is driven to accepting the first alternative, namely, that one cannot affirm an ontologically structured metaphysics without supposing (I do not say "without knowing") an epistemologically ^{structured} metaphysics ^{may seem, especially} in which everything ~~seems~~ to the routine mind, to be inside out and upside down because the argument runs not from the causa essendi but from the causa cognoscendi.

Our aim, then, regards 1) not the fact of knowledge but a discrimination between two facts of knowledge, 2) not the details of the known but the structure of the ~~known~~ knowing, 3) not the knowing as an object characterized by catalogues of abstract properties but the ~~appropria~~ appropriation of one's own intellectual and rational self-consciousness, 4) not a sudden leap to appropriation but a slow and pains-taking development, and 5) not a development indicated by appealing either to the logicx of the as yet unknown goal or to a presupposed and as yet unexplained ontologically structured metaphysics, but a development that can begin in any sufficiently cultured consciousness, that expands in virtue of the dynamic tendencies of that consciousness itself, ^{and} that heads through an understanding of all understanding to ~~the~~ a basic understanding of all that can be understood.

~~The last phrase may stand as our~~

~~The last phrase may be taken at once as the principle and the slogan of the effort of these pages: Thoroughly understand understanding, and you will come to understanding all there is to be~~

The last phrase has the ring of a slogan and, happily enough, it sums up the positive content of this work. Thoroughly understand what it is to understand, and not only will you understand the broad lines of all there is to be understood but also you will possess ~~a base and pattern~~ a fixed base, an invariant pattern, opening upon all further developments of understanding.

For the appropriation of ^{one's own} rational self-consciousness, which has been so stressed in ~~the~~ this Introduction, is not an end in itself but rather a beginning.

~~It implies a metaphysic that not only unifies the sciences but also relates the sciences to common sense. It implies a method of metaphysics that operates from a universal viewpoint, that makes every other viewpoint intelligible, that embraces every development and reverses every aberration~~

It ~~is~~ is a necessary beginning, for unless one breaks the duality in one's knowing, one doubts that understanding correctly is knowing. Under the pressure of that doubt, either one will sink into the bog of a knowing that is without understanding, or else one will cling to understanding but sacrifice knowing on the altar of an immanentism, an idealism, a relativism. From the horns of that dilemma one escapes only through the discovery (and one has not made it yet if one has no clear memory of its startling strangeness) that there are two quite different realisms, that there is an ~~incoherent~~ incoherent realism, half animal and half human, that poses as a half-way ~~low~~ house between materialism and idealism and, on the other ^{that} hand, there is an intelligent and reasonable realism between which and materialism the half-way house is idealism.

The beginning, then, not only is self-knowledge and self-appropriation but also a criterion of the real. If to convince oneself that knowing is understanding, one ascertains that knowing mathematics is understanding and knowing science is understanding and the knowledge of common sense is understanding, one ends up not only with a detailed account of understanding but also with a plan of what there is to be known. The many sciences lose their isolation from one another; the chasm between science and common sense is bridged; the structure of the universe proportionate to man's intellect is revealed; ~~and that revealed structure proves to be a *via* metaphysics~~ and as that revealed structure provides an object for a metaphysics, so the initial self-criticism provides a method for explaining how metaphysical and anti-metaphysical affirmations arise, and for selecting those that are correct, and for eliminating those that patently spring from a lack of accurate self-knowledge. Further, as a metaphysics is derived from the known structure of one's knowing, so an ethics results from knowledge of the compound structure of one's knowing and doing; and as the metaphysics, so too the ethics prolongs the initial self-criticism into an explanation ^{*of the origin*} of all ethical positions and into a criterion for passing judgment on each of them. Nor is this all. Still further questions press upon one. They might be ignored if knowing were not understanding or if understanding were compatible with the obscurantism that arbitrarily brushes questions aside. ~~The issue of transcendent knowledge has to be faced~~

questions aside. But knowing is understanding, and understanding is incompatible with the obscurantism that arbitrarily brushes questions aside. The issue of transcendent knowledge has to be faced. Can man know more than the intelligibility immanent in the world of possible experience? If he can, how can he conceive it? If he can conceive it, how can he affirm it? If he can affirm it, how can ~~re~~ he reconcile that affirmation with the evil that tortures too many human bodies, darkens too many human minds, hardens too many human hearts? Such are the questions of the last two chapters, but further comment on the answers offered there will be more intelligible in an Epilogue than in an Introduction.

As the reader shortly will discover, this is not an erudite work. Prior to all writing of history, prior to all interpretation of other minds, there is the ~~self-gate~~ self-scutiny of the historian, the self-knowledge of the interpreter. That prior task is my concern. It is a concern that has its origins and background, its dependences and affiliations, that might be worth ~~telling~~ recounting. Yet the story would be ambiguous, as long as the prior task remained undone. ~~For it each reader would~~ For the prior task is the attainment of the universal viewpoint that potentially includes all viewpoints and of the universal scale that potentially includes all scales of values.

ations; they might be worth recounting; but they would be worth recounting only because of the worth of the prior concern; and they would be interpreted correctly only if the prior concern were successful in accomplishing the prior task.

So it is that my references are few and unessential. In the analysis of empirical science I thought it would be helpful to select a single book in which a reader could find an account of topics that arose; for this reason, then, and without any intention of suggesting some unique authoritativeness I regularly refer to Lindsay and Margenau's frequently reprinted Foundations of Physics. Again, scattered ~~in~~ throughout the work, there occur bold statements on the views of various thinkers. May I express the hope that they will not cause too much annoyance. As the lengthy discussion of the truth of interpretation in Chapter XVII will reveal, they ^{can hardly} ~~cannot~~ pretend to be verdicts issued by the court of history, whose processes labor under much longer delays than the worst of the courts of law. Their primary significance is simply that of an abbreviated mode of speech that has a fair chance of communicating rapidly what otherwise could hardly be said at all. And, perhaps, to that primary meaning there could be added a suggestion that, in the measure that the principles of this work are accepted, the significance that we happen to have underlined may provide a starting-point for further inquiry.

In the Introduction to his Treatise on Human Nature, David Hume wrote that one does not conquer a territory by taking here an out-post and there a town or village but by marching directly upon the capital and assaulting its citadel. ~~But~~ ~~if I am sanguine enough to fancy that I have hit upon a~~ ~~correct ~~policy~~ strategy, I am no less convinced that ~~it~~ the~~ ~~execution of the most successful campaign has to be followed~~ ~~by a prolonged labor of moving up, of reorganizing, and of~~ ~~consolidation. ~~And~~ if I venture to write, it is to ~~win~~~~

paragraph

Still, correct strategy is one thing; successful execution is another; and even after the most successful campaign there remains a prolonged task of mopping up, of organization, and of consolidation. If I may be sanguine enough to believe that I have hit upon a set of ideas of fundamental importance, I cannot but acknowledge that I do not possess the resources to give a faultless display of their implications in the wide variety of fields in which they are relevant. I can but ~~do~~ make the contribution of a single man and then hope that others, sensitive to the same problems, will find that my efforts shorten their own labor and that my conclusions provide a base for further developments.