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On the commemoration day of the university, it is a valuable privilege of the rector to be able to ask the guests and members of the university to focus upon a problem which lies within the province of his own scholarly discipline. But the obligation which corresponds to this privilege creates difficulties for the philosopher which are altogether singular. It is, of course, relatively easy for the philosopher to select a theme that will certainly be able to hold a general interest. However this advantage is significantly outweighed by the difficulties that are entailed by the peculiarities of the philosophical mode of investigation. All scientific and scholarly work has the purpose of putting its special problems into a wider framework and resolving specific questions from the standpoint of more general perspectives. In this respect, there is no difference between philosophy and the other disciplines. It is permissible for the other sciences to regard these more general perspectives and principles as given and established. This assumption is sufficiently reliable for the purposes of specialized research within the discipline in question. The essential feature of philosophy, however, is the following: its real object of investigation is actually these principles themselves. It follows that the solutions to philosophical problems cannot be deduced from more general propositions. On the contrary, every philosophical inquiry is obliged to establish the most general premises. Strictly speaking, there are no specialized investigations in philosophy. Each of the specialized problems of the discipline extends to the most abstract and ultimate philosophical questions. Whoever proposes to discuss philosophical matters philosophically must, above all, have the courage to take a general position. He must also possess a kind of fortitude that is even more difficult to maintain: the boldness to steer his audience onto the high seas of the most abstract reflections, where the solid earth threatens to vanish from the eye and disappear beneath the feet.

In view of these considerations, the philosopher might well be tempted to provide nothing more than an historical sketch of some aspect of his discipline. Or he might take refuge in the specialized empirical science which the existing academic customs and dispositions still persist in assigning to him: psychology. Psychology poses a profusion of problems that concern each of

us. The analysis of these problems promises more certain results if the methodological and substantive perspectives that have come to light in the lively development of this discipline during the last few decades becomes more diverse and manifold. I shall not employ either of these routes of escape. I do not propose to lend credence to the view that philosophy no longer exists, but only its history. Nor do I want to lend support to the view that philosophy, as it was newly founded by Kant, could ever again be reduced to the confines of a specialized science: that specialized science the cognitive value of which Kant himself judged to be the most modest of all the theoretical disciplines. Just to the contrary. Indeed, it seems to me to be a duty, on an occasion like the present, to bear witness to the following position. Even philosophy in its contemporary form — divested of all its metaphysical pretensions — is capable of grappling with the great issues to which it owes the significant aspects of its history as well as its value for literature and its place in the academic curriculum. In other words, the hazards of the enterprise have enticed me to provide you with an illustration of the motive force of philosophical inquiry in virtue of which every specialized problem leads to the ultimate riddles of our cosmology and philosophy of life. This account will demonstrate the necessity with which each attempt to understand completely matters that seem to be clear and simple swiftly and inescapably presses us to the most extreme limits of our cognitive capacities, limits that are enveloped in obscure mysteries.

For this purpose, I shall choose a theme from logic; specifically from methodology, the theory of scientific investigation; for in the discussion of such a theme, the intimate interrelationship between philosophical inquiry and research in the other sciences and scholarly disciplines should appear in an especially clear and perspicuous fashion. Philosophy, both in the present and in the past, does not exist in its own imaginary world, a universe that is alien to other forms of knowledge. On the contrary, it maintains a rich and fruitful intercourse with all vital forms of knowledge of reality and all the axiological contents of an authentic intellectual life. If the history of philosophy is the history of human error, then the reason for this is the following. Philosophy, acting in good faith, employed the conclusions established by the theories of the specialized sciences as if they were perfectly sound and certain. At best, however, these doctrines could only qualify as probable hypotheses. This intimate and vital interconnection between philosophy and the other disciplines is exhibited most clearly in the development of logic. Logic has never been anything more than critical reflection upon the existing forms of knowledge that are actually employed in practice. A productive method has never been established on the basis of abstract constructions or the purely formal reflections of logicians. The task of the logician is simply to define the general form of specific methods which have

proven to be successful and, following this, to determine the significance, the cognitive value, and the limits of the use of these methods. Suppose we employ the preeminent illustration of the point which is at stake here. Consider the most fully developed conception of the nature of induction which we find in modern logic, but not in its Greek mother. What is the source of this conception? It does not lie in the programmatic recommendations of Bacon, who provided a scholastic description of induction and advocated its use. On the contrary, it lies in reflection on the energetic application of this mode of thought. Since the era of Kepler and Galileo, this methodology has proven itself in specialized research in the natural sciences. In progressing from one specialized problem to another, it has become increasingly refined and sophisticated.

It is obvious that the problems peculiar to the more recent logic rest on the same considerations: the attempt to establish conceptually determinate lines to delimit the single provinces within the heterogeneous manifold of the fully developed domain of human knowledge. Consider the vicissitudes in the preeminence which philology, mathematics, natural science, psychology, and history have enjoyed in the scientific interests of the recent era. The shifting predominance of these sciences is reflected in the different plans for a "system of the sciences," as such a taxonomy was once called, or a "classification of the sciences," as it is now called. The universalistic methodological tendency of this way of thinking was committed to a serious error: the failure to recognize the autonomy of individual provinces of knowledge. This methodological tendency subjected all phenomena to the constraints of one and the same method. In consequence, the only remaining grounds on which a classification of the sciences could be based were substantive: in other words, metaphysical. Consider the successive claims raised by the mechanistic method, the geometrical method, the psychological method, the dialectical method, and, most recently, the evolutionary-historical method. Transcending the limited domain of phenomena to which their original fruitful application was restricted, these methods have been generalized as much as possible in the attempt to comprehend the entire circumference of human knowledge. As the conflict between these different methodological tendencies appears to grow more pronounced, the crucial task of an autonomous and responsible logical theory becomes all the more pressing. This task is to provide a just evaluation of these conflicting claims and a balanced analysis of the legitimate domain of these various methodologies by means of the general premises of epistemology. At this point, the prospects for the success of this enterprise do not seem to be unfavorable. In the work of Kant, the methodological controversy in which philosophy confronted mathematics — and, in principle, also psychology — was consummated. In the nineteenth century, a certain paralysis of the philosophical impulse set in, an impulse that was excessively stimulated and overstrained

at the beginning of the century. At the same time, the nineteenth century experienced an increasingly heterogeneous variety of tendencies and movements in the specialized sciences. In the mastery of numerous novel problems and new kinds of problems, our methodological apparatus has been completely transformed. To an unprecedented extent, it has become both more comprehensive and more sophisticated. In this development, the various methodologies have become ramified and interrelated in many respects. Nevertheless, every single methodology claims a predominant status for itself in our contemporary world view and philosophy of life. This predicament poses new problems for theoretical philosophy. Without intending to present an analysis that is in any sense exhaustive, these are the problems to which I should like to draw your attention.

It is hardly necessary to mention that the taxonomies which I have in mind cannot coincide with the classification of the sciences that is employed in order to distinguish the academic faculties from one another. The academic division of labor within the sciences is a consequence of the practical tasks of the universities and their historical development. In this process, practical requirements have often combined provinces which, from the perspective of pure theory, should be separated. They have also differentiated areas which, theoretically, should be intimately combined. The same practical motive has repeatedly obliterated the distinction between the genuinely scientific disciplines and the practical and technical disciplines. However we should not suppose that this tendency would necessarily prejudice the actual practice of scientific research. Just to the contrary. In this context too, the practical relationships between the sciences have been successful in producing a richer and more vital interaction between the various provinces of scientific research than perhaps would have been the case had they been interrelated on the basis of the more abstract criteria employed in the scientific academies. Consider, nevertheless, the various shifts and dislocations which the various faculty divisions of the German universities have experienced in the last few decades, especially in the old faculty of the arts. These shifts betray a certain tendency to lend more weight and significance to methodological criteria for the classification of the sciences.

Suppose that we examine these criteria from a purely theoretical perspective. Then the following assumption may be presupposed as valid from the outset: philosophy can be juxtaposed to the empirical sciences. Most probably, this same assumption also still holds true for mathematics. Philosophy and mathematics fall under the archaic denomination of "rational" sciences — in very different senses of the word, however, which I shall not undertake to discuss here. At this point, it suffices to identify the common properties of philosophy and mathematics in a negative or privative fashion: their immediate purpose is not knowledge of data given in experience, even

though other sciences can and should employ the propositions established in philosophy and mathematics for empirical purposes. From the formal perspective, a logical property common to both philosophy and mathematics corresponds to this substantive factor. Although the actual, psychogenetic occasion for research and discovery in philosophy and mathematics may very well lie in empirical motives, the propositions of philosophy and mathematics are never based on single observations or collections of observations. By empirical sciences, on the other hand, we understand disciplines which undertake to establish knowledge of reality which is somehow given and accessible to observation. The formal criterion of the empirical sciences may be described as follows. The validation of the results of these sciences includes not only the general, axiomatic presuppositions and the norms of valid thinking which are necessary conditions for all forms of knowledge; it also requires the verification of facts on the basis of observation.

At present, a certain classification of the disciplines which attempt to establish knowledge of reality is regularly employed. They are distinguished into natural sciences [Naturwissenschaften] and sciences of the mind [Geisteswissenschaften]. Stated in this particular form, I regard the dichotomy as unfortunate. Nature and mind is a substantive dichotomy. In the denouement of ancient thought and the beginnings of medieval thought, it acquired a dominant position. In more recent metaphysics, from Descartes and Spinoza to Schelling and Hegel, this dichotomy has been maintained with absolute rigidity. If my evaluation of the disposition of the most recent developments in philosophy and the consequences of epistemological criticism is correct, however, then this dichotomy, which has become fixed in our general modes of thinking and speaking, can no longer be acknowledged as so certain and self-evident that it may serve — just as it stands and without any inquiry into its grounds — as the foundation for a classification of the sciences. In addition, it should be noted that this dichotomy of objects is not equivalent to a dichotomy based on modes of cognition. Locke reduced Cartesian dualism to the following subjective formula: external and internal perception, sensation and reflection. These are the two distinctively different organs or faculties on the basis of which knowledge of the external, corporeal world, or nature, is to be distinguished from knowledge of the inner world, or mind. In turn, recent epistemological critique has shaken this conception in an unprecedented fashion. At the very least, it has provided strong grounds for doubting the justifiability of accepting a form of "inner perception" as a special, autonomous mode of knowledge. In addition, this view holds that there is no sense in which it can be acknowledged that the facts of the so-called sciences of the mind are established exclusively on the basis of inner perception. The incongruity between the substantive principle and the formal principle of classification, however, is most clearly exhibited

by the following consideration: an empirical discipline as important as psychology cannot be classified unambiguously either as a natural science or as a science of the mind. From the perspective of its subject matter, psychology can only be a science of the mind. In a certain sense, it may be described as the foundation of all the other sciences of the mind. From the perspective of psychology as an investigation, however, its entire methodological procedure is exclusively the method of the natural sciences. In consequence, it is inevitable that psychology has sometimes been described as the "natural science of inner perception" or even as the "natural science of the mind."

A classification which produces such difficulties has no systematic basis. In order to provide a systematic foundation for this dichotomy, however, perhaps only a few conceptual changes in definition are needed. What is the source of the methodological relationship between psychology and the natural sciences? It evidently lies in the consideration that both psychology and the natural sciences establish, collect, and analyze facts only from the viewpoint and for the purpose of understanding the general nomological relationship to which these facts are subject. Diversity in the objects of scientific investigation, of course, has the following consequence: the specialized methods for identifying and verifying facts, the methods for the inductive use of facts, and the formulae in terms of which established laws can be articulated are also very different. From this perspective, however, the distance between psychology and chemistry is hardly greater than the distance between mechanics and biology. However — and this is what matters here — all of these substantive differences become quite insignificant in comparison with the logical equivalence with which these disciplines are endowed by the formal property of their theoretical purposes. Although the phenomenon in question may be a motion of bodies, a transformation of matter, a development of organic life, or a process of imagination, emotion, and volition, the purpose of these disciplines is invariably the discovery of laws of phenomena.

In contrast to these sciences, the majority of the disciplines that are usually called sciences of the mind have a distinctively different purpose: they provide a complete and exhaustive description of a single, more or less extensive process which is located within a unique, temporally defined domain of reality. Consider the subject matter of these disciplines and the specialized techniques on which the comprehension of their data is based. They are also extremely diverse. The sciences of the mind are concerned with a single event or a coherent sequence of acts or occurrences; the nature and life of an individual person or an entire nation; the definitive properties and the development of a language, a religion, a legal order, an artifact of literature, art, or science. Each of these objects requires a mode of investigation which conforms to its own special properties. The theoretical purpose of the in-

vestigation, however, is invariably the same: to reproduce and understand in its full facticity an artifact of human life to which a unique ontological status is ascribed. It is clear that, in this sense, the sciences of the mind comprehend the entire domain of the historical disciplines.

At this point, we have before us a purely methodological classification of the empirical sciences that is grounded upon sound logical concepts. The principle of classification is the formal property of the theoretical or cognitive objectives of the science in question. One kind of science is an inquiry into general laws. The other kind of science is an inquiry into specific historical facts. In the language of formal logic, the objective of the first kind of science is the general, apodictic judgment; the objective of the other kind of science is the singular, assertoric proposition. Thus this distinction connects with the most important and crucial relationship in the human understanding, the relationship which Socrates recognized as the fundamental nexus of all scientific thought: the relationship of the general to the particular. From this point on, there is a cleavage in classical metaphysics. Plato sought reality in the immutable generic concepts or forms; Aristotle, in the purposeful development of individual natures. Modern natural science has taught us to define real existence in terms of the constant, necessary connections in phenomena. It has replaced the Platonic idea with the natural law.

In view of the foregoing considerations, we are justified in drawing the following conclusion. In their quest for knowledge of reality, the empirical sciences either seek the general in the form of the law of nature or the particular in the form of the historically defined structure. On the one hand, they are concerned with the form which invariably remains constant. On the other hand, they are concerned with the unique, immanently defined content of the real event. The former disciplines are nomological sciences. The latter disciplines are sciences of process or sciences of the event. The nomological sciences are concerned with what is invariably the case. The sciences of process are concerned with what was once the case. If I may be permitted to introduce some new technical terms, scientific thought is *nomothetic* in the former case and *idiographic* in the latter case. Should we retain the customary expressions, then it can be said that the dichotomy at stake here concerns the distinction between the natural and the historical disciplines. However we must bear in mind that, in the methodological sense of this dichotomy, psychology falls unambiguously within the domain of the natural sciences.

We should also bear in mind that this methodological dichotomy classifies only modes of investigation, not the contents of knowledge itself. It is possible — and it is in fact the case — that the same subjects can be the object of both a nomothetic and an idiographic investigation. This is related to the fact that, in a certain respect, the distinction between the invariable and the

unique is relative. Consider an entity which undergoes no immediately perceptible change within a very large span of time. For this reason, its unchangeable forms can be investigated nomothetically. From a more comprehensive perspective, however, the same entity may prove valid for a more limited time-span only, i.e. it may qualify as a unique phenomenon. For example, all of the single instances of the use of a language are governed by its formal laws. These laws remain the same throughout all changes of expression. On the other hand, this same distinctive language as a whole, together with the totality of its special formal laws, is nothing more than a unique and transitory phenomenon in the life of human languages as such. The same sort of point also holds true for the physiology of the body, for geology, and in a certain sense even for astronomy. Thus the historical principle is transposed onto the domain of the natural sciences.

The science of organic nature constitutes the classical example of this phenomenon of transposition. As a taxonomy or a systematic science, it has a nomothetic character, insofar as the invariable types of organisms which have been observed during the last few thousand years may be represented as the nomological form of these organisms. Consider, however, the subject matter of the biological sciences as evolutionary history in which the entire sequence of terrestrial organisms is represented as a gradually formative process of descent or transformation which develops in the course of time. There is neither evidence nor even a likelihood that this same organic process has been repeated on some other planet. In this case, the science of organic nature is an idiographic or historical discipline. Kant himself, in his anticipatory sketch of the modern theory of evolution, called the thinker who would have the audacity to embark upon this "adventure of reason" the future "archeologist of nature."

Suppose we consider the following question: what has logical theory thus far made of this crucial antithesis which distinguishes the specialized sciences? This question identifies precisely the point on which logical theory is most in need of reform, even today. The entire development of logic betrays the most decisive preference for nomothetic forms of thought. This is easily explained. All scientific research and verification assume the form of the concept. Therefore the investigation of the nature, foundation, and use of general concepts invariably remains the most immediate and significant interest of logic. The force of history has also had its influence. Greek philosophy had its origins in the natural sciences, in the question of *physis* or nature: that is, the question of the permanent form of existence which endures throughout the changes of phenomena. A parallel course — causally mediated by the historical tradition in the Renaissance — was followed by modern philosophy. Its autonomy developed in the context of the natural sciences. Therefore it was inevitable that logical reflection above all concerned itself with nomothetic forms of thought, and persistently made its

general theories dependent on them. This still holds true today. Our entire traditional theory of concept, proposition, and inference is still tailored to the Aristotelian principle according to which the general proposition is the focal point of logical investigation. One need only leaf through any logic textbook in order to be convinced that the great majority of examples are chosen from mathematics and the natural sciences. Moreover even the logicians who have ample grasp of the peculiarities of historical research still seek the ultimate orientation of their theories in the province of the nomothetic sciences. It would be desirable, though there are few signs of it, if logical reflection devoted the same attention to the immense reality of history — exhibited in historical thought itself — that it has devoted to the detailed understanding of forms of inquiry in natural science.

For the present, suppose that we examine the relationship between nomothetic and idiographic knowledge more carefully. As noted above, natural science and history are both empirical sciences. In other words, the foundations of both sciences — or, from a logical perspective, the premises of their arguments — lie in experience, the data of perception. Both disciplines also agree that what the naive man usually means by experience is not sufficient to satisfy the requirements of either discipline. The foundation of both disciplines rests upon a scientifically refined and critically disciplined form of experience which has been subjected to conceptual analysis. Consider the problems of identifying differences in the structure of intimately related organisms; the correct use of a microscope; the certain interpretation of simultaneity in the amplitude of a pendulum, and the position of a needle on a meter. In each of these cases, the perceptions must be scrupulously educated. For the same reason, the laborious techniques of identifying the characteristic features of a certain handwriting, observing the style of a writer, or comprehending the intellectual horizon and the range of interest of an historical source must also be learned. In both the natural sciences and history, what one acquires by nature is usually nothing more than a very incomplete mastery of these techniques. In both inquiries, the tradition of scientific research has produced a profusion of refined and increasingly sophisticated technical concepts which the apprentice must learn how to employ. On the one hand, every such specialized method of investigation is based upon substantive results which have already been confirmed or are at least hypothetically accepted. On the other hand, these methods are also based upon logical relationships that are often extremely complex. At this point, we should again note that, up to now, logic has been much more interested in the nomothetic sciences than in the idiographic sciences. There are exhaustive logical investigations concerning the methodological significance of precision instruments, the theory of experimentation, the determination of probability on the basis of multiple observations of the same

phenomenon, and other similar questions. However, philosophical concern with parallel problems in the methodology of history does not even remotely approximate its interest in the methodological problems of the natural sciences. This has to do with the fact that philosophical endowment and productivity coincide much more frequently with scientific ability than they do with historical gifts. This is in the nature of things and confirmed by history. And yet from the perspective of the theory of knowledge in general, it would be of the greatest interest to discover the logical forms according to which the critique of observations in historical research proceeds; and also to formulate the "maxims of interpolation" that are employed in order to construct hypotheses in history: here too it would be of the greatest interest to determine the role played by facts in the interdependent structure of our knowledge of the world, and the role played by the presuppositions according to which we interpret these facts.

In the final analysis, however, all empirical sciences are based on the same ultimate principle. This principle requires the mutual consistency of all those conceptual elements which refer to the same object. The difference between research in the natural sciences and history appears only when the issue concerns the cognitive or theoretical use of facts. In this context, we may note the following points. Natural science seeks laws; history seeks structural forms. In the natural sciences, thought moves from the confirmation of particulars to the comprehension of general relationships; in the historical sciences, it is devoted to the faithful delineation of the particulars. From the perspective of the natural scientist, the single datum of observation never has any intrinsic scientific value. The datum is scientifically useful only to the extent that the scientist believes he is justified in representing the datum as a type, a special case of a general concept which is developed on the basis of the datum. He is concerned only with the properties of the datum which provide insight into a general nomological regularity. The historian's task, on the other hand, is to breathe new life into some structure of the past in such a way that all of its concrete and distinctive features acquire an ideal actuality or contemporaneity. His task, in relation to what really happened, is similar to the task of the artist, in relation to what exists in his imagination. This is the source of the relationship between historical accomplishment and aesthetic creativity, the kinship between the historical disciplines and *belles lettres*.

It follows that in the natural sciences the bias in favor of abstraction predominates. In history, however, the bias in favor of perceptuality [Anschaulichkeit] is predominant. This claim will surprise only those who are in the habit of limiting the concept of perception in a materialistic fashion: as restricted to the psychic reception of the perceptual data of the present. This limited view fails to consider that there is a perceptuality — that is, the concrete and individual animation of the ideal present — which may be

ascribed to the eye of the mind just as well as to the anatomical eye. Of course this materialistic conception of perception is very widely accepted today. However there are good reasons to doubt the soundness of this view. Suppose that, wherever possible, the stimulation or excitation of ideas is interpreted as a consequence of tactile and visual sensations. As a result of the preponderance which this interpretation ascribes to perception as an act of passive reception, the spontaneous faculty of perception threatens to atrophy as a result of disuse. Anyone who accepts this interpretation should not be astonished if the perceptual fantasy becomes indolent and ineffective whenever it is divorced from physically tactile and visual perception. This same point holds for pedagogy and for art. It holds true especially for the art of drama. In contemporary drama, every effort is made to keep the eye so completely preoccupied that nothing more remains for the inner perception of literary forms.

The comparison of research in the natural sciences and history will establish even more clearly the predominance of abstraction in natural science and of perceptuality in history. Consider the conceptual apparatus which historical criticism requires in order to analyze the historical tradition. These analytical techniques may be extremely refined and sophisticated. Nevertheless, the ultimate aim of history is always to extract and reconstruct from the raw material of history the true shape of the past in robust and vital clarity. History produces images of men and human life in the total wealth and profusion of their uniquely peculiar forms and with their full and vital individuality preserved intact. Past languages and nations, their beliefs and their forms, their struggle for power and freedom, their literature and their thought speak to us through the voice of history — resurrecting what is forgotten into a new form of life. The world which the natural sciences construct is completely different. No matter how perceptually concrete and graphic the starting points of the natural sciences may be, their cognitive goals are theories — in the final analysis, mathematical formulations of laws of motion. Consider the single perceptual datum which appears and disappears. In genuine Platonic fashion, the natural sciences ignore this datum as a negligible and insubstantial appearance. They strive to acquire knowledge of the nomological necessities whose timeless immutability governs all events. From the colorful world of the senses, the natural sciences construct a system of abstract concepts. The purpose of such a conceptual scheme is to comprehend the true nature of things that lies behind the phenomena: a silent and colorless world of atoms in which the earthy aura of perceptual qualities has disappeared completely: the triumph of thought over perception. Utterly indifferent to the past, the natural sciences drop anchor in the sea of being that is eternally the same. They are not concerned with change as such, but rather with the invariable form of change.

If the dichotomy between the two kinds of empirical science is so profound,

we can understand why a conflict must break out between natural science and history for the decisive influence upon our general world view and philosophy of life. The question is: from the perspective of our total cognitive purposes, which is more valuable, knowledge of laws or knowledge of events? Is it more important to understand the general, atemporal nature of things or to understand individual, temporal phenomena? From the outset, it is clear that this question can only be resolved on the basis of reflections concerning the ultimate aims of scientific research.

At this point, I shall only touch superficially on the extraneous resolution of this question from the standpoint of utility. From this standpoint, both forms of knowledge are equally justifiable. Knowledge of general laws always has the practical value of making possible both predictions of future states and a purposeful human intervention in the course of events. This point holds true for the processes of the inner world as well as for those of the external, material world. In the external world, knowledge which is grounded on nomological thought makes possible the tools by means of which the mastery of nature by man is enlarged to a constantly increasing extent. All purposeful activity in human social life, however, is no less dependent upon the experience acquired as a result of historical knowledge. To employ a variation upon a classical expression, man is an historical animal. From generation to generation, his cultural life becomes an increasingly dense and substantial historical structure. Anyone who intends to produce a vital effect on this structure must understand its development. Where this thread of historical development has been broken, its fragments must be laboriously gathered and woven together. History itself proves that this is the case. Suppose that as a result of some singular and violent event — an external transformation of the planet or an inner transformation of the human world — our contemporary culture were destroyed. We can be quite certain that later generations will attempt to uncover its traces just as zealously as we search for the cultural remains of classical antiquity. For these reasons alone, the human race is obliged to carry the immense school bag of history. If in the course of time it threatens to become increasingly heavy and burdensome, then the future will not lack means to lighten this burden prudently and without damaging consequences.

However we are not really concerned with utility in this sense. We are more interested in the immanent value of knowledge. We are also not concerned with the personal satisfaction which the scholar gains from knowledge solely for its own sake. For the subjective pleasure of inquiry, discovery, and confirmation can be found in every form of knowledge in the same way. The extent of this pleasure is determined much less by the importance of the object than by the difficulty of the investigation.

There is no doubt that there are also objective and nevertheless purely

theoretical differences in the cognitive value of objects of knowledge. But their measure is simply the extent to which they contribute to the totality of knowledge. A single datum, unless it becomes a building stone in a more general cognitive structure, remains nothing more than an object of idle curiosity. Thus, in the scientific sense, "fact" is already a teleological concept. Not every phenomenon of reality qualifies as a fact. A phenomenon qualifies as a fact only if — to state the matter quite briefly — science can learn something from it. The validity of this point is most important for history. There are many events which do not qualify as historical facts. In the year 1780, Goethe had a door bell and an apartment key made. On February 22 of the same year, he had a letter case made. Of this there is documentary proof in a locksmith's bill. Hence it is completely true and certain to have happened. Nevertheless it is not an historical fact, neither a fact of literary history nor of biography. On the other hand, within certain limits it may be impossible to determine a priori whether or not the value of a "fact" can be ascribed to a given datum of observation or historical documentation. Science must therefore act like Goethe in his old age: to gather and accumulate everything it can get hold of. Then it can rejoice in the knowledge that it is not neglecting anything that might at some time prove useful. It can have the confidence that the task of future generations, insofar as it has not suffered from the external and arbitrary accidents of historical transmission, may be compared to the work of a large sieve that retains the items that are useful and allows those that are useless to drop through.

Consider this essential objective of the single datum of knowledge: its incorporation into a more extensive whole. There is no sense in which this aim is restricted to the inductive classification of the specific datum under the generic concept or the general proposition. This objective is met equally well in a case in which the individual feature is incorporated as a significant component of a total organic conception. The commitment to the generic is a bias of Greek thought, perpetuated from the Eleatics to Plato, who found not only real being but also real knowledge only in the general. From Plato this view passed to our day. Schopenhauer makes himself a spokesman for this prejudice when he denies history the value of a genuine science because its exclusive concern is always with grasping the specific, never with comprehending the general. It is no doubt correct that there is a great deal that the human understanding can grasp only by comprehending the common content of diffuse and fragmented particulars. But the more we strive for knowledge of the concept and the law, the more we are obliged to pass over, forget, and abandon the singular fact as such. We can see this disposition in the characteristically modern attempt "to make history into a natural science" — the project of the so-called positivist philosophy of history. In the final analysis, what is the product of such an inductive system of laws of the life

of a people? A few trivial generalities which can be excused only on the basis of a careful analysis of their numerous exceptions.

In opposition to this standpoint, it is necessary to insist upon the following: every interest and judgment, every ascription of human value is based upon the singular and the unique. Simply consider how swiftly our emotions abate whenever their object is multiplied or becomes nothing more than one case among thousands of others of the same sort. "She is not the first," we read in one of the most terrifying texts of *Faust*. Our sense of values and all of our axiological sentiments are grounded in the uniqueness and incomparability of their object. This is the basis of Spinoza's theory of the transcendence of the emotions by knowledge. For Spinoza, knowledge is the submersion of the particular in the general, of the unique and the ephemeral in the eternal.

Every dynamic and authentic human value judgment is dependent upon the uniqueness of its object. It is, above all, our relationship to personalities that demonstrates this. It is not an unbearable idea that yet another identical examplar of a beloved or admired person exists? Is it not terrifying and inconceivable that we might have a second exemplar in reality with our own individual peculiarities? This is the source of horror and mystery in the idea of the *Doppelgänger* — no matter how great the temporal distance between the two persons may be. It has always been painful to me that a people as refined and sensitive as the Greeks could tolerate one of the doctrines which persists throughout their entire philosophy. According to this doctrine, the personality itself — with all its actions, afflictions, and passions — will also return in the periodic recurrence of all things. Life is debased when it has already transpired in exactly the same way numerous times in the past and will be repeated again on numerous occasions in the future. Consider the dreadful idea that as the same person I have already lived and suffered, striven and struggled, loved and hated, thought and desired exactly the same things and that when the great cosmic year has elapsed and time returns I shall have to play exactly the same role in the same theater over and over. This point concerning individual human life has even more force when it is applied to the total historical process: this process has value only if it is unique. This is the principle which the Christian philosophy of the Church Fathers successfully maintained against Hellenism. From the outset, the fall of man and the salvation of the human race had the status of unique facts situated at the focal point of the world view of the Church Fathers. This was the first significant and powerful insight into the inalienable metaphysical right of historiography: to maintain the past in its unique and unrepeatable reality for the recollection of mankind.

On the other hand, general propositions are necessary at every stage of inquiry in the idiographic sciences. And these they can borrow only — with perfect legitimacy — from the nomothetic disciplines. Every causal explana-

tion of any historical occurrence presupposes general ideas about the process of things on the whole. When historical proofs are reduced to their purely logical form, the ultimate premises will always include natural laws of events, in particular, laws of mental events or psychological processes. Consider someone who has no idea at all concerning how men in general think, feel, and desire. It would not only be impossible for him to comprehend individual happenings in order to acquire knowledge of events and processes. He would already have failed in the critical determination of historical facts. Under these conditions, of course, it is quite remarkable that the claims which the historical sciences make upon psychology are so undemandingly lenient. The notoriously incomplete formulations which the laws of mental life have been able to achieve thus far have never stood in the way of historians. By means of natural common sense, tact, and genial intuition, they have known quite enough in order to understand the heroes of history and their conduct. This fact provides material for serious reflection and makes it appear doubtful that the most recently projected mathematical-scientific conception of elementary psychological processes will make a significant contribution to our understanding of real human life.

In spite of the shortcomings in the details of the above exposition, it clearly follows that in the total synthesis of knowledge, which is the ultimate aim of all scientific research, these two cognitive moments remain independent and juxtaposed. The general nomological regularity of things defines the space of our cosmic scheme; it transcends all change and expresses the eternal essence of reality. Within this framework, we find the vital development of the structure of all the individual forms which have value for the collective memory of humanity.

These two moments of human knowledge cannot be derived from a common source. Consider the causal explanation of the single phenomenon as the reduction of this phenomenon to general laws. This may indeed give us the idea that, in the final analysis, it must be possible to understand the singular historical form of the real event as a consequence of the general laws of nature. This is what Leibnitz means when he claimed that, ultimately, the sufficient grounds or principles of all *vérités de fait* lie in *vérités éternelles*. However Leibnitz was only able to postulate this for divine thought; he could not demonstrate it for human thinking.

The foregoing point can be clarified by means of a simple logical scheme. From the perspective of causality, every individual event assumes the form of a syllogism. The major premise is a law of nature, a collection of nomological necessities, for example. The minor premise is a temporally given condition or the totality of a set of such conditions. The conclusion of the syllogism is the individual event itself. In the same way that the conclusion logically presupposes these two premises, so the event presupposes two kinds of cause:

on the one hand, the timeless necessity in which the constant nature of things is expressed; on the other hand, the specific condition which appears at a certain moment in time. In one sense — the nomothetic sense of causation — the cause of an explosion lies in the nature of the explosive material itself, expressed as physical and chemical laws. In the other sense — the idiographic sense of causation — it lies in a single event or motion, a spark, shock, or something similar. Only both together cause and explain the event. But neither cause is a consequence of the other. The relationship between these two kinds of causation is not grounded in the causes themselves. In a deductive syllogism, the minor premise is an independent proposition which is not derived from the major premise. Likewise, in the causal explanation of an event, the existing condition which is appended to the general nature of the case is not derived from this general, nomological nature. Rather, since this condition is a temporal event, it is a consequence of another temporal condition, from which it follows with lawlike necessity — and so on, ad infinitum. It is logically impossible to identify the first member of this infinite sequence. And even if we attempt to represent it in an imaginary fashion, such an initial state is always something completely novel. It is appended to the general nature of things. Therefore it is not a logical consequence of this general nature. Spinoza articulated this point in his distinction between two forms of causality, infinite and finite. The brilliant simplicity of this distinction eliminates many of the difficulties concerning the "problem of the plurality of causes" which have troubled more recent logicians. In the language of contemporary science, this point could be expressed in the following way. A description of the present state of the universe follows from the general laws of nature only if the immediately preceding state of the universe is presupposed. But this state presupposes the state that immediately precedes it, and so on. Such a description of a particular, determinate state of the arrangement of atoms, however, can never be derived from the general laws of motion alone. The definitive characteristics of a single point in time can never be immediately derived from any "cosmic formula." The derivation of the description of a single temporal point always requires the additional description of the previously existing state which is subordinated to the law.

General laws do not establish an ultimate state from which the specific conditions of the causal chain could ultimately be derived. It follows that all subsumption under general laws is useless in the analysis of the ultimate causes or grounds of the single, temporally given phenomenon. Therefore, in all the data of historical and individual experience a residuum of incomprehensible, brute fact remains, an inexpressible and indefinable phenomenon. Thus the ultimate and most profound nature of personality resists analysis in terms of general categories. From the perspective of our consciousness, this incomprehensible character of the personality emerges as the sense of the indeterminacy of our nature — in other words, individual freedom.

There are many metaphysical concepts and problems which have their source in this point. The concepts may be misleading and unfortunate. And the problems may be mistaken and badly framed. Nevertheless, the ground or motive for both still remains. The totality of temporally given phenomena seems to be independent of the general nomological laws according to which these phenomena occur. The content of the cosmic process cannot be understood as a consequence of its forms. Consider all the attempts to derive the concept of the particular from the general, the "many" from the "one," the "finite" from the "infinite," and "existence" from "essence." This is the point at which all of these attempts miscarry. The great philosophical systems which undertake to explain the cosmos may have been able to conceal this breach, but they have not been able to repair it.

Leibnitz perceived this when he ascribed the origin of *vérités éternelles* to the divine understanding and the origin of *vérités de fait* to the divine will. Kant saw the same point. In his view, all the data given in perception fall under the forms of the intellect and can be classified and understood accordingly. In this fortunate but incomprehensible fact, Kant perceived an intimation of a divine teleology which greatly transcends our own theoretical knowledge.

In fact, thought can contribute nothing further to the resolution of these questions. Philosophy can identify the limits of knowledge in each of the individual disciplines. Beyond these limits, however, philosophy itself can no longer establish any substantive conclusions. The law and the event remain as the ultimate, incommensurable entities of our world view. This is one of the boundary conditions where scientific inquiry can only define problems and only pose questions in the clear awareness that it will never be able to solve them.