

PROBLEMS *of* PHILOSOPHY

AN INTRODUCTORY SURVEY

REVISED

BY

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PREFACE TO REVISED EDITION

In this edition numerous changes, both in the general plan of exposition and in detailed statement, have been made in this book. The changes have been designed to enlarge the context of the discussion and to focus it more consecutively upon the basal issues. The aim of the volume remains as stated in the Preface to the first edition; it is hoped that the changes here made will serve to render it a more effective instrument for the accomplishment of that aim.

The general plan of exposition of the earlier edition has been modified as follows: Part I has been condensed into an Introduction occupying about half as many pages; Part II has been considerably expanded, and appears here as Part I; Parts III, IV, and V have been combined into a single Part (Part II), with a consequent merging of chapters, the content of the old Chapter XIX appearing here in a somewhat expanded form as Chapter VI of Part I; Part VI has been made into Part III, and the content of Chapter XXVII has been placed before that of Chapters XXV and XXVI, which have been combined into one chapter as have Chapters XXIII and XXIV. The purpose of these modifications was to attain a more continuous discussion of each of the several problems dealt with than the somewhat broken exposition of the earlier edition seemed to achieve.

The principal changes in detailed statement are the following: the theory of judgment, briefly indicated in the earlier edition, is developed in some detail and made basal to much of the argument; the problem of causality has been set in a more definite context, and its relation to the problem of implication has been explicitly considered; a new chapter on valuation has been inserted as introductory to the further

discussion of problems of value; new material has been added throughout, and the old material, where used, has not infrequently been more or less modified in form; finally, a lengthy historical note on some phases of the major theories of knowledge from Descartes to Hegel has been added to the volume as an Appendix. This addition has been made in the belief that it presents valuable information for one who, unacquainted with this historical material, wishes to make a more thorough study of the issues raised in Part I than is given by the elementary analysis furnished by the text of that Part; certainly the historical debate touched upon practically all the fundamentals, and one who follows it even with half an eye must profit thereby. If, however, the addition prove useless or superfluous in the case of any reader, the remedy is obvious and ready to his hand.

The "Questions and Exercises" attached to each chapter of the original edition and the bibliographical note have been eliminated from this one; they seemed to be of doubtful pedagogical value according to reports received from users of the book in the classroom. In their stead a list of references has been inserted, roughly classified into elementary and advanced, for the guidance of those who wish to read beyond the text. References on special points are given throughout in the footnotes and should, of course, be consulted in connection with those points. Everywhere effort has been made to direct the reader's attention to the classics of philosophy. An index of subject-matter, as well as of names, has been added.

In the work of revision the author has been greatly aided by colleagues who have generously taken time to make suggestions concerning the weaknesses of the earlier statement and to indicate ways of remedying them. Among these, the following deserve special thanks: Professors E. G. Bewkes, E. S. Brightman, S. McC. Butt, Alburey Castell, Marjorie S. Harris, C. K. Davenport, H. A. Larrabee, M. H. Moore, Maurice Picard, H. G. Townsend, G. D. Walcott, and Irl

G. Whitchurch. Thanks are also due to Professor E. A. Burt for suggestions concerning the proper use of the material of the Appendix and for his kindly interest in the enterprise as a whole.

G. W. C.

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PREFACE

The aim of this book is two-fold: to give a preliminary survey of some of the problems of philosophy in as direct and simple a manner as possible, and to encourage on the part of the beginner a reasoned consideration of them. To this end the effort has been made to emphasize some of the main features of the method of reflective thinking, to indicate broadly how the problems arise out of experience, to give some of the high points in the historical background of the several problems presented, to suggest the main drift of thought upon the problems, and to direct attention to some of the factual data relevant to the debate. The choice of problems has been partly determined by consideration of the purposes of the book and the interests of those for whom it is primarily written. It is hoped, however, that all of the more basal problems have at least been touched upon. In any event, the book does not presume to compass philosophical problems in their entirety or to treat those discussed in any very thorough-going fashion; above all, though the discussion is necessarily colored by the writer's point of view, the book does not undertake to outline or defend any system of philosophy. If the problems presented have been formulated in such a manner as to enable the beginner to feel their push, and if their discussion has been so oriented as to encourage and assist him to pursue them beyond the letter of the text out into their broader reaches, the book may be said to have accomplished its primary purpose.

Instead of giving a separate summary survey of the main historical systems of philosophy, as is sometimes done in introductory texts, I have undertaken the more difficult (but I think more fruitful) task of weaving the relevant histori-

cal material into the consideration of the problems as they severally arise. This promises more for the student, even if it makes greater demands upon the author; I can only hope that I have escaped from at least the more dangerous pitfalls that beset such an undertaking. The questions and exercises at the end of each chapter are designed partly to test the student's comprehension of the text but primarily to open doors for his further studies. No general reading lists are set down in connection with the various chapters; it seemed more profitable to make the references as direct as possible, and this has been undertaken in the footnotes and the questions and exercises. The appended bibliographical note gives in alphabetical order the books to which reference is made in the exercises; other books referred to in the footnotes scattered throughout the text are not here listed. Since the headings of the various sections give in itemized manner the material of the book, I have not thought it worth while to burden it with an index of its subject-matter; the index is, consequently, limited to names.

In the course of the preparation of the book many helpful suggestions and criticisms have been received from my colleagues, Professors A. P. Brogan, F. A. C. Perrin, and E. T. Mitchell, of the Department of Philosophy and Psychology in the University of Texas. Professor Brogan read the larger portion of the first draft of the manuscript and gave me the advantage of many pointed criticisms; Professor Perrin enabled me to view through the psychologist's eyes the earlier chapters on the problem of mind; and Professor Mitchell rendered invaluable service in the tedious task of proof-reading, while his numerous suggestions, always helpful, not infrequently resulted in the decided improvement of both the form and the content of the book. Mr. C. M. Perry and Mr. S. G. Slavens, student assistants in philosophy, gave generously of their time to verify the numerous references. To all of these I grate-

fully acknowledge my indebtedness, as also to my wife, whose sympathetic interest in the progress of the work and many suggestions concerning puzzling questions of exposition have been of the greatest assistance to me.

G. W. C.

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INTRODUCTION

Diogenes Laertius,
Lives, 1.8.

Pythagoras was the first person who invented the term Philosophy, and who called himself a philosopher; . . . for he said that no man ought to be called wise, but only God. For formerly what is now called philosophy was called wisdom and they who professed it were called wise men, as being endowed with great acuteness and accuracy of mind; but now he who embraces wisdom is called a philosopher.

Plato,
Republic, Book V, 475.

And may we not say of the philosopher that he is a lover, not of a part of wisdom only, but of the whole?

Yes, of the whole.

And he who dislikes learning, especially in youth, when he has no power of judging what is good and what is not, such an one we maintain not to be a philosopher or lover of knowledge, just as he who refuses food is not hungry, and may be said to have a bad appetite and not a good one?

Very true, he said.

Whereas he who has a taste for every sort of knowledge and is curious to learn and is never satisfied, may justly be termed a philosopher. Am I not right?

Glaucon said: If curiosity makes a philosopher, you will find many a strange being will have a title to that name. All the lovers of sights have a delight in learning, and must therefore be included. Musical amateurs, too, are a folk strangely out of place among philosophers. for they are the last persons in the world who would come to anything like a philosophical discussion, if they could help, while they run about at the Dionysiac festivals as if they had let out their ears to hear every chorus; whether the performance is in town or country—that makes no difference—they are there. Now are we to maintain that all these and any who have similar tastes, as well as the professors of quite minor arts, are philosophers?

Certainly not, I replied ; they are only an imitation.
 He said: Who then are the true philosophers?
 Those, I said, who are lovers of the vision of truth.

Aristotle,
Metaphysics, A, 982^b

It is owing to their wonder that men both now begin and at first began to philosophize ; they wondered originally at the obvious difficulties, then advanced little by little and stated difficulties about the greater matters, e.g., about the phenomena of the moon and those of the sun, and about the stars and about the genesis of the universe. And a man who is puzzled and wonders thinks himself ignorant (whence even the lover of myth is in a sense a lover of Wisdom, for the myth is composed of wonders) ; therefore since they philosophized in order to escape from ignorance, evidently they were pursuing science in order to know, and not for any utilitarian end.

As is emphasized in all three of the quotations given above, philosophy in its original conception was identified with the love of wisdom. This, indeed, is precisely what the Greek word *philosophia* (*phileo*, love + *sophia*, wisdom) means. But it was conceived as the love of wisdom in a special sense—in the sense, namely, of being a desire for full and adequate knowledge. As Aristotle points out, this love of wisdom is motivated by wonder ;¹ and wonder is engendered by difficulties, problems, whether little or great. Or, as Aristotle otherwise expresses the point, philosophizing is for the purpose of escaping from a state of ignorance and attaining a state of knowledge. And the knowledge sought, Plato tells us, is the “wisdom of the whole” or the “vision of truth.”

This description of philosophy holds in principle, now as then. The main body of the present elementary survey will undertake to indicate something of the nature of the discipline called philosophy, by considering some of its problems and its method of approach to their solution. The immedi-

¹ Compare Plato, *Theætetus*, 155^d: “This emotion of wonder is very proper to a philosopher ; for there is no other starting-point for philosophy.”

ately following preliminary remarks will inquire into that "wonder" whence, according to Plato and Aristotle, the discipline springs.

§ 1. *The individual and the environment*

Viewed from within, the life which we human beings live is constituted by sundry desires and interests. We desire food, shelter, property, association with our fellows, and the esteem of those whose good-will we cherish; and we are everywhere interested, in some measure at least, in the mysterious and puzzling. These wants and interests, together with our endeavors to satisfy them, are precisely what is meant by living so far as living is something more than a set of physiological processes. They are the "will to live," if we may borrow Schopenhauer's expressive phrase.

Throughout our lives, also, we find ourselves in the midst of an environment which is very complex and is inextricably involved in our efforts to fulfil our wants and interests. It is the situation within which alone it is possible for us to live. It aids or hinders our endeavors. It is always there to be taken into account; whether it makes for our weal or woe, it is in a very profound sense the matrix of life.

This environment presents two aspects which it is important for our present purpose to distinguish. These are the physical and social aspects. (i) The physical environment is that order of entities with which we are in bodily contact and of which our own bodies are the product. It is the spatio-temporal order of things and events to which we are bound by virtue of our physiological nature. The laws of this order we call physical laws, its structure we call the physical world; and both its laws and structure, we commonly suppose, are immutable. (ii) The social environment is an order of quite another sort. It is the order manifested in the varied customs, traditions, beliefs, and types of organization which obtain within the social group

into which we are born. It is, in short, the order of social institutions. The laws and structure of this order are not so readily determinable as are those of the physical environment; and they are more amenable to our own manipulation and modification. But they are not of the individual's making, and they exert an influence upon him which is compelling.

The demands made by this dual environment must be met by the individual if he is to live at all, and they must be met well if he is to live well. Its matter and its distances, its growth and decay, its customs and traditions, its uncritical beliefs and reasoned convictions—all of these are hard facts whose claims upon him are incessant. Nor can they be escaped; they must be reckoned with in one way or another. On his part, however, the individual is not merely the plaything of the environment. Though not infrequently helpless before it and forced to yield to its agencies, he nevertheless meets its claims with a type of response that does not belong to sticks and stones nor, apparently, to the other forms of life below him in the scale of living things.

This type of response we may shortly designate as intellectual. It presents two aspects which need to be distinguished before we proceed and which may be named the *cognitive* and *evaluative* aspects. (i) In its cognitive aspect, the primary function of intelligence is that of interpreting or, as we commonly say, understanding the environment. On this side, intellectual activity consists in formulating and solving problems, in disclosing meanings both by apprehending them and by inferring from one meaning-situation to another. By means of it language is created, symbols are employed, and all forms of scientific achievement are made possible. (ii) In its evaluative aspect, however, the function of intelligence is somewhat different. On this side it is appraisal or dispraisal of situations, response to them as having, or lacking, worth. It gives rise to our sundry estimates of the good and bad, the useful and the useless, the

beautiful and the ugly and, so, underlies our various systems of ethics and social philosophies as well as our numerous religions.

Intelligence, then, is a dual response which man makes to his environment: it is his interpretation and evaluation of that environment. But it grows directly out of his more primitive needs, and this fact calls for emphasis. He desires food and shelter, and to secure these intelligent behavior in respect to the environment is demanded; to get the desired food or shelter he must, in some measure, understand those circumstances that condition his desires. Again, if he is to fulfil his social interests and secure the good-will of his fellows, he must at least adapt his behavior to theirs in such manner as to avoid prolonged and irreconcilable conflict with them; and this can be done only through insight into the social situation in which he finds himself placed. And those broader interests which constitute what we commonly call man's curiosity about his world and his own place in it, interests that are as basal in human experience as are the more primitive desires for food and shelter, can be gratified only through the fullest development of intelligence in both its cognitive and evaluative aspects. The problem of the youthful Shelley,

Whence are we and why are we? Of what scene
The actors or spectators?

is thus a universal problem, arising as it does out of the deeper drift of human experience. And the answer to it can be had, if at all, only by him whose intellectual powers are set at the fullest stretch.

Thus intelligence is a natural outgrowth of life itself; it is the full flower of those desires and interests that are the basal drive of human life and experience. And it is oriented in the direction of the circumstances within which that life is actually lived. Following intelligence, then, man is at once seeking the completion of his deeper needs and enter-

ing into the meaning of his environment. His intellectual enterprise is both a process of self-expression and of penetration into the environment about him.

§ 2. *Common sense and science*

This intellectual enterprise presents different stages or phases which need to be distinguished. And we begin with the familiar distinction between common sense and science.

(a) Loosely described, common sense may be said to be the aggregate of views which by any group is commonly held without serious question. When we say that something is a matter of common sense, we generally mean that it is so obviously the case that no one in his "senses" would think of denying it or of calling it in question. If we are to set down such views under the heading of "knowledge,"¹ then we may say that common-sense knowledge is knowledge of the first look, knowledge which is "self-evident" or "obvious" to anyone who is possessed of "normal" intellectual powers.

An important characteristic of common sense is its inclusiveness. When we speak of common-sense views we ordinarily have in mind views which concern primarily the physical environment, the structure and behavior of physical objects existing in space and time. But such views do not exhaust the content of common sense, which is much broader. There are common-sense views about the individual himself and about his social environment as well. There is a common-sense psychology, a common-sense ethics, a common-sense economics, a common-sense religion; and

¹ Plato, for instance, would not thus apply the term. He would call such views "opinion" or "belief," reserving the term "knowledge" for our more rigorously reasoned convictions. And many other philosophers would agree with Plato in this. Such philosophers maintain that there is a very sharp difference between belief and knowledge. The question will be discussed below, when we take up for consideration the nature and certainty of knowledge.

these must not be left out of the reckoning when we make up the account of the scope of common sense. That scope is in fact quite catholic; views about the individual and the whole of his environment are, in one way or another, included in it. And this is the case at whatever stage of the intellectual enterprise the common sense in question may be taken.

Common sense is integral to the intellectual enterprise itself. It is, one may say, a sort of summation of the results of that enterprise at a given stage of its development. When viewed from the standpoint of any individual, common sense is the stock-in-trade with which he begins his own intellectual adventure. Into it he is born intellectually, and, if he ever succeeds in advancing beyond it, it remains both the point of departure and the partially determining factor of his further intellectual advance. It is, in short, a given cross-section of man's cultural progress and is dynamic within it.

This is equivalent to saying that common sense is a set of theories concerning ourselves and our world. Since common sense supposes itself to be free of theory and not infrequently presumes to set itself up as solid against theorizing, its essentially theoretical character needs emphasis. And little reflection is required to disclose this character. Physical objects, for example, clearly do not appear in direct perceptual experience precisely as common sense says they actually are. The sun appears to rise in the east and set in the west, but common sense (of our age, at any rate) holds that the sun is stationary in relation to the earth; physical objects appear to change their sizes as their distances from the observer increase or diminish, but common sense asserts that their sizes remain constant; a cavity in a tooth seems large when felt by the tongue and small when seen through a dentist's mirror, but common sense assumes that its dimensions in no way change with the organ by which they are perceived. In short, physical objects often

appear to possess characteristics which common sense unequivocally denies they do possess. Again, with reference to ourselves common sense is at variance with what unquestionably appears to be the case. Our minds and our bodies change continuously throughout life, but common sense insists that each remains the same in spite of the changes. And the same holds in principle of common-sense evaluations: common-sense ethics and religion are elaborate theories shot through with (un-noted) assumptions. Everywhere common sense is a set of theories; it is not a mere direct mirroring of "fact," but is a complex of interpretations and evaluations.

The common-sense views held at any given level of cultural development are largely inherited from preceding levels. And the media through which these views are transmitted are chiefly language and customs. They are the intellectual legacy of the past transmitted to the present through the instrumentality of the conservative forces of the life of the group. But in the course of transmittal these views are gradually modified in such manner as to change more or less markedly from age to age of the historical process. In many important respects, for example, the common sense of the Greeks differs from that of medieval Europe and this, in turn, differs from that of modern Europe. Furthermore, different cultures are quite at variance in respect of what is held to be common sense. The Occident and Orient, for instance, exemplify marked contrast in their common-sense views, especially on social and religious matters. The truth is that there are many common senses, not one, and to speak of them as if they were all and everywhere identical or harmonious is to fall into the fallacy of mistaking a name for that which the name signifies. One may indeed say, as we have said above, that there is a common characteristic of those views which are called common-sense views, namely, that they are such views as are by any generation of human beings held without question. But one must

not overlook the fact that the body of views thus accepted by one generation, or even by one community, may vary widely from, and even be contradictory of, views accepted equally unquestioningly by another, and are equally entitled to be called common-sense views.

Such considerations raise at once the question concerning the significance of common sense. For these considerations seem to imply that the interpretations and evaluations which issue in those beliefs and opinions called common sense are apparently without solid foundation; otherwise, it is not easy to understand why they should vary as they do and why among these variations unresolved contradictions should remain. The question is therefore inevitable whether they are solidly founded.

(b) This question, however, common sense itself is not able to answer. A common-sense body of beliefs and opinions rests its claims to acceptance on its "self-evident" character. But this "self-evidence" is grounded in assumptions which need to be checked and which common sense itself is incompetent to check, because it moves within the beliefs as self-evident and has no method for going beyond. To go beyond requires a scepticism and an analytical technique which are foreign to the common-sense attitude. They belong to another intellectual attitude which we call scientific. The question concerning the significance and validity of the beliefs of common sense thus reaches beyond the realm of common sense and into that of science.

Thus viewed, science may be said to be an extension of common sense. But it is an extension of such a character as to be in important respects quite different. It is, in the words of Thomas Huxley, "trained and organized common sense." Here is a difference of profound importance. The essence of science lies in a critical technique which is lacking to common sense: the theorizing which results in what we call scientific knowledge is much more rigorously con-

trolled than is that which issues in the views of common sense (except, of course, where common-sense views are derived from science, as not infrequently happens), more penetrating in its analyses, more far-reaching in its scope, more carefully guarded in its evaluations and interpretations. If, then, science is to be called an extension of common sense, this difference must not be overlooked; the knowledge science gives us about ourselves and our environment is critical and ordered to a degree which common sense never attains. Some of the details of this basal difference between the two call for separate emphasis.

In the first place, scientific knowledge is characterized by an *accuracy* that is unknown to common sense. Science is not satisfied with vague guesses or statements based upon hearsay or tradition; on the contrary, everywhere she demands definiteness and precision. The true scientist is always possessed of what Huxley calls "the fanaticism of veracity"; he is not satisfied until he has attained exactitude. This search for accuracy leads in two directions primarily: *accuracy of observation* and *accuracy of description*. And each of these may be briefly described.

The first demand of science is that the relevant facts in the case be unprejudicedly, precisely, and adequately observed. Upon this foundation of accurate observation modern science is mainly built. During the Middle Ages it was fairly generally assumed that science could dispense with the observation of facts, or, at least, that observation was only of secondary importance for scientific achievement; then tradition was of more importance than observation, what was reported about facts was more eagerly sought after than acquaintance with the facts themselves. The earlier representatives of modern science, however, such as Copernicus and Galileo, inverted the emphasis and primarily sought for acquaintance with fact. This inversion of emphasis in scientific procedure was definitely formulated as

the correct method by Francis Bacon,¹ who insisted that accurate observation of nature herself is the indispensable first step in the acquisition of scientific knowledge. And all scientists since Bacon's day have, at least in principle, agreed with him on the point. So nowadays, by common consent, the first requisite of being a scientist is that one shall be a careful observer or be solicitous to base one's theories on the careful observations of others. To be sure, accurate observation is not easy: it is far easier to mingle imagination with observation, as common sense usually does, and to report for a fact what is only an approximation or what one imagines or prefers. But science demands the more difficult task. She accepts no short-cuts, nor will she be content with mere guesses or prejudices. "Man, unscientific man, is often content with 'the nearly' and 'the almost.' Nature never is. It is not her way to call the same two things, which differ, though the difference may be measured by less than the thousandth of a milligramme or of a millimetre, or by any other like standard of minuteness. And the man who, carrying the ways of the world into the domain of science, thinks he may treat Nature's differences in any other way than she treats them herself, will find that she resents his conduct."² In nature's domain facts are as they are; and in the domain of science, which purports to be faithful to nature, accurate observation is alone acceptable.

Not only does science require that facts be observed with precision, it also demands that what has been thus observed be faithfully reported. In scientific description nothing must be arbitrarily added, nor must anything be subtracted. "The assertion that outstrips the evidence is not only a

¹ Bacon's important treatise on the subject is the famous *Novum Organum* (1620), so named to indicate its opposition to Aristotle's *Organon* the logic of which was, in Bacon's view, at the bottom of the erroneous conception of science held during the Middle Ages.

² From Sir Michael Foster's presidential address before the British Association for the Advancement of Science, 1899. Compare F. K. Richtmyer, "The Romance of the Next Decimal Place," *Science*, 1932, Volume 75, pp. 1-5.

blunder but a crime," Huxley urges. Here Huxley primarily intends, no doubt, to condemn the common practice of basing conclusions on insufficient evidence. But his phrase is equally apt in condemnation of the tendency, no less common and perhaps even more difficult to control, to report carelessly the results of *observation*. Such a tendency can find no place in the mind of the true scientist.

The first characteristic of scientific knowledge, then, is accuracy in both observation and description. And accuracy in both directions is essential: apart from either accurate observation or accurate description of what is observed scientific knowledge is simply impossible. But besides this characteristic of accuracy there are two others which must not be overlooked, since they are equally essential.

One of these is what we may call *generality*. Scientific knowledge, in addition to its interest in the particulars of observation, is concerned with general principles or laws. The scientist does not limit himself to the observation and description of this or that particular fact; indeed, he is not interested in the isolated fact for its own sake alone. To be sure, he must apprehend the facts; and to this end, he must accurately observe and describe them. But his chief interest is to read out of them what they have in common with other similar facts—in short, to see them in their relations with each other. The physicist, for instance, in his capacity as scientist, is not content merely to observe and accurately to record the peculiarities of the motion of a given ball rolling down a given inclined plane or dropped from a given height. He is interested in this, of course, but he is more interested in discovering why any ball whatever should move as this one does move and what this particular ball, *as moving*, has in common with other moving objects whether balls or worlds. #In other words, he wants to discover something general about the nature and laws of motion itself as exemplified in what he is observing; he is

concerned with the universal characteristics of the special object of observation. And this is true universally of scientists. They are primarily interested, not in the isolated facts which they observe, but in the general relating principles that shine through what is observed. In this sense, scientific knowledge is "universal"; its goal is generalization. And in this respect, once again, it is in marked contrast to common-sense knowledge, which is satisfied to move among particular things and events without making serious effort to penetrate beneath the surface to their connecting bonds.

Another characteristic of scientific knowledge is that it is *systematic*, is, in other words, organized knowledge. It is a system in which various bits of information find their respective places and interlock in such manner that contradiction is reduced to a minimum. If apparent contradictions arise within it, an important problem is at once created for the scientist; and he is not content until the appearance of contradiction is removed. Or if the apparent contradictions turn out to be real ones, he feels himself compelled even to revise his previous formulation so as to resolve them. This aspect of scientific knowledge is closely connected with its universality: the scientist searches for generalizations in terms of which observed facts may be brought together into a coherent body of propositions, and the search for these generalizations is on the other side a search for such a body of propositions. The goal of the scientist is the construction, within limits, of an organized body of knowledge; and this is attained through generalizations, which are controlled throughout by that ideal. The systematic nature of scientific knowledge, once more, sharply differentiates it from common-sense knowledge, which is haphazard and not infrequently content to entertain unresolved contradictions.

(c) The differences between science and common sense above noted are basal. They indicate the ground of the superior trustworthiness of scientific knowledge. Both science and common sense spring from intellectual activity,

but science alone is characterized by a critical technique. Thus the intellectual activity which is properly to be called scientific is safeguarded in a manner impossible for common sense. This is what we mean when we say that there is more intelligence in science than in common sense. In the former, interpretations and evaluations are more carefully checked and tested, more intimately linked with the environmental situations which are the objects of interpretation and evaluation. And this is equivalent to saying that science marks a more advanced stage in the intellectual enterprise.

Before passing on to a consideration of the rôle philosophy plays in that enterprise, we must pause to note that there are many sciences. And this is sufficiently important to be considered in a separate section.

§ 3. *Classification of the sciences*

In a sense it is true that there is no science in general, but only special sciences. The rigorous and systematic character of scientific procedure does, indeed, enable us to speak of science, as we have done in the preceding section. Clearly, however, science thus conceived is identical with scientific method. Viewed from the standpoint of content, there is no science; there are only sciences, various bodies of scientific knowledge.

In the preceding section we spoke likewise of common senses, various bodies of common-sense opinions and beliefs; but we made no attempt to classify them. It is in fact impossible to do so, since there is no basis or principle of classification other than that of bare enumeration—the common sense of this or that historical group. In the case of the sciences, however, the situation is different; there are here logical principles of classification.

The attempt to work out an exhaustive classification of the sciences would lead us into discussions which are foreign

to our purpose and, so, cannot here be undertaken.¹ We shall content ourselves with more general considerations, and broadly distinguish two groupings that stress matters of concern to our immediate task.

(a) One important classification is that which divides the sciences into four main groups: the physical sciences, the biological sciences, the social sciences, and the formal sciences. A few remarks about each of these groups may serve roughly to indicate their distinguishing characteristics.

(1) Many of the sciences are devoted to a consideration of the problems that arise primarily in connection with our inorganic physical environment. Their aim is to discover the structure of inert matter and the transformations of energy that manifest themselves in the changes in process within the material order; in other words, to observe and explain the phenomena of the physical environment. These are the physical sciences. Among them are physics, chemistry, geology, and astronomy. Physics and chemistry are perhaps fundamental within the group in the sense that they supply certain basal principles upon which the others are more or less directly built.

Some of the oldest sciences of our civilization are found within this group. One reason for this, probably, is the fact that the first and most pressing needs of life have to do with the physical environment. Man's attention was thus necessarily early turned towards the problems arising from this part of his world. The primitive needs of food, shelter, and fire for the very existence of life; the later necessities of water and grass for flocks and herds upon which the existence of the pastoral group depended; the fundamental importance of soil, climate, and seed at the agricultural stage of civilization; and the still later demands of com-

¹ If the reader is interested in the question, the fourth chapter of J. A. Thomson's *Introduction to Science* may be consulted. A somewhat detailed statement will be found in R. Flint's *History of Classifications of the Sciences*.

mercial undertakings and the travel incident thereto—all of these forced man very early to study with some care the nature of his physical environment. The religious interest of humanity, too, is doubtless a potent factor in the early emergence of the physical sciences, since many of the objects of nature—such as the sun, moon, the stars, the earth, air, fire, and water—were among the earlier objects of worship.

The recent rapid progress of the physical sciences has greatly impressed the popular imagination, especially because of the numerous inventions that have resulted from their discoveries. So true is this, indeed, that the term *science* in its popular usage denotes the physical sciences almost, if not quite, exclusively.¹ While it appears that this usage lacks justification, no one can question the tremendous significance, theoretical as well as practical, of the results achieved by this group of sciences. They have disclosed many of the secrets of the physical environment, from the tiniest particle of matter to the unimaginable depths of space, and their sweeping generalizations are progressively reducing the phenomena of this order to fewer and more comprehensive laws. They seem ever to be converging upon conceptions relatively few in number and of far-reaching application.

(2) A second group of the sciences undertakes to discover the nature of organic matter, to reveal its structure and functions, and to formulate the laws of its activity and reproduction. This is the group of the biological sciences. In

¹ John Mills, for example, in his *The Realities of Modern Science*, identifies science with physical science, indeed practically with physics. This book, by the way, presents an interesting and fairly comprehensive account of some of the more important details in the development of the physical sciences to the date of its publication, 1919. The first two chapters of the second volume of Merz's *History of European Thought in the Nineteenth Century* contain much valuable information concerning the more theoretical side of this development during last century. Dampier-Whetham's *A History of Science and Its Relations with Philosophy and Religion* is a more recent survey (1929).

this group the sciences of botany and zoology are fundamental.

In a general way the history of the biological sciences can be traced back to the ancient Greeks, particularly to Aristotle.¹ Nevertheless, they have only comparatively recently come into prominence. During the last century they have made great progress in discovering the fundamental characteristics of life as it rides to its expression in generations of organisms. Three conceptions of fundamental significance in connection with the problem of life have been emphasized by them. These are: the conception of the cell as the morphological unit of all life, the conception of inheritance as the nexus between generations of living forms, and the conception of variation as the means whereby living forms are continuously altered. These sciences have also succeeded in formulating a general law of universal significance in the field of vital phenomena, namely, the law of evolution, which we shall consider in some detail later on in our study.

(3) The group of the social sciences is concerned with the sundry problems that arise in connection with the social environment. Their task is to study the nature of the human individual, both as an individual and as a member of society, and to set forth the general principles that are operative within the social order. As typical of the group and

¹ Aristotle (385-322 B.C.), son of Nicomachus who was court physician to the King of Macedonia, was one of the greatest of Greek thinkers. He ranks high among the half-dozen leading philosophers of the world; and he independently initiated a classification of the sciences, inaugurating many of them and making important contributions to most of them. He was especially interested in biological studies. His philosophy became the dominating influence in the thought of the last centuries of medieval Europe. During those centuries he was known as "the Philosopher" . . . the "master of those that know." He died in exile from Athens one year after the death of Alexander the Great, his most famous pupil. According to a doubtful tradition he left Athens to save the Athenians a second crime against philosophy, as he expressed it, the execution of Socrates being in his mind their first crime. It is certain, however, that he left Athens under political pressure.

at the same time of fundamental importance may be mentioned psychology both individual and social, history both political-institutional and intellectual, ethics, and economics.

The main lines of the development of the social sciences are not as clearly marked as are those of the physical and the biological sciences. This is due largely to the complexity of the phenomena with which the social sciences deal, a complexity which makes difficult the employment of a special technique of inquiry. But it can at least be said that these sciences have accomplished much by way of analysis of both individual and social consciousness, that they have disclosed many important features of present-day social organization and of the social life of various races in ages long gone by, and that they have brought into the open some of the basal characteristics of institutional development. Furthermore, their generalizations are tending to place more and more emphasis upon the fundamental importance of the individual within the social order as well as upon the essentially social nature of the individual.

(4) There are two sciences which do not properly fall within any of the groups so far mentioned. These are the sciences of logic and mathematics. These two sciences are peculiar in that they have for their subject-matter certain generalized forms of inference through which the human mind acquires and applies its knowledge of the environment, rather than some specific aspect of the environment itself. They study, not objects, but rather the way in which objects are known, the general forms under which the objects of knowledge fall. Hence they are sometimes called the formal sciences.

The attempt to state the discoveries of these two sciences would be useless apart from a somewhat detailed history of them. A word concerning each must here suffice. (i) In mathematics the ancient Greeks had already made considerable advances. Their great mathematical minds—Pythag-

oras, Plato, Euclid, and Archimedes¹—formulated precise definitions of point, line, surface, and volume; developed the simpler elements of arithmetic and geometry; and proved many theorems of plane geometry and of the relations between the circle and the sphere. The modern era has witnessed such magnificent achievements as the discovery of logarithms, of analytical geometry, of the calculus, of descriptive geometry, of projective geometry, and of non-Euclidean geometries. (ii) The development of logic since Aristotle, with whom it had its origin, has been along three main lines. The first emphasizes induction and scientific method; the second conceives of judgment as the element

¹Pythagoras (6th century B.C.) is supposed to have studied mathematics in Egypt, and probably in Babylonia. If the traditions concerning him may be trusted, he was much interested in pure geometry and in the mathematics of physics. The school he founded, called the Pythagorean school, carried on researches in the application of mathematical formulæ to physical phenomena, particularly sound. Many extravagances of theory crept into the later school and ended in idle speculations.

Plato (427-347 B.C.) came of an aristocratic family, his father claiming descent from the line of the Athenian kings. When a young man Plato fell under the influence of Socrates with whom he enjoyed an intellectual companionship for eight years. At forty years of age he founded a school at Athens known as the Academy, of which he was the directing head and chief inspiration until his death. His writings are very numerous. They are in form of dialogues, Socrates generally being the chief speaker. They are famous for their artistic value as well as their profundity of thought. Plato's views have entered into the very warp and woof of our own civilization.

Euclid (4th century B.C.) was professor of mathematics—arithmetic and geometry—in the famous school at Alexandria, Egypt. While there he prepared for the use of his students a treatise on geometry called *The Elements*, which even to-day constitutes an important part of elementary texts. When the King of Egypt inquired whether one could not learn geometry by some easier method than the study of the difficult *Elements*, Euclid is said to have replied: "There is no royal road to geometry."

Archimedes (3rd century B.C.), interested in pure mathematics and mechanics, is generally regarded as the greatest mathematician of antiquity. His most important work is entitled *Concerning the Sphere and the Cylinder*, which probably indicates the main line of his studies. He did work at problems of mechanics, however, and many inventions are attributed to him. He devised war-engines to aid in the defense of his native city, Syracuse, against the Romans in 212 B.C. When the city fell one of the Roman soldiers brutally killed the aged scientist while he was absorbed in the prosecution of his investigations.

of thinking, which finds expression in various types or ways of knowing, such as perceiving, conceiving, inferring, and the like, as well as in emotional and voluntary experience; while the third is primarily concerned with the analysis of propositions and their connections, and seeks to discover the underlying logical ultimates or indefinable concepts. Each of these types of logical theory emphasizes matters of importance in the field of logic, and each has exerted a greater or lesser influence on the history of philosophical speculation.

By way of summary, we may say: the physical sciences are primarily concerned with the inorganic physical environment, with the structure and behavior of inorganic and non-vital matter; the biological sciences, with the structure and evolution of living forms; the social sciences, with individual minds and the social order in which they exist and function; and the formal sciences, with quantitative relations and relations of implication and inference among propositions.

(b) But there is another classification of the sciences besides the one we have been considering. This is a dual division of them into *descriptive* and *normative*. Since this division emphasizes a difference of importance to some of our later considerations, we may dwell on it for a moment.

A rainbow, for example, exists as a definite entity arched across the heavens and characterized by certain describable qualities such as colors and shape. But it is also a beautiful object, and as such it causes the heart of the poet to "leap up" when he beholds it. As a mere combination of colors spanning the storm-cloud in the form of a semi-circle it is one sort of fact; as beautiful, it is another sort of fact. For convenience of reference, let us agree to call it in the first aspect an object-fact and in its second aspect a value-fact. The rainbow, then, we may say, is at once an object-fact and a value-fact. Now every entity is an object-fact, since every entity has characteristics or qualities and relations.

And many object-facts are, like the rainbow, also value-facts; they are so, when they are objects of evaluation. We may therefore generalize and assert that all entities are either object-facts or value-facts; and if they are the latter, they are also the former.

Now it happens that some of the sciences are interested in the study of entities as object-facts, while others are interested in the study of entities as value-facts. The first are grouped together as *descriptive* sciences, and they are so called because their primary aim is the determination of the nature and laws of the entities in question. The second are grouped together as *normative* sciences, so called because their primary purpose is to investigate the "norms" involved in the value-facts with which they are concerned. The first group, thus, is interested primarily in interpretation or description, and the second in evaluation.

Thus the name "descriptive sciences" is applied to those sciences whose primary aim is to state with all the precision possible the characteristic qualities and relations of the entities falling within their several fields of inquiry. It is the business of the physicist, for example, to describe the rainbow in so far as it is a formation of light-waves within a refracting medium; it is the business of the mathematician to describe accurately the conditions of its peculiar shape; it is the business of the physiologist and the psychologist to describe the conditions of its multiform colors in so far as these are related to the eye of the observer. The "normative sciences" on the other hand, are concerned with evaluations of entities; they aim to determine the conditions under which these entities exist as value-facts. The arching rainbow, the surging sea, the star-filled expanse of the moonlit heavens, the misshapen face, the act of homicide, the benevolent and self-sacrificing deed, the process of reasoning—these are entities with peculiar qualities, to be sure, and as such they are entities which fall within the fields of the descriptive sciences. But they are more. Humanity insists

upon evaluating them by calling them beautiful or ugly, good or bad, true or erroneous. They are not merely object-facts, they are also value-facts; and as values they fall within the scope of the normative sciences.

Now it is obvious that this new division of the sciences cuts across the groups above described. The sciences of ethics, logic, esthetics, and economics certainly, and in one interpretation of its history probably, would fall within the group of the normative sciences; all the others would belong to the group of the descriptive sciences. This division thus adds a new arrangement of the sciences, and it is of considerable importance, as we shall have occasion to see in the course of our later discussion.

(c) While it is possible to separate the sciences into various groups, as we have suggested above, it is, of course, not to be supposed that there is a sharp and impassable line of cleavage among them. They not infrequently overlap, the problems of one science being logically bound up with inquiries in the fields of others.

In the first place, within any given group of sciences this overlapping is obvious. Physics and chemistry, for example, often find their problems merging into each other, each science in turn being compelled to call upon the other for information necessary to the prosecution of its own inquiries. That the same is true within the group of the biological sciences is exemplified by the fact that botany and zoology have many principles in common, the cellular theory, for instance, being equally important in both. Within the group of the social sciences the interrelation is so close that frequently there is difficulty in distinguishing the province of one from those of the others; while logic and mathematics are in their fundamentals closely akin, as recent developments in those sciences have clearly shown. But, in the second place, the overlapping between group and group is also evident; and it is becoming more and more pronounced

with the progress of scientific achievement. Biology, for example, borrows more and more from chemistry; a complete study of the structure of living forms inevitably involves reference to chemical and even physical data. The social sciences, likewise, are dependent upon both the physical and biological for indispensable aid in the solution of many of their problems; psychological processes are indissolubly linked with neurological, and the institutions of the social order are thus grounded in psycho-biological principles. And mathematics and logic are inextricably bound up with the whole enterprise of scientific achievement. So there is an intricate network of relations criss-crossing throughout the various groups of the sciences.

The reason for this overlapping of the sciences is to be found in the fact that they are all dealing with the same world of reality. The different sciences are only various aspects of mankind's intellectual journey through one world of fact. "The same phenomenon may be considered without irrelevance under several sciences. Thus when we enjoy looking at a rose, there are chemical, physical, physiological, and psychological problems involved. At least four sciences have something to say, and what must be realized is that while these sciences are separated off for purposes of human convenience, because they pursue different methods, use different tools, sum up in different kinds of formulæ, they are simply different modes of one rational inquiry."¹ After all, the different sciences are only different angles of vision from which humanity views the same concrete world of fact, and it is consequently inevitable that they overlap. We separate them off from each other in order that we may more easily cope with the tremendous complexity that confronts us in our inquiry about the environment.

¹ J. A. Thomson. *Introduction to Science*, pp. 122-123.

§ 4. *Common sense, science, and philosophy*

Nowadays scientific knowledge is commonly accepted as superior to the opinions of common sense. Time was, indeed, when such was not the case. Not so many centuries ago the scientist, especially the physical scientist, was generally regarded with suspicion and even persecuted as a dangerous delver into mysteries with which it was supposed man had no business to meddle. And even to-day, here and there, a survival of this distrust of scientific inquiry is manifest in the occasional sneer at the "expert" or in the fear (not infrequently springing from religious prejudices) of "too much science." But, in the main, scientific knowledge is now accepted without question as superior to the so-called knowledge which unsupported common sense is able to furnish. In fact, the pendulum has swung so far in this direction that many people are prone to entertain towards science an attitude approaching that of worship—to dub any theory, however wild, scientific is not infrequently tacitly assumed to place it beyond serious debate.

(a) This confidence in science is, without doubt, at least partially justified, as we have already urged. Scientific knowledge is based upon a careful examination of, and inference from, the facts of experience; and for this reason alone we may surely place more confidence in the results of scientific inquiry than in the haphazard views of common sense (which wholly lacks a method) and agree that, where science and common sense are at variance, the verdict of common sense must be set aside as inadequately grounded and that of science accepted. If, for example, science tells us that what clearly seems to common sense one thing (like a pen or a table or the human body) is in point of fact an unimaginable complexity of indefinitely small things (electrons or cells) which perhaps cannot be seen by the eye even with the aid of the most powerful microscope; that light, which seems to common sense without motion, actually

travels through space with a velocity far higher than any we can be sensible of; that the earth, so stationary to untutored common sense, swings about the sun in an enormous orbit and with a velocity far greater than any object on its surface can ever possibly attain; that the human body, so obviously perduring from birth to death, in fact is rebuilt many times during the course of its life-history—if science tells us all of this, and much more, in contradiction of the initial prejudices of common sense, we may be lost in wonder and our imagination not infrequently staggered but our reason must accept it in preference to the deliverances of common sense, even though our direct and immediate experience seems to lie in support of the latter. And our reason must so accept it, because in such matters science is a step, and a far step, beyond common sense in that adventure of reason of which common sense itself is but an initial stage. We trust science because of the confidence we have in the method it employs in making its discoveries and formulating its conclusions: it is to be trusted because its theorizing, its venture of faith, is rigorously controlled.

(b) But the very method which the sciences adopt so limits them that even they do not carry through along the road which intelligence indicates. In the first place, this method is selective and analytical to a degree which renders the results obtained by it only partially adequate. And, in the second place, it is based upon assumptions which call for critical scrutiny but which it itself fails to scrutinize. Let us dwell briefly upon each of these two deficiencies.

(1) As we have already seen, there are many sciences and they differ from each other in important respects, one of these being that each has a special subject-matter or content. This difference arises primarily from the selective character of the scientific method. Each science has a definite point of view which is peculiar to itself and in terms of which its field of inquiry is delimited. Physics and chemistry, for example, study the physical environment, and in a

sense the same physical environment; but they study it from different points of view, and the questions which they ask about it are consequently differently formulated. Each is selective and looks into the environment from its own special angle. And this holds in principle of all the other sciences, whether descriptive or normative. Even within its chosen field of inquiry, as is well known, each science tends to break itself into special subdivisions. And this is made necessary by the selective character of its method. For this method is analytical; and analysis proceeds, where the subject-matter is complex, by omitting from consideration many aspects of the situation under scrutiny. Specialization is consequently characteristic of every growing science—specialization which is not satisfied with the delimitation of the science in question from all others, but which proceeds within the science itself as far as is necessary for clarification and precision.

This selective and analytical character of the method of the sciences is essential to their progress. The human mind cannot attack and solve all problems at once; it is compelled to isolate its problems and to consider them separately in order to deal with them successfully. It is only by proceeding in this manner that the several sciences have been able to achieve the results they have achieved.

But however necessary for progress in scientific discovery, this selective interest of each science limits its scope and leads it to neglect in its investigations genuine and important aspects of the phenomena with which it deals. From the point of view of the physicist, for example, color is a light-wave. Of course, we experience color as something very different from a light-wave and we are therefore forced to say that, if it is a light-wave, it is also something more. But this "something more" is for the physicist irrelevant and does not fall significantly within the scope of his analysis; from his special point of view, color is a light-wave and nothing more. And the same principle obtains through-

out. Each science converges attention upon a particular aspect of the environment and excludes rigidly from consideration whatever other aspects are from its special standpoint irrelevant. It selects: selection always involves neglect, since what is not selected is neglected.¹

This selective character of the sciences and the consequent delimitation of the various fields of scientific inquiry, thus, involves an insidious danger to thought. So long as there is clear recognition of the fact that a given science is abstract, that its results apply only to the environment as viewed from a special angle and are not complete, there is no danger. The danger arises from the fact that this limitation of scientific insight may be forgotten and the assumption made that its results are exhaustive. When this is done, then science ceases to be science and becomes a thoughtless philosophy grounded in a false assumption. Our environment is such that its various aspects cannot be held sharply apart and each explained in terms of itself alone; these aspects criss-cross or intertwine in such intimate fashion that they always spill over the nets spread by the special sciences. To assume the contrary is to make an assumption which belies the nature of the environment. This important lesson common sense may teach us; its catholicity is here a valuable corrective to the specialization of the sciences. Technical philosophy takes over this lesson and seeks consciously to follow out its implications in all fields of inquiry.

Philosophy further sees that the reports of all the sciences

¹ This character of the sciences is sometimes expressed by calling each science "abstract." If this term is to be applied, however, its meaning should be clearly understood. As so used, it is taken in its literal meaning of "drawn apart" and indicates only that any given science has its special subject-matter and point of view and is thus "drawn apart" from the other sciences. This word of warning is necessary because of the vagueness of the term "abstract" and because it is commonly employed, at least in popular speech, as a term of reproach. To call a science "abstract" in the sense of the term here indicated is to say nothing derogatory of the science in question, what is meant is merely that it is selective in its procedure.

in the aggregate do not fully meet the demands of intelligence in respect to the environment. These reports need to be thought in relation to, and if possible harmonized with, each other. The sum-total of the results achieved by the several sciences cannot, without critical study in relation to each other, be accepted as final. The interweaving of the structure of the environment forbids this. This the philosopher sees, and he makes it his task to attack the problems involved.

The desire on the philosopher's part to do justice both to the catholicity of common sense and to the specialization of the sciences seems to be what Plato had in mind when he said of the philosopher that he is "a lover, not of a part of wisdom only, but of the whole." As thus understood, Plato's statement is equivalent to the assertion that the "wisdom" which the philosopher seeks is grounded, on the one side, in the broad wealth of common-sense human experience as directly lived, and, on the other side, in conscious recognition of the demand for systematic interpretation of those generalizations that spring from the rigorous analysis of scientific procedure.

(2) But not only is the philosopher concerned with the results of scientific analysis. He is concerned also with the assumptions underlying scientific method. And this point needs to be stressed.

Among the assumptions made by the special sciences, two touch matters that are fundamental. The first of these is that there is for thought a point of departure which is solidly grounded and ultimate and from which absolutely certain conclusions can be derived. In the physical, biological, and social sciences this point of departure is what is commonly called "fact," while in mathematics it is a set of definitions and postulates; but, whether fact or postulate, it is taken as ultimate for scientific analysis. The second assumption is that man, by thinking, can attain significant information about his own nature and the nature of

his environment, that the results of his thinking are not merely creations of his mind but actually disclose the inner structure and order of his world.

It is, of course, clear that these assumptions are essential to the procedure of the sciences. But they are *assumptions*, and call for critical investigation. The question concerning their justification and significance needs to be explicitly raised and, if possible, answered. None of the special sciences raises this question; if it did so, it would thereby be carried beyond its own special field. For any given science, the assumptions are an indispensable starting-point of inquiry. But since the assumptions themselves involve inescapable questions concerning their validity and significance, they must be critically examined if the demands of intelligence in respect of them are to be fully met. Such a critical examination philosophy, in the division of its subject-matter called *epistemology* or the theory of knowledge, undertakes to follow through; and this is the other side of that wisdom which, according to the ancient Greeks, the philosopher loves to seek.

Thus it happens that the very procedure of the special sciences drives the mind on to a study of the problems of philosophy. A critical survey of the interrelations of the results achieved by the several sciences must be undertaken and the assumptions underlying their method must be scrutinized, or important problems are left hanging at loose ends, so to say, without solution and even without notice. And some of the most central problems of technical philosophy focus just here.

(c) But technical philosophy is not concerned merely with the problems raised by the results and procedures of the several sciences. In its historical development it has, not infrequently, pointed the way towards scientific achievement. All of the special sciences grew out of philosophical speculation, and in their first beginnings they were one and all regarded as philosophical disciplines. Nor does this his-

torical fact lack its logical explanation. / That lies in the consideration that philosophical speculation is primarily concerned with those comprehensive generalizations which are open to reason in its contemplation of the nature of things; and such generalizations point the way to scientific hypotheses, indeed are scientific hypotheses when once they are subjected to detailed scrutiny and experimental control. There is, thus, an interplay between philosophy and science, speculation and experimentation, such that philosophy may indicate the direction of possible scientific advance. Of course, this function of philosophical speculation nowadays has been taken over largely by the several sciences themselves, as is evidenced in a striking manner by the recent developments within the physical sciences. And this is as it should be, since no philosopher who is unacquainted with what is being done in a given science is in position to guide its progress. †The important point, however, is that no great achievement in any science is possible apart from vision of broad horizons; and such vision it has always been the primary mission of philosophical speculation, that wonder which tries to let no problem escape its net, to foster and safe-guard. † Whether the person who exercises this vision happens to belong, academically, to the special science in question is a matter of little moment.

(d) From the preceding considerations it should be clear that technical philosophy is no merely pedantic search for answers to insignificant and fruitless questions, as is sometimes supposed by those who are quite ignorant of its nature. Unfortunately, it is true that the term philosophy is popularly applied to all sorts of inane theories, and there are abroad sundry silly "isms" which are advertised under its name. But true philosophy, what Plato understood by the love of wisdom and what all the important philosophers from the great Greek down to the present have exemplified in their systems, is something quite different from a mere logomachy or a flaunting of personal prejudices and idio-

syncrasies as if they were eternal characters of the universe. It is, rather, the expression of the rigorously self-critical character of human intelligence employed in the serious and ^{important, decisive} fateful business of threading its way through the tortuous mysteries of the universe. In aim, at least, it is the full fruitage of the reflective life, the expression of intelligence in its completest realization; and it partakes of the "wisdom" both of common sense and of science.

There is, indeed, a sort of philosophy untouched by any conscious acquaintance with scientific lore. This is the sort of philosophy which may be called the philosophy of common sense. Its content is made up of uncritical views concerning the nature and meaning of life and death, mind and body and their relation to each other, cause and chance, God and His relation to human beings and to the universe, knowledge and faith, and the like. Such views are based upon vague and unanalyzed inferences, and are usually grounded in guesses or traditional beliefs. But, however poorly grounded and reasoned they may be, they are nevertheless potent factors in the mental life of the average individual and are held by him as in some sense basal.

This philosophy of common sense is unsystematic and largely unreflective. Like the common sense on which it is based, it is partly inherited by the individual and is full of inconsistencies. It is vague, dogmatic, superficial, and ultimately quite unsatisfactory. There is no necessity that such a philosophy be thrown away and utterly discarded; its catholicity, at least, is important and should be preserved. What is necessary is that it be deepened and systematized, reasoned out and modified in the light shed upon the intricacies of the environment by the results of scientific achievement and philosophical vision. And, until it is so reshaped, it can lay no very serious claims to final validity. ' 1

In the last analysis, thus, the question which confronts every normal individual is, not whether he shall have a philosophy, but rather, what sort of philosophy he will espouse.

Some sort of philosophy each one necessarily entertains from the date he apprehends and adopts the meanings embedded in his mother-tongue; the only choice left is as to the kind of philosophy one shall accept as satisfactory. And the only philosophy ultimately worthy of acceptance is that which is built on the foundations laid by the best thought and experience of the race.

So it comes about that, if we would approach the goal of our intellectual adventure, we must pass from the type of philosophy based upon common-sense presuppositions alone to that founded upon the more substantial results of cultural achievement. We must exchange the slipshod, rough-and-ready conclusions that common sense suggests about life and its environment for the more sober and rigorously derived conclusions of guarded analysis. In short, we must pass from the philosophy of common sense, with which we begin, to philosophy as a reasoned discipline. Otherwise, we remain in bondage to largely untutored prejudices.

The purpose of our further study here is to indicate and briefly consider some of the main problems which such a philosophy must face.

Historical note

The following historical note is designed to suggest something of the very great complexity and basal significance of the results achieved by man's scientific inquiry into the nature of his environment. This survey is, of course, in no sense exhaustive and pretends only to call attention to some of the historical achievements of the sciences and the names associated with them.

A. The physical sciences

The date of the beginning of these sciences cannot of course be fixed with precision. Centuries before the Chris-

tian era the Babylonians and Egyptians had started inquiries in this field that apparently yielded some important results. But, since the Greeks are the ancient people most directly connected historically with our own civilization, we may say that it is with the Greeks that these sciences have their origin. The sixth century B.C. sees the first scientific efforts of the Greeks. Thales and his companions¹ of this century began their speculations concerning the nature of the physical world, and with these speculations the physical sciences of European civilization were potentially inaugurated. Many discoveries of value were made by the Greeks during the three or four centuries they were creatively active. Perhaps their most significant contributions to the physical sciences were their general suggestions concerning the atomic or granular structure of matter and the nature of the solar system. Democritus developed a somewhat detailed theory of the granular nature of matter, arguing that matter in all of its forms, both living and non-living, is ultimately analyzable into little particles or bits of material substance which themselves are incapable of further analysis. In astronomy the Pythagoreans held with Aristotle that the earth is round; in opposition to Aristotle, who conceived of the earth as stationary at the centre of the astronomical universe, the Pythagoreans were convinced that the earth swings free in space and with the other planets revolves around some common object which for peculiar reasons they vaguely called the "central fire." All of these early Greek views about the physical world were naturally vague guesses and never defi-

¹ Thales (flourished about 600 B.C.) was a native of the seaport town of Miletus and one of the reputed Wise Men of ancient Greece. His thesis is that water is the ultimate substance out of which all things have developed. He is said to have predicted the eclipse of May 28, 585 B.C., and to have known something of magnetism. His fellow-townsmen, Anaximander and Anaximenes, joined him in his speculations and succeeded in working out a simple physics and astronomy—though these sciences did not exist as separate and distinct disciplines until much later. These three thinkers are usually called the Milesian school. They represent the very beginning of Greek scientific speculation and first mark a definite break with the mythological view of their age.

nately proved. But as foregleams of later discoveries they are significant, and as the first expression of the scientific attitude towards the problems of the physical order many of them are profound.¹

Some of the magnificent results achieved by the physical sciences during the modern period, which may be said to begin with the late sixteenth and the early seventeenth centuries, are the following. Copernicus proved beyond question that the guess of the old Pythagoreans was in principle correct by showing that the earth swings with the other planets around the sun. Kepler advanced the Copernican theory by observing that the planets move around the sun in elliptical orbits, not in circles, and by demonstrating that an imaginary line drawn from the centre of a planet to the centre of the sun—called the “radius vector” of the planet—sweeps over equal areas in equal times. The revolution wrought in physics by Galileo was no less important than that wrought in astronomy by Copernicus. By observing balls rolled down an incline plane and objects of different weights falling through equal distances, Galileo inaugurated the modern science of dynamics. In this way he learned a great deal about the laws of moving bodies and, what is even more important, he gave a concrete illustration of the fact that the experimental method of observation is of indispensable importance to the sciences. The formulation by Sir Isaac Newton of the universal law of gravitation is perhaps the greatest single achievement of the physical sciences. This law is that every material body attracts every other material body with a force which varies directly with

¹ Democritus (born about 469 B.C.) is one of the greatest of early Greek thinkers. He was interested not only in the physical sciences, but in the social sciences as well. The Pythagoreans were followers of Pythagoras (born about 570 B.C.), who is famous chiefly as a mathematician. Any history of philosophy such as that by Thilly, or Rogers, or Weber, will give the student an elementary survey of these early Greek thinkers. Fuller's *History of Early Greek Philosophy* gives an interesting account of their views. J. Burnet's *Early Greek Philosophy* contains translations of most of the fragments left from their writings, with discussions of them.

the product of the masses of the two bodies in question and inversely with the square of the distance between them. By this law Newton was able to formulate with great precision the laws of motion, to account for the elliptical orbits of the planets and for the fact that the radius vector of a given planet cuts equal areas in equal times, and to open many doors of discovery which hitherto had been sealed.¹ Some of the more important discoveries in more recent years are: the undulatory or wave theory of light as opposed to the older emission or corpuscular theory; the kinetic theory of gases; the interrelation of magnetism and electricity; the atomic and electronic theories of the structure of matter. Among the great names here are those of Huygens, Young, Fresnel, Joule, Dalton, Lavoisier, Faraday, Clerk Maxwell, Lord Kelvin, Sir William Crookes, and J. J. Thomson.²

¹ From his law of gravitation Newton was able to show "that the earth must be flattened at the poles; he determined the orbit of the moon and of comets; he explained the precession of the equinoxes, the semi-diurnal tides, the ratio of the mass of the moon and the earth, of the sun and the earth, etc." (Libby, *History of Science*, p. 112).

² Copernicus (1473-1543) refused for thirty-six years to publish his theory of the solar system because it was so contrary to current beliefs. On his death-bed a copy of his great work, *Celestial Revolutions*, was placed in his hands but he did not open it. His theory was at first favorably received by the Church but later was pronounced "pernicious to Catholic truth" and placed on the Index in 1616.

Galileo Galilei (1564-1642) was among the first to invent and make use of the telescope. By means of it he made four important discoveries: the satellites of the planet Jupiter, the phases of the planet Venus, the irregularities of the surface of the moon, and the existence of spots on the sun. He accepted the Copernican theory, and when sixty-nine years of age was forced by the Inquisition to recant his views with reference to the motion of the earth around the sun. The story goes that the aged scientist, as he rose from his knees after his recantation, murmured: "It moves nevertheless." Galileo's views on dynamics are expressed in his work *Mathematical Discourses and Demonstrations concerning Two New Sciences relating to Mechanics and Local Movements* (1638).

Johann Kepler (1571-1630) was for a time assistant to the famous astronomer, Tycho Brahe, and fell heir to the data which he had gathered. His views on the elliptical orbits of the planets are set forth in his *Astronomia Nova* (1609). A later work, *Harmonica Mundi* (1619), gives evidence of his inclination towards Pythagorean views. Like Galileo, he was persecuted by the Inquisition.

Sir Isaac Newton (1642-1727) is one of the greatest figures in the history

B. *The biological sciences*

As is true in the case of the physical sciences, the beginnings of the biological sciences can in a general way be found in the speculations of the early Greek thinkers. Some of Aristotle's predecessors held fairly definite views with reference to organic forms, but Aristotle seems to have been the first investigator to carry out systematic inquiry in this field. He came of a family of physicians and was himself trained for the medical profession. He was greatly interested in biological problems and accumulated what was for his day a vast amount of information relevant to them. "His works display a knowledge of over five hundred living forms. He dissected specimens of fifty different species of animals. One might mention especially his minute knowledge of the sea-urchin, of the murex, of the chameleon, of the habits of the torpedo, the so-called fishing frog, and nest-making fishes,

of science. His *Principia Mathematica* (1687) was regarded by another eminent scientist, Laplace, as being preëminent above all other productions of the human mind.

Young (1773-1829) established, both by calculation and experiment, the undulatory theory of light. His *Principles of Interferences* was first published in 1801.

Fresnel (1788-1827) was a famous French physicist whose studies in polarization and diffraction of light did much to gain general acceptance of the undulatory theory. His *Memoire sur la diffraction* won the grand mathematical prize of the Paris Academy of Sciences in 1819.

Joule (1818-1889) was the first to determine with precision the mechanical equivalent of heat and thus to show that heat is without question a form of energy. The law of the conservation of energy was first clearly enunciated by him in 1843.

John Dalton (1766-1844) has been called the founder of modern chemistry. Antoine Lavoisier (1743-1794) has also been given this honor. Dalton is especially noteworthy for his researches in connection with the atomic theory of matter.

Michael Faraday (1791-1867), an eminent English chemist and physicist, made important discoveries in magnetism and electricity. In this field Clerk Maxwell (1831-1879) also made discoveries of profound importance. His great work, *Electricity and Magnetism*, was published in 1873.

Lord Kelvin (1824-1907) was one of the most profound students of last century of the problems connected with the structure of matter.

Sir William Crookes (1832-1919) and Sir J. J. Thomson (b. 1856) are prominently associated with recent researches in connection with the phenomena of electrical and radiant energy.

as well as of the manner of reproduction of whales and certain species of shark. One of his chief contributions to anatomy is the description of the heart and of the arrangement of the blood-vessels. . . . Aristotle traced with some care the embryological development of the chick from the fourth day of incubation. His knowledge of the propagation of animals was, however, not sufficient to make him reject the belief in spontaneous generation from mud, sand, foam, and dew. His errors are readily comprehensible, as, for example, in attributing spontaneous generation to eels, the habits and mode of reproduction of which only recent studies have made fully known. In regard to generation, as in other scientific fields, the philosophic mind of Aristotle anticipated modern theories, and also raised general questions only to be solved by later investigation of facts."¹ From this quotation it is evident that, considering the fact that Aristotle was the first systematic student in the field of the biological sciences, his discoveries were truly remarkable.

But Aristotle lacked the microscope and the general technique of observation which in the modern period have made possible the systematic progress of the biological sciences and have enabled investigators to raise and solve problems which the old Greek did not glimpse at all or glimpsed only dimly. Detailed and systematic analysis of the structure of organisms and of the nature of organic processes have solved many of the mysteries of living matter ; while general inferences have, as in the case of the physical sciences, brought under common laws many phenomena apparently diverse. The ground was once for all cut from under the ancient theory of the spontaneous generation of life by the discoveries of Pasteur who showed that the supposed instances of spontaneous generation can all be accounted for by the presence of micro-organisms in the surrounding air. Pasteur also disclosed the tremendously significant part played by these micro-organisms in processes of fermentation and in the

¹ Libby, *History of Science*, pp. 24-25.

spreading of infectious diseases both in plants and animals. To Charles Darwin, however, goes the honor of performing for the biological sciences the service performed by Newton for the physical sciences, the service, namely, of formulating a general law of universal significance. This he did in his theory of evolution which, though now regarded as erroneous in many of the details of his formulation, threw floods of light upon the vexed question of the connection between generation and generation of living forms and greatly influenced the drift of later thinking both within and without the biological field of phenomena. Before the days of Pasteur and Darwin there were, of course, many workers in the biological sciences who added contributions of greater or less significance. Among these two are deserving of mention even in an elementary survey. They are Cuvier, the chief founder of comparative anatomy and paleontology, and Lamarck, who labored strenuously to establish the evolutionary view of life. Among the more recent investigators should be mentioned Ernst Haeckel, who has been largely instrumental in introducing the Darwinian view into Germany. At present activity within the biological sciences is very great, and marked advances are being made.¹

¹ Georges Cuvier (1769-1832) vigorously opposed the evolutionary hypothesis, insisting upon the fixity both of species and of varieties. In this the historical development of his science has shown him to be wrong. But his work in comparative anatomy and paleontology amounted practically to the inauguration of these sciences.

Lamarck (1744-1829) was a strenuous advocate of the evolutionary view of life, and despite the fact that he was not very influential during his life he has nevertheless been referred to as "the founder of the complete modern theory of Descent" and so "the most prominent figure between Aristotle and Darwin" (H. F. Osborn, *From the Greeks to Darwin*, 1894, p. 156). His important works are: *Studies in the Organization of Living Bodies*, 1802; *Philosophie zoologique*, 1809; and *Natural History of Animals*, 1835-1845.

Louis Pasteur (1822-1895), the founder of the science of bacteriology, is one of the greatest of French scientists. The ambition of his life was to apply the results of his biological studies to the treatment of disease. This ambition he realised in a marked degree. His name is most widely associated with the Institute founded at Paris by popular and world-wide sub-

C. *The social sciences*

In one form or another many of the basal problems lying in the field of inquiry which we to-day assign to the social sciences were discussed in considerable detail by that great trio of ancient Greek thinkers: Socrates, Plato, and Aristotle. To be sure, Socrates aimed to raise problems rather than to solve them; indeed, he claimed not to have any solutions to offer. His wisdom lay, as he was fond of saying, precisely in his knowledge of his own ignorance. Nevertheless, he discussed the great problems of life and social relations in such a suggestive manner that he became the fountainhead of the main currents of Greek thought after his day. Plato's dialogues, particularly his *Republic*, which is the first discussion of the ideal state, and Aristotle's *Ethics* and *Politics* compass in a very thorough manner the problems of justice, forms of government, the place of the individual in the state, the nature of education and its function in society, and in general most of the social questions which still are pressing. And their discussions are by no means out of date; on the contrary, no contemporary consideration of fundamentals in these fields can afford to leave the views of these Greeks wholly out of account.

During the modern period the various problems connected with the social order have been more sharply differentiated from each other than they were in the minds of the Greek thinkers above referred to, and so there have grown up a number of fairly distinct social sciences, such as ethics, economics, political science, psychology, history, anthropology, and sociology. Developments within these sciences have

scriptions for the purpose of making use of his discoveries to prevent hydrophobia.

Charles Darwin (1809-1882) began his scientific career as a naturalist on H.M.S. *Beagle* which voyaged around the world on a scientific expedition (1831-1836). The publication by Darwin in 1859 of his famous book on evolution, *Origin of Species*, was an epoch-making event, not only in the biological sciences, but in the history of modern thought generally. A sixth edition of this book was published at London in 1880.

gone steadily forward and are at present advancing with increasing acceleration. These developments, however, are very complex and can hardly even be indicated in a brief survey. Among the views of importance in the general field may be mentioned: the social contract theory of the state, the opposed organic view of the state, the democratic as opposed to the autocratic conception of government, the utilitarian theory of moral conduct, the self-realization theory of moral conduct, the conflicting views of altruism and egoism in the field of ethics and of socialism and individualism in economics. Some of the more important names representative of these various views are the following: Hobbes, Locke, Rousseau, Bentham, J. S. Mill, Kant, Adam Smith, Comte, Karl Marx, and Nietzsche. Besides these there are, of course, numerous others; but for their names and views the reader must consult the detailed histories.¹

¹ Thomas Hobbes (1588-1679) was a royalist, and he attempts to justify the monarchical theory of government in his work on political philosophy entitled *Leviathan*. He emigrated to the continent with other English royalists at the time of the revolution in 1640 and returned to England in 1651.

John Locke (1632-1704) was one of the most influential writers of the seventeenth century. His *Two Treatises on Government* and his *Letters concerning Toleration* exerted a wide influence on political and social thought, an influence evidenced directly by the Constitution of the United States.

Jean Jacques Rousseau (1712-1778) was greatly influenced by Locke and in his turn, through his *Social Contract*, exerted a profound influence upon his age. He is a thorough-going democrat in his theory of government, substituting direct government by the people for representative government. His views are incorporated in the famous Declaration of the Rights of Man (1789). His educational novel, *Emile*, advocates a natural education, free development of the child's impulses. Pestalozzi and Froebel were both influenced by his educational views.

Jeremy Bentham (1748-1832) may be regarded as the founder of the modern Utilitarian school of political and ethical philosophy. His basal principle, as stated in the opening paragraph of his *Introduction to the Principles of Morals and Legislation*, is: "Nature has placed mankind under the governance of two sovereign masters, *pain* and *pleasure*. It is for them alone to point out what we ought to do, as well as to determine what we shall do." This principle he seeks to apply both in the field of ethics and in that of government.

John Stuart Mill (1806-1873) was greatly influenced by Bentham and became an ardent and a brilliant advocate of the utilitarian doctrine. He is perhaps the leading writer in the field of the social sciences of 19th century England. Among his most important works on social problems are: *Princi-*

D. *The formal sciences*

Mathematics has had a long and proud history. The most exact of the sciences, it has always appealed to minds of the first class; and, being fundamental, it has long been cultivated. Its beginnings are lost in the distant past. Long before the Greek thinkers began its study, the early Egyptians and Babylonians were familiar with many of its principles. What these peoples of the Tigris-Euphrates and the Nile valleys knew of mathematics, however, has been transmitted to us through the Greeks who, not content to be transmitters merely, added important contributions of their own. Here as elsewhere they were creators. So once again we find ourselves debtor to this wonderful little nation of the half-millennium immediately preceding the Christian era. Four famous mathematicians Pythagoras, Plato, Euclid, and Archimedes—made important discoveries which greatly enriched the science and indelibly associated their names with its early history. The modern period has witnessed many magnificent discoveries in mathematics and its centuries are

ples of Political Economy, On Liberty, Considerations on Representative Government, On the Subjection of Women, Utilitarianism, Three Essays on Religion, and Auguste Comte and Positivism.

Immanuel Kant (1724-1804), one of the greatest figures in modern philosophy, vigorously opposed the utilitarian theory in his ethical writings and developed another doctrine—the doctrine of the "good will" and of the moral law or "categorical imperative"—which has been of great influence in later thought. His works on social problems are: *Metaphysics of Morals, Critique of Practical Reason, and Perpetual Peace.*

Adam Smith (1723-1790) is sometimes spoken of as the founder of political economy. By this is meant that he was the first to isolate economic facts and treat them scientifically. He was also interested in ethical problems. *The Theory of Moral Sentiments* and *An Inquiry into the Nature and Causes of the Wealth of Nations* are his two most important works.

Auguste Comte (1798-1857) claims for himself the honor of being the founder of the science of sociology. He urged the application of the scientific method to the solution of social problems. His most important work is the *Positive Philosophy* in six volumes.

Karl Marx (1818-1883) attempts to found a doctrine of socialism upon the view of social evolution advocated by Hegel. He emphasized the growing importance of capitalism in the economic organization of society, and

dotted with famous names. What the more important of these discoveries are has been indicated in the text of this chapter. The names associated with them are: Viète, Napier, Descartes, Leibnitz, Newton, Monge, Pascal, Lagrange, Gauss, Riemann, Cantor, Dedekind, and Einstein. François Viète (1540-1603) is the inventor of modern algebra; John Napier (1550-1617), Laird of Marchistown, Scotland, discovered the logarithms—one of the most important discoveries of the seventeenth century from the standpoint of applied mathematics; René Descartes (1596-1650), the reputed founder of modern philosophy, created the analytical geometry; Leibnitz (1646-1716), a universal genius, being a lawyer, statesman, mathematician, and philosopher, formulated the calculus several years after Newton's discovery of the same subject though in ignorance on his part of Newton's work; Gaspard Monge (1746-1818), Count of Peluse, created the descriptive geometry; Blaise Pascal (1623-1662) made contributions of importance to arithmetic, geometry, algebra, and mechanics, and is particularly noted for his formulation of the calculus of probabilities; Joseph Louis Lagrange (1736-1813) established the principle of virtual velocities and made mathematical studies of vibrations which had important bearings on the vibratory theory of light; Karl Friedrich Gauss (1777-1855) was the first to use the

pointed to the dangers inherent in it. Private property is the root of all economic evil, he thought.

G. W. F. Hegel (1770-1831) taught a general view of society which places the idea of humanity in the foreground as the principle lying at the foundation of all cultures and civilizations. This Hegelian view marks one of the main lines of development of later social philosophy. The books in which he sets forth his view are: *Philosophy of Mind*, *Philosophy of Right*, and *Philosophy of History*.

Friedrich Nietzsche (1844-1900) opposes all of the traditional ethical and social theories. He insists upon a thorough-going individualism, both in individual and social life, and denies the old belief in the equality of men. The democratic ideal, he holds, is an illusion; only the aristocratic ideal is justifiable in the light of facts. His works are numerous and have been translated into English under the editorship of A. Tille. Among them may be mentioned: *Thus Spake Zarathustra*, *Beyond Good and Evil*, and *Genealogy of Morals*.

method of least Squares and is a pioneer of the more recent developments in mathematics; Pierre Simon Laplace (1749-1827), famous as an astronomer and physicist as well as a mathematician, is noteworthy, among other reasons, because of his researches in statistics and particularly his studies of the application of the statistical method to the investigation of social questions; George Friedrich Riemann (1826-1866) developed the theory of functions; while Cantor, Dedekind, and Einstein are prominent figures in the more recent developments of mathematics, especially in regard to the theories of point sets and relativity.

Logic, it seems, was first begun as a systematic study by Aristotle whose formulation, in *The Organon*, of the syllogism and the fallacies of deductive reasoning remained the final statement of the essentials of the science until the beginning of the modern era—though, as Aristotle himself recognized, the principles formulated by him had been more or less consciously in the minds of his predecessors, Socrates and Plato. In opposition to the emphasis placed by the Aristotelian logic on the syllogism, a type of deductive reasoning which starts with certain assumed truths called “premises” and from these derives conclusions in accordance with the laws outlined by Aristotle, Francis Bacon (1561-1626) emphasized the importance of inductive reason which starts with the observation of facts and from such observation derives general principles or laws. In his *Novum Organum*—so named to indicate its opposition to the medieval tradition based on Aristotle’s *Organon*—Bacon points out in some detail the main steps in this method of inductive inference as he conceives it. This point of view was further elaborated by later English thinkers, particularly by John Stuart Mill, who gave important hints concerning various methods employed by the inductive sciences in the determination of causal relations—the methods of agreement, difference, concomitant variations, and residues. This tradition in logical theory is closely connected with the recent theories of Prag-

matism sponsored by William James (1842-1910) and of Instrumentalism advocated and expounded by Professor John Dewey (born 1859). A second line of development of modern logical theory was inaugurated by Kant and elaborated by Hegel. Kant's famous work, *The Critique of Pure Reason* (1781), defends the position that logical inference in the end rests on the *a priori* forms of the faculty of reason and that, consequently, all ideas are in an important sense systematic fictions. In his *Science of Logic*, published (1812-1816) in three volumes and later abridged in one volume known as the *Shorter Logic*, Hegel undertakes to establish the thesis that reason progresses from relatively simple beginnings to more and more complex forms, and that there is a certain definite order in the process of its development. This point of view in logical theory is continued in the so-called Hegelian school of logicians. This school has been, and still is, very influential both in this country and in England. Prominent among its representatives are: Francis Herbert Bradley (born 1846) whose *Principles of Logic* exerted a wide influence; Bernard Bosanquet (1848-1923) whose *Logic, or the Morphology of Knowledge* is much in the spirit of Bradley's *Principles*; and Josiah Royce (1855-1916) whose system (most maturely expressed in his Gifford Lectures, *The World and the Individual*, 1899, 1901) is built on the same logical principles and has been very influential in this country. The third general line of development of modern logic attempts to reduce mathematics to a comparatively few logical principles and to express logical inferences in the form of a highly abstract symbolism, and is commonly referred to as symbolic logic. Important names and works representative of this tendency are: George Boole, *An Investigation of the Laws of Thought* (1854); John Venn, *Symbolic Logic* (1881); Bertrand Russell, *The Principles of Mathematics* (1903), and *Principia Mathematica* (1910-1913, with A. N. Whitehead). There is much in this development that is of common interest to the mathematician and

the logician, and the movement is still relatively young. A survey of the field will be found in the first chapter of Lewis, *Survey of Symbolic Logic* (now out of print) and the first chapter of the more recent *Symbolic Logic* (1932) by Lewis and Langford.

PART I

THE INTELLECTUAL ENTERPRISE: COGNITION

CHAPTER I

WAYS OF KNOWING

As we have noted in the Introduction, man's intellectual attitude towards his environment presents two distinguishable aspects. On one side, it is the interpretation or description of the environment; and on this side it may be called cognitive. On the other side, it is the appraisal or dispraisal of the environment; and on this side it may be called valuative. In the end, no doubt, these aspects of intelligence are not separable from each other; but they are readily distinguishable, and may therefore be separately considered. In the present Part of our study we are to inquire into the nature and import of intelligence in its cognitive aspect, with special reference to what is commonly called knowledge. Its valuative side will be considered later.

The problem of knowledge is a very complex one, and it has long been debated by philosophers. During the course of the debate, several different solutions of the problem have been proffered. It is impossible to give here a detailed statement of these various views, however, and the reader is referred elsewhere for information concerning them.¹ One view, which goes back in the historical tradition at least to

¹ Four of the main views developed in the classical tradition of modern philosophy are outlined in the Appendix to the present volume, and references are there given for further study of the views summarized. A somewhat similar survey, though with a different emphasis, may be found in R. W. Sellars, *The Principles and Problems of Philosophy* (1926), Chapters III-XII. Part I of *The Ways of Knowing* (1925), by W. P. Montague, offers a comprehensive study of the several major positions in respect of the general problem; while Part II deals critically with the issues raised. See also: J. Laird, *Knowledge, Belief, and Opinion* (1930); and A. O. Lovejoy, *The Revolt Against Dualism* (1930). These several volumes present detailed analyses of issues, and the references given in them furnish the reader a competent bibliography in contemporary literature on the subject.

Hegel but which seems to the writer in principle acceptable, will be presented and defended. Whether it prove acceptable to the reader or not, it will in any case direct his attention to some of the issues involved in the problem.

In the present chapter we shall note what are commonly supposed to be some of the different ways of knowing. A more critical consideration of the points involved in this preliminary statement will be undertaken in the chapters that follow. Before proceeding with the statement of the different ways of knowing commonly accepted, however, we must first note the distinction between knowing and believing.

§ 1. *Knowing and believing*

This distinction is one with which we are all familiar ; at least we frequently make it. Often we find ourselves forced to say that we do not know, but we do believe, that something is so ; and, on the other side, we occasionally find ourselves in position to assert that we do not merely believe, but we know, that something is so. Ordinarily we say, for example, that we know it is raining when it is raining, and do not merely believe it ; but when rain is threatening we should not ordinarily say that we know it is going to rain, but only that we believe it will. And whenever we make assertions of this sort we obviously assume that there is a difference of importance between knowing and believing.

Little reflection is required to disclose where the main locus of the difference lies. It lies in the logical demands of the two cognitive attitudes. When we claim knowledge, we take upon ourselves a logical obligation which does not attach to the claim of belief only ; in the first claim the burden of proof is definitely assumed, while it is not, at least not in the same way, assumed in the second claim. If I assert, for example, that I know and do not merely believe that the earth is spherical, I thereby take upon myself the logical obligation to make good my claim ; and if I am un-

able to meet the obligation, I may be justly accused of having made a false assertion. If, on the other hand, I assert that I believe and do not know that the earth is spherical, I am not under the same logical compulsion to substantiate my claim; if I am asked why I believe, I may give any reason whatsoever or no reason at all, except that I *do* believe, and no one could accuse me of having made a false assertion. The claim to know and the claim to believe, we thus assume, are not quite on the same level so far as the demands of logic are concerned; the claim to know, we commonly suppose, is more definite and consequently more amenable to logical rules than is the claim to believe.

Nevertheless, we do not ordinarily suppose that believing is entirely arbitrary and unbound by logical considerations. However different knowing and believing may be, and however loose the connection between them, it is commonly assumed that they are sufficiently closely connected to render believing amenable to knowing. Generally speaking, at any rate, we are not willing to grant that one is at liberty to believe what one will, irrespective of what is known relative to what is believed. On the contrary, we commonly hold that the assertion of a belief commits one to some position which, in some measure at least, is or ought to be open to argument and logical considerations. Certainly this seems to be the common-sense view of all ordinary beliefs entertained by human beings.

There is, however, a broad and very important set of beliefs which not infrequently are regarded as being in this respect different from ordinary beliefs. These are what are commonly called religious beliefs. With reference to such beliefs and their relation to knowledge, two main views have been entertained by those who regard such beliefs as different from ordinary beliefs. (i) On one view, they are held to be quite unrelated to knowledge, what is believed being in no degree bound by what is known. The extreme statement of this view, classic in the history of Christian theol-

ogy, is Tertullian's famous assertion, *Credo quia absurdum* ("I believe because it is absurd"). Not many, perhaps, would nowadays subscribe to this extreme statement; but there are many orthodox persons who would, nevertheless, accept the principle underlying it, namely, that what is to be believed in religion need not in the least be limited by reference to what is otherwise known, since religious belief and knowledge are quite irrelevant in respect of each other.¹

(ii) On the second view, religious beliefs are not supposed to be wholly irrelevant to knowledge, as Tertullian would have them; but they are supposed to be superior to, and even determinant of, knowledge. This view found its classic expression in the statement, *Credo ut intelligam* ("I believe in order that I may know"), which may be said to be the main text of the Scholastic theology of the Middle Ages and which has been widely accepted in principle outside of the ranks of orthodox Scholastics. "Lord, I believe; help Thou my unbelief" is the fervent prayer of many a religious devotee; and the belief in question is commonly assumed to be quite superior to any knowledge which one can obtain.

From the preceding remarks, it is presumably clear that the common-sense distinction between knowing and believing gives rise to some important questions. // What is involved in the distinction, and on what grounds can it be justified? // Are the two cognitive attitudes ultimately distinct, or are they in some sense one attitude? // Such questions common sense does not stop to answer, or even to ask. We shall be concerned with them at the end of the following chapter. Meanwhile, in the remaining sections of the present chapter, we are to distinguish what seem to be several different ways of knowing.

¹ Note the position stated by Tennyson in *In Memoriam* :

We have but faith ; we cannot know,
For knowledge is of things we see.

§ 2. *Knowing as reasoning*

Reasoning is one way of knowing which is universally recognized. By reasoning, we suppose, we find out many things about our environment; and what we thus discover is said to be known by us. So much is a matter of common sense, as we say, and about it there appear to be no grounds for dispute or difference of view. But reason itself is not an unambiguous notion; at least, there are said to be different sorts of reasoning. And this point calls for explicit statement, since it is not always recognized explicitly.

(a) One sort of reasoning is exemplified in the process of reaching conclusions starting from the observation of what are ordinarily referred to as "facts." For example, we observe that the surface of a stream is muddy and covered with driftwood, and we conclude that a heavy rain must recently have fallen within the watershed of the stream; or, the geologist observes peculiar marks on the surface of the stone before him, and he concludes that in ages past the stone was covered by a glacier; or, the chemist notes the color of the litmus paper in his test-tube, and he infers therefrom that an acid or a base is present. Such reasoning underlies much of our common-sense experience and all of the natural or physical sciences. It is usually called inductive reasoning or, simply, *induction*.

Contrasted with this is another sort of reasoning, commonly called *deduction*. This sort of reasoning is exemplified *par excellence* in formal logic and in mathematics. Beginning with axioms and definitions, or with certain assumptions called premises, we derive a conclusion from them. For example, all of the propositions that constitute the body of Euclidean geometry may be derived from the axioms and definitions given at the start; or, if we assume that A is B, we can then deduce that A is C provided we know or may further assume that B is C; or, if we may assume that X is a colored object, then we can deduce the conclusion that

it is also extended in space. ||Deduction, thus, starts from something known, or assumed as if it were known, and reaches a conclusion by drawing it out of what is given at the beginning—the premises.||

The chief difference between inductive and deductive reasoning, then, would appear to be that each has a different point of departure. Both are essentially processes whereby something is inferred from something else, the truth of the conclusion following from the truth of the premises. But the premises in the one case differ in nature from those in the other. In inductive reasoning, they are some supposed set of facts or state of affairs discovered through observation; whereas, in deductive reasoning, they are axioms and definitions or something assumed and taken for granted throughout the process of reasoning. In the one case, the premises are, so to say, discovered; in the other, they are postulated. This difference is not so sharp as at first it appears to be; but it is sufficiently marked to indicate at least a *prima facie* difference between the two sorts of reasoning.

It is sometimes held that there is a more subtle difference between inductive and deductive reasoning. And that difference concerns the nature of the inference in each case, rather than the nature of the starting-point of the inference. According to this view, //the inference in inductive reasoning adds something new to the starting-point; while the inference in deductive reasoning only makes explicit what was implicit from the beginning.//The geologist who infers from the marks on the stone that the stone was formerly a part of a glacier, for example, seems to add something essentially new to what is known of the stone through observation of its characteristics; while the geometer who deduces the Pythagorean theorem from his axioms and definitions seems only to be making his axioms and definitions more explicit by drawing out of them, as it were, what was already directly involved in them. 'Inductive reasoning, in other words, seems to develop new information about the premises; while

deductive reasoning develops nothing new, but only elaborates the premises.† It is debatable whether in the end this supposed difference between the two sorts of reasoning is anything more than apparent ; but there can be no question, presumably, that it is at least an apparent difference which calls for analysis.¹

(b) Closely connected with the preceding distinction between inductive and deductive reasoning is that between *a priori* and *a posteriori* reasoning. And this latter distinction calls for a word of explanation.

By *a priori* reasoning is commonly understood the sort of reasoning which seems to be quite independent of direct or observational experience. For example, one can reason about space or time without any reference to things experienced in space or time. If A is above B in space and B is above C, then we can certainly conclude that A is above C wholly apart from any experience of what A or B or C may be ; likewise, if A precedes B in time and B precedes C, the conclusion that A precedes C is certain regardless of what A and B and C happen to be as directly experienceable objects. Examples of this sort of reasoning are numerous, mathematics and formal logic exemplifying it throughout. In such instances observational experience seems to be wholly lacking, and the process of reasoning goes forward apparently without any dependence on empirical data.

A posteriori reasoning, on the other hand, proceeds directly on the basis of observational experience and is dependent on it at every turn. That water will wet and fire burn, that friction causes heat, that material bodies obey the law of gravitation, that the planets move in elliptical orbits about the sun, that the solar system moves through space towards the constellation called Hercules and with a velocity of approximately thirteen miles a second—these and similar conclusions are arrived at by *a posteriori* reasoning. Here the

¹ The point at issue is made much of by Kant in his distinction between "analytic" and "synthetic" judgments. See the Appendix below.

inference is based throughout on observational experience, apart from which the conclusion could in no instance be drawn.

It should be clear on little inspection that there is a very intimate connection between *a priori* and *deductive* reasoning on the one side, and between *a posteriori* and *inductive* reasoning on the other. Whether there is ultimately any essential difference between the sub-types of each kind is a question which will concern us later. Here it is sufficient to note that they are not utterly separate and distinct, and are indeed not readily distinguished.

§ 3. *Knowing by acquaintance*

There is another way of knowing which is sometimes distinguished from reasoning in any of its forms. This is knowing by *acquaintance*, which is said to differ from reasoning by being direct rather than indirect and inferential, as reasoning always is. Whatever in the end may be said about it, it at any rate seems to find exemplification in ordinary experience.

It seems to be exemplified, in the first place, in sense-perception. When we open our eyes and look about us on the physical environment, we apprehend, and apparently immediately apprehend, colors and brightnesses; and the same in principle holds of the other senses, such as hearing and tasting and smelling. If we call by the name of "particulars" those things which we thus directly apprehend, we may then say that knowing by acquaintance seems to be exemplified in our apprehension of particulars.)

But, in the second place, there seems to be another sort of object which we know by acquaintance. In the judgment "Yellow differs from blue," for instance, the terms *yellow* and *blue* indicate something which differs from what we have above called particulars; and in each instance we seem to have direct acquaintance with what that something is.

We know what yellow or blue is through direct apprehension of it, if we have normal eyes, and a blind person could not thus know it. What is thus known is something which does not have a definite location in space at an instant of time, and is therefore not a particular existent. Let us call it a "universal." We may then say that we are acquainted with universals, as well as with particulars.

There is another sort of object with which we are, or may on occasion be, acquainted. This is exemplified in what are commonly called states of consciousness. On every occasion when one "looks into" one's consciousness to "see" what is going on there, one is acquainted with this sort of object. And such an occasion arises whenever one chooses to turn attention upon such objects.

Thus there are three sorts of objects which are apparently known by acquaintance: particulars, universals, and states of consciousness. 1. The usual name for acquaintance with particulars is perception, and the particular thus known is a percept. 2. Conception is the name generally applied to acquaintance with universals, and what is thus known is commonly called a concept. 3. Introspection is usually used to indicate acquaintance with states of consciousness, which themselves are referred to as experiences. This terminology does not always accurately distinguish the three sorts of acquaintance; but it is fairly accurate, and because of its familiarity it may enable the reader to understand more clearly what the three sorts of acquaintance are.

Whatever different names may be used to distinguish these three types of knowing by acquaintance, however, the awareness in each instance is supposed to be direct and immediate, rather than indirect and inferential, knowledge of the object in question. This is, indeed, the essential characteristic of knowing by acquaintance, by virtue of which it is supposed to be quite different from knowing through the indirect method of reasoning.

§ 4. *Knowing by intuition*

Intuition has been held to be a third way of knowing, distinct from both reasoning and acquaintance. And by it has been understood any one of three different sorts of cognitive activity. These are: || an immediate feeling of certainty, a direct insight into a proposition, and a sort of "sympathetic" insight. || Each of these calls for brief comment by way of elaboration of its meaning.

As most commonly used, perhaps, intuition is identified with an immediate feeling that something is true or is going to happen. It is in this sense of the term that one ordinarily speaks of a woman's intuition, for example, or of anyone's intuition of impending tragedy. As thus used, intuition is closely linked with the mysterious; anything, indeed, may be its object, but generally the intuition itself supposedly has about it the halo of mystery. On analysis, however, it turns out to be a more or less vague feeling on the part of someone who is "certain" that something has happened (for example, that a death has occurred), that something will happen (for example, that an enterprise begun on Friday will fail), or that something is the case (for example, that an individual who is a total stranger is trustworthy or the reverse).: The vagueness of the feeling is its main characteristic, despite the "certainty" which accompanies it; and the halo of mystery about it varies directly with its vagueness.

Intuition as a direct insight into the truth of a statement or proposition is much more important for a theory of knowledge, as we shall see in our critical consideration of it in the following chapter. This sort of intuition is exemplified in any instance where a proposition, such as "Between two points only one straight line can be drawn," is accepted as true as soon as, and apparently solely because of the fact that, it is apprehended. Such propositions are found especially in the fields of formal logic and mathematics; and

these sciences are, consequently, at times spoken of as "intuitive" sciences. But examples may readily be drawn from other fields, as: "Two bodies cannot occupy the same space at the same time;" or, "If X is colored, then it must be extended in space."

The third sort of intuition, above named "sympathetic" insight, is readily distinguishable from the other two which we have described. It is not a vague feeling of "certainty" that something is, or will be, the case; nor is it direct insight into the truth of a proposition in mathematics or logic. It is, rather, appreciative apprehension of an object or situation. It is most clearly exemplified, perhaps, in the field of artistic appreciation and creation, though examples of it are not wanting among common-sense experiences. When I read a poem, for example, I know what I read by the ordinary method of understanding the meaning of the words of which the poem is composed. But I may know it by another method, or what seems to be another method, namely the method of sympathetically intuiting the poet's mood; and some would hold that I must make use of this method if I am to appreciate the poetic or artistic character of the poem, that is, to grasp the poem *as a poem* and competently to flavor its quality as an example of the literary art. And this method is supposed to be essentially different from that of rational analysis and to be essentially intuitive in character. The mystic's "illumination" may also be taken as an example of this sort of intuition in another field. And we may find instances of it in everyday experience—as when two persons "know" each other by a sort of sympathetic insight on the part of each into the other's thoughts and feelings, which insight needs no aid of language for its functioning.

As in the case of knowing by acquaintance, so here, directness and immediacy is the important feature of the knowing process. Thus knowing by acquaintance and knowing by intuition differ from knowing by reasoning, which is indirect

and inferential in contrast. As between acquaintance and intuition, the chief difference apparently lies in the complexity of the object of each, the object of acquaintance being much more simple and "obvious" in its characteristics than is the object of intuition.

§ 5. *Resultant problems*

The preceding survey has been designed to note the distinctions commonly drawn between knowing and believing, and among what are supposed to be several ways of knowing. The purpose has been, not to solve problems, but to raise them. Of these, three are fundamental and quite important for our further study; and in concluding our survey we will set them out in explicit statement.

These three problems are, of course, merely different phases of the general problem concerning the nature of knowledge. This broader problem is manageable, however, only when broken up. The general problem resolves on analysis into three special ones, which need to be distinguished, namely (i) Is there more than one way of knowing? (ii) What is the object in knowing? and (iii) What is verity?

As we have seen, there is at least *prima facie* evidence in support of the distinctions noted above among several so-called ways of knowing. But we have also seen that the distinctions overlap in various ways. Inductive reasoning, for example, is closely allied to *a posteriori* reasoning, and tends to merge with it; deductive and *a priori* reasoning are so closely linked that it is not easy to keep them apart; intuition and deductive reasoning are on occasion difficult to distinguish, and so are intuition and *a priori* reasoning; while knowing by acquaintance seems to be involved more or less directly in all of the other types distinguished from it. This criss-crossing of the several ways of knowing inevitably raises the question whether, after all, these are distinct types of knowing or are only different forms of one fundamental

type. This is one problem about knowing which confronts us when we carefully consider the preliminary classes of knowing noted in the preceding sections.

When one begins to discuss this problem, however, one is speedily confronted by another: What is the object of knowing? The term *knowledge* is ambiguous, indicating as it does a double-edged fact. On the one side, it refers to the process of knowing; on the other side, it refers to what is known. In its ordinary usage, the term refers indifferently to both of these aspects. But in anything approaching a serious consideration of the problem of knowledge these two issues must be kept distinct. On the other hand, a discussion of one issue necessarily involves a discussion of the other, since each is concerned with a different aspect of the total fact of knowledge. Thus a consideration of the problem of knowledge must compass the question concerning the object of knowing, as well as the question concerning the process of knowing.

A third question about knowledge, which confronts us as a result of the preceding survey, is that of the distinction between veridical and false insight and the criterion, or criteria, whereby the distinction may in a given instance be determined. This is the distinction which underlies the difference between knowing and believing, the former being necessarily veridical and the latter possibly, but not necessarily, so. Whether in the last analysis there turn out to be several ways of knowing or only one, and whatever may be the nature of the object in knowing, this much seems certain from the beginning of our analysis: knowing is characterized by the quality of verity, while believing is not necessarily so characterized. Knowing must be veridical, otherwise it is not knowing; believing may be veridical, but it may also be false. What then is verity, and by what tests is it determinable?

These problems are, of course, crucial for a theory of knowledge. They are the problems which any theory of

knowledge must face, and which any satisfactory theory of knowledge must solve. It should also be clear that they are of the profoundest practical import: in last analysis, the fortunes of our conduct, so far at least as it is intelligent, are bound up in them. We now turn, in the remaining chapters of this Part, to a critical analysis of them.

CHAPTER II

KNOWING AS JUDGING

As we saw in the concluding section of the preceding chapter, the general problem of the nature of knowledge resolves itself, in the first instance, into the following question: Are there several different ways of knowing, or is there in principle only one? The aim of this and the next chapter is to offer an answer to this question. The thesis to be defended is that there is one, and probably only one, way of knowing, which may most appropriately be called judging. The present chapter will undertake to show that judging is one way of knowing; that it is probably the only way of knowing will be argued in the next chapter.

§ 1. *Knowing and meaning*

However in the end it must be more particularly described, knowing may be said from the beginning to be a kind of cognitive activity whereby something is known. This statement can hardly be called in question, since it is in fact tautologous. When one knows, one knows something; strictly speaking, one cannot be said to know nothing.¹ What is thus known is commonly spoken of as the "object" of knowledge. Of course, this "object" may vary greatly in its characteristics: it may be of the class of entities popularly called "things," that is, physical objects; it may belong to the class of entities composed of logical or mathematical propositions and formulæ; or it may conceiv-

¹ Of course, we sometimes do say of a person that he knows nothing; but we do not, or should not, intend this literally. What we really intend to say is that the person in question knows little or is mainly ignorant.

ably belong to some other class. There is one characteristic, however, which properly belongs to any object of knowledge, and that characteristic we are here to note and briefly analyze.

The characteristic is that of meaning. Whatever may be its special classification, whether it be a physical thing or a logical proposition or an imaginary entity, the object of knowing must in any case belong to the class of meanings. Knowing proceeds only through and by means of meanings, and whatever is known must be meaningful. The meaningless is by virtue of that characteristic unknown, and if it is ever to become known it must assume the status of a meaning. For knowing is limited to the class of meaningful entities, and the object known must be a meaning.

But having said that the object known is in any case a meaning, we have not so far said anything very definite. For meaning is a vague notion and open to several interpretations. What, more precisely, is to be understood by meaning? Under what circumstances is an entity meaningful, or what is its character as a meaning? This question we must now undertake to answer in general outline, and the only way to answer it is by giving an analytic account of the nature of meaning.

(a) That the word *meaning* is a word of many usages in popular speech there can presumably be no doubt, nor are these usages difficult to enumerate. We speak, for example, of the meaning of natural things or physical objects (as, the meaning of the stratification of rocks or the meaning of a line in the solar spectrum); of the meaning of artefacts or signs (as, the meaning of a light-signal or a sign-post); of the meaning of a symbol (as, the meaning of a word or of a mark on paper or of a mathematical formula); of the meaning of a statement (as, the meaning of "All material bodies gravitate" or of "Between two points only one straight line can be drawn"); or, finally, of the meaning of actual or fictional persons (as, the meaning of Plato or of Hamlet). This

list of the various usages does not pretend to be exhaustive, of course, but it is sufficiently detailed presumably to indicate how diverse these usages are—which is the main point of interest just here. //

Prima facie, at least, these various usages are more or less significantly different. And anything like a thorough analysis of meaning would have to inquire into the details of these differences and would seek to determine whether the apparent differences are ultimate for analysis. Our present task, however, is a less ambitious one. We are only concerned with those general characteristics of meaning which are specially important for our analysis of the nature of knowing.

Two of the usages noted above are thus important. They are: (i) the usage in which something is said to “mean” something, and (ii) that in which something is said to “have” meaning. The first is exemplified in such statements as the following: the red light in the road means construction ahead, the line in the spectrum means sodium, the word *Hund* means dog. The second usage is exemplified in such statements as: this is red, all material bodies gravitate, between two points only one straight line can be drawn— where, in each instance, the assumption is that the statement “has” a meaning and the question concerns that meaning. These two usages call for further analysis.

In the first usage, clearly, meaning is some sort of relation of reference between one entity and another. In the example of the red light in the road, for instance, the meaning of the red light is its reference to a particular situation described as construction ahead; in the case of the line in the spectrum, likewise, its meaning is its reference to a chemical element; and so in the case of the German word *Hund*, whose meaning is its reference either to a certain sort of animal or (depending on circumstances) to the English word *dog*. Generally speaking, meaning in this usage is a character of anything and everything which is so connected with something else as to bear to it this peculiar relation of

reference; and the meaning is this relation. In this usage, the statement that X means Y is equivalent to the statement that X bears to Y the unique relation of referring to it. Meaning in this sense, then, we may call *referential meaning*.

In contrast with this, the peculiar feature of meaning in the second usage noted above is that it seems wholly to lack this relation of reference. When we say that something "has" meaning, we appear to be thinking of meaning as a character of the something in question and not as referring to anything else. When we speak of the meaning of a statement like "This is red," for example, or "All material bodies gravitate," we seem to be speaking of a feature that belongs to the statement itself, considered, so to say, within its own four corners and without reference to anything beyond itself: the meaning apparently is the meaning of the statement, an immanent quality of it, and not a relation between it and something else. Let us call this sort of meaning *immanent meaning*.

Thus it appears that there are two quite different kinds of meaning, namely referential and immanent (non-referential). We are now to inquire whether these are irreducibly distinct kinds of meaning, or only apparently so.

It is to be noted, in the first place, that the main point at issue is whether what we have named immanent meaning is entirely non-referential, or only apparently so. That there is referential meaning which is not merely immanent seems beyond question. The sort of meaning which attaches to signs and symbols necessarily involves a relation of reference between what means and what is meant; and there can be no question that there is meaning of this sort. Indeed, the meaning of all linguistic expressions is this sort of meaning; and certainly language has meaning. There is, then, no question that there is referential meaning. The question is whether all meaning is of this sort. Is there any merely immanent meaning, which is non-referential? In an instance where we say, as we not infrequently do, that something

"has" meaning, is there no reference whatever between something which means and something else which is meant? This is the question before us, and there is evidence that it must be answered in the negative.

Of course, every statement is necessarily referential in its meaning. For every statement is composed of words, and the meaning of words is necessarily referential. The statement "This is red" undoubtedly has a meaning; but the meaning is the meaning of the words which constitute the statement, and this meaning is referential—each word taken separately refers to something, and so do the three words taken together as a sentence, and the reference is the meaning. And this holds of every statement which one may make.

But, it may be asked, may not that which the statement refers to, the object or situation indicated by it, itself have a meaning? And is not this meaning (the meaning which belongs to the object or situation indicated by the statement) immanent only and not referential? Let us consider whether this is the case.

There is presumably no doubt that the object or situation referred to by any statement we make may itself have a meaning. In the statement "This is red," for example, something is referred to by the word *red* and something else is referred to by the word *this* and still something else is referred to by the sentence *this is red*; and each of the several things thus indicated may on occasion have meaning. Likewise, in the statement "Between two points only one straight line can be drawn" the several words that make up the statement, and the statement itself as a complete sentence, refer to several objects (mathematical objects, of course, not physical); and these several objects may on occasion have meanings. And the same in principle holds of all entities, objects or situations, indicated by language.

But everywhere, it would appear, such meaning is essentially referential and not immanent only. If the situation

indicated by the statement "This is red" is meaningful, for example, that which is indicated by the word *this* refers to that which is indicated by the word *red* in such manner as to warrant our saying that the "this" has the quality of being "red"; or, expressed otherwise, in such a situation there is one aspect of it which refers to another aspect, if the situation can be said to be meaningful. Of course, what is here indicated by the word *this* is indefinite; it may be a physical object, such as a rose or a piece of glass or a distant star, or it may conceivably be a mathematical formula representing a light-wave of a certain length and velocity. (i) If it be a gross physical thing, a rose or a piece of glass or a star, which is indicated by *this* when we say "This is red," the thing itself is inferential. In other words, there is some specific experience, like a ray of light on the retina, which means the thing called a rose or a piece of glass or a star and through which the existence of the thing with its quality of redness is inferred. When we assert that the situation indicated by the statement "The rose or the piece of glass or the star is red" has meaning, therefore, what we really assert is that there is something in our present experience which refers to, and on the basis of which we may consequently infer, the fact that there is a red rose or a red piece of glass or a red star before us. What has meaning in each instance is that something, however in the end it may be more particularly described, which refers to the red object. (ii) If the word *this* in "This is red" be a mathematical formula representing a light-wave of a certain length and velocity, the meaning attaching to the situation indicated by the statement is even more clearly referential. The mathematical formula itself is, strictly speaking, not red; it is red only in the sense that it means red, that is, it refers to a light-wave of a certain description and this reference is its meaning for the physicist. In any interpretation of what is indicated by the word *this* in such a statement as "This is red," we may say generally, the meaning involved

in the total situation indicated by the sentence, in so far as the situation thus indicated can significantly be said to "have" meaning, is referential and not immanent only.

In such situations as those indicated by the statements "All material bodies gravitate" and "Between two points only one straight line can be drawn" the meaning involved is quite clearly referential. The meaning which the first statement has belongs to it by virtue of its derivation in scientific observation; and this derivation clearly has proceeded through inference based upon the referential meaning of material bodies in motion relative to each other, since it is precisely through such inference that the so-called law of gravitation has been discovered. Likewise, the situation indicated by the second statement has meaning only through reference to certain axioms and definitions, or postulates, which fix the meaning of "points" and "straight lines"; if these postulates were changed, the meaning of "points" and "straight lines" would also be changed, and the situation indicated by the statement might be quite different—as would be the case, for example, if the surface about which the statement is made were the surface of a sphere and not that of a plane figure.

On the basis of considerations like the preceding, then, we must apparently answer in the negative the question before us. There are no immanent meanings, if by an immanent meaning is to be understood one which is wholly non-referential. | Whatever "has" meaning, whether it be a statement or a situation indicated by a statement, possesses it by virtue of the fact that something refers meaningfully to something else; it is precisely this reference which constitutes its meaning. | Of course, we may on occasion treat a meaning as if it were wholly immanent. And we do this whenever we assume in an argument or an analysis that something is the case or the "fact" and then proceed to make inferences on the basis of this assumption without raising any question about its justification. This manipula-

tion of meaning is not denied by the preceding analysis. What is denied is that such a treatment of meaning does full justice to its nature. It is always and everywhere referential, however its referential character may on occasion be neglected as irrelevant to the purpose in hand.

(b) All meaning, then, is essentially referential, though its referential character may on occasion be neglected and the meaning be treated as if it were non-referential and immanent only. There is another characteristic of meaning which is quite important for our present purpose and which therefore calls for a word of elaboration before we pass on. This characteristic is that meaning is everywhere systemic, that is, it belongs to a system.

By a system is here understood a complex situation which is such that the parts or elements of which it is composed are so connected with each other that inference from one to the other is possible. Any situation which is composed of terms so related to each other that one may be inferred from another is an example of a system. And the present thesis is that meaning always falls within a system as thus understood, and is not possible outside of such a system. X may be apart from such a system, but it could not possibly be meaningful.¹

✓ The systemic character of meaning is simply the other side or aspect of its essentially referential character. In every instance where X means Y, X and Y must be related to each other as elements of a system; and this must be the case, since otherwise X could not meaningfully refer to Y. Let us recur to our example of the sodium-line in the spectrum. If the line means sodium, it does so because for some competent observer it refers to sodium; and it so refers because the line and the sodium are simply different aspects of one existential system and the observer has

¹ Compare B. Bosanquet's analysis of the relation of implication to a system in his important volume, *Implication and Linear Inference* (1920), especially pages 1-20.

learned of this systematic connection between them—or at least what he supposes is such a systematic connection. Of course, in this supposition the observer may be mistaken; but, in so far as the line meaningfully refers to sodium, the observer necessarily assumes that the two are systematically conjoined. And what holds in this special instance seems to hold generally: whatever means does so because of the (at least assumed) systematic connection between that which means and that which is meant. Nor must it be imagined that so-called immanent meaning is an exception to the rule; on the contrary, the rule is exemplified in it. The meaning which belongs, for instance, to the situation indicated by the statement "All material bodies gravitate" is grounded in a system of knowledge (Newtonian physics) on the one side and in a comprehensive order of objects (ordinarily called the physical order) on the other side; in other words, its meaning is grounded in that (supposedly at least) systematic whole which is the physical order of gravitating bodies as interpreted in terms of the Newtonian physics. And here, once more, the principle is general: whatever has meaning possesses it by virtue of participation in some sort of system.

Of course, the system may vary greatly in its structure from instance to instance of meaning. It may be, as in the examples given above, a system of physical objects; it may be a system of logical or mathematical entities arising from postulates; or it may be a system of largely imaginary entities. In the latter case, the system may be quite arbitrary, as in the instance of the child for whom the moon means a plaything or of the primitive adult for whom the lightning-flash means a thunderbolt of the gods. If the system in which the meaning is grounded be important, then the meaning is, as we say, significant; if the system be arbitrary and accidental, the meaning grounded in it is trivial. But, in any case, some sort of system is there as the ground of

reference between what means and what is meant. Meaning is essentially systemic.

(c) Our general conclusion, then, is that meaning everywhere is referential and systemic. This is not to be understood as equivalent to the assertion that every system is meaningful, or exemplifies meaning; whether a given system is meaningful or not depends on whether some observer happens to be interested in its analysis. Our conclusion is equivalent, rather, to the assertion that what means or "has" meaning must belong to a system. Where there is meaning, there is system also; where system is lacking, there meaning is not to be found. The reference which constitutes meaning is grounded in system and does not exist apart from it.

The preceding remarks have at least shown that the fact of meaning is very complex. Its complexity, indeed, is much more intricate than has been indicated, and many of its aspects which any analysis pretending to be adequate would have had to consider have been left on one side. But presumably enough has been said to emphasize the essentially referential and systemic character of meaning and to state with fair precision what is to be understood by this character. And so much is sufficient to make more definite the statement that knowing is concerned with meaning and to lay a foundation for our further discussion of the nature of knowing.

§ 2. *Knowing as judging*

The object of knowing, we have argued in the preceding section, necessarily has the character of a meaning; and this character is that of being referential and systemic. In the present section we turn to inquire what, more precisely stated in the light of the conclusion reached in the preceding section, the nature of knowing is. The thesis here to be defended is that what is commonly called *judging* is at

least one way of knowing, since judging is by common consent one sort of cognitive activity which is indubitably insight into meaning.

(a) The term *judgment* was originally applied to a decision rendered in a legal controversy, and the process of judging was the cognitive process whereby such a decision was reached. The one judging, or the judge, was confronted with a controversy, and his function consisted in adjudicating the conflicting claims and giving his final decision or judgment in respect of them. And in performing this function, he was forced to determine the relevant facts and to derive his final judgment from them in their relation to the law of the case. | In short, the judge was confronted with a problem and sought to resolve it through the selection and analysis of the relevant data. |

Closer inspection of the process of judging in this restricted application discloses that it is throughout essentially a process of apprehending and interpreting meanings. In order to understand the controversy before him for decision, the judge must apprehend or understand the meanings of the alternatives in the case; the conflicting claims presented by the opponents are meaningful, each in its own right, if the case has any standing, and the meanings involved in each must be appreciated by the judge before he is in position to proceed to any decision at all. Furthermore, to proceed to a decision the judge must distinguish between relevant and irrelevant, important and unimportant, aspects of the claims presented; and such an analysis of the claims is identical with an interpretation of the meanings involved in each. And, finally, the decision reached, the adjudication of the controversy, is the result of, indeed is simply a statement of, the judge's full insight into the meanings involved; when the final decision is reached, the meanings which set the problem are (supposedly) fully apprehended and their interpretation is completed. Thus, throughout, the process of judging, in this restricted application, is nothing but the

apprehension and interpretation of meanings; at the beginning the meanings are apprehended as essentially problematic in character, and at the end they are (presumably) adequately apprehended or interpreted.

As the apprehension and interpretation of meaning, judging has a much wider application than that noted above. It is exemplified everywhere where something is apprehended as meaningful. When one "sees" that a red light indicates construction ahead, that a certain line in the spectrum is a sodium-line, that a moving body obeys the law of gravitation, that between two points only one straight line may be drawn—in all such instances one is exercising the sort of cognitive insight which is judging. For in such instances, meanings are apprehended and interpreted, precisely as in the more limited application of judging considered above.

Everywhere, then, judging is the apprehension and interpretation of meanings. And this is what we commonly understand by knowing. To know something is to judge that it is so-and-so, and judging it thus is identical with interpretation of its nature as a meaning. Judging, therefore, is a way of knowing.

This translation of knowing into judging enables us to understand more clearly the distinction between two sorts of knowing commonly drawn in various languages. In English, the distinction in question is indicated by the words *know* and *know that* in such statements as "I know the rose" and "I know that the rose was used as a symbol in the Wars of the Roses." Other languages have two different words to indicate the distinction. In French, for example, it is indicated by *connaître* (as in "Je connais ma route") and *savoir* (as in "Je ne sais à quoi me décider"). In German, it is indicated by the words *kennen* (as in "Kennst du das Land wo die Citronen bluehen?") and *wissen* (as in "Ich will von ihm nichts wissen"). The dis-

tion, in principle, is that between knowing something directly or at first hand and knowing it indirectly or through inference.

These are not two distinct ways of knowing, however, but are only different aspects of an act of judging. In judging, a meaning is directly apprehended and also interpreted. When the chemist judges that the color of his litmus paper in the test-tube means an acid or a base, as the case may be, he directly apprehends that the paper is of such a color and he indirectly apprehends, or infers, the acid or base. Of course, it sometimes happens that the act of judging seems to be mere apprehension. This is the case where the meaning involved appears to be immanent only, as in the situation denoted by the statement "The rose is red" or "This is a rose." In such instances, however, as we have seen, the meaning involved is not wholly immanent, but is also referential; it is on the occasion treated as if it were immanent only, its referential character being arbitrarily neglected. Everywhere in judging, then, we have the distinction between "knowing" and "knowing that." Judging is in principle both ways of knowing taken in one.

From the considerations of this section we may conclude that judging is one way of knowing, and that the distinction between direct and indirect knowing falls within it as different aspects of the same cognitive activity. Is this equivalent to saying that judging is the only way of knowing? Nothing thus far said tends to indicate that this question must be answered in the affirmative. The only way to show that it must be so answered is by showing that the several ways of knowing mentioned in the preceding chapter are essentially judgmental. This task will confront us in the following chapter. Meanwhile, we are to inquire whether all judging is knowing.

§ 3. *Knowing, understanding, believing, and judging*

If the considerations advanced in the preceding sections are sound in principle, we may conclude that judging is certainly one way of knowing. Going on from this conclusion, may we hold further that every act of judging is an act of knowing and, so, classify knowing under judging without qualification? This seems impossible, because some acts of judging are acts of understanding and others are acts of believing, while understanding and believing are not identical with knowing. What then, we must now inquire, is the difference between acts of judging which are acts of believing and acts of judging which are acts of understanding, and how do both differ from those acts of judging which are acts of knowing? In other words, if knowing and believing and understanding are all alike acts of judging, wherein do they otherwise differ among themselves? In attempting to answer this question, let us consider them separately.

(a) Perhaps the basal difference between knowing and understanding may be shortly indicated by saying that knowing is judging meanings which are the meanings of situations or objects, while understanding is judging meanings which are the meanings of statements about situations or objects. This distinction cannot be very sharply drawn, since the meaning of a statement is involved in the meaning of the situation indicated by it. But the distinction can be drawn with sufficient clarity to enable us to note with fair accuracy an important difference between knowing and understanding. ||The statement that the sun is approximately ninety million miles from the earth, for example, may be readily understood by anyone acquainted with the meaning of the terms in the statement. || But having thus understood the statement, one does not thereby also know it. To know it something further is requisite, and that is to judge the meaning of the situation of which the state-

ment purports to be an account, or, in more familiar language perhaps, to make the analysis and calculation necessary to enable one to "see" that the situation is as it is represented to be by the statement. To understand that the sun is at the stated distance from the earth, all that is necessary is to understand, that is, judge, the statement; but to know that the sun is at the distance stated, one must judge the meaning of the situation itself and this involves rather complicated inference with reference to the spatial characteristics of the two astronomical bodies whose distance is in question.

It is true that in popular speech the terms, understanding and knowing, are frequently used interchangeably. We commonly would say, for example, that we know the interior angles of a plane triangle are equal to two right angles, even when we only understand what the statement means and are unable to "see" that such is the case—are unable, that is, to judge the mathematical meanings involved and, so, are unable to know the statement. And, on the other hand, we would not hesitate to say that we understand the meaning of the red light in the road ahead of us, when in fact we strictly know its meaning. But common usage of terms is by no means consistent or unambiguous. And it should be clear that, in anything like a rigorous analysis of cognitive experience, we need separate terms to make the important difference between judging a statement and judging the situation denoted by the statement. In strict usage, the first sort of judging should be indicated by the term understanding, while the second should be indicated by the term knowing.

As was noted above, the distinction between understanding and knowing here indicated must not be too sharply drawn. Both are ways of judging meanings, and, since the meaning of a statement is intricately involved in the meaning of the situation indicated by the statement, judging the one involves judging the other. And, in the end, one could

hardly completely understand a statement without also knowing it; in other words, adequate and full understanding merges ultimately into knowing. It is for this reason that effort at understanding leads to knowing if carried far enough, and understanding is the first step in knowing in so far as intelligence is a social or co-operative enterprise.

(b) To make clear the distinction between understanding and believing it is necessary to distinguish two sorts of statement, namely, that which makes no claim to verity and that which presents such a claim. "Every sentence," as Aristotle long ago pointed out, "has meaning... by convention. Yet every sentence is not a proposition; only such are propositions as have in them either truth or falsity. Thus a prayer is a sentence, but it is neither true nor false."¹ Adopting Aristotle's terminology, we may shortly say that the distinction between the two sorts of statement in question is the distinction between a sentence which is not a proposition and a sentence which is also a proposition. And on the basis of this distinction, we may differentiate understanding from believing by saying that a sentence which is not a proposition, as well as a sentence which is also a proposition, may be understood, while only the latter may be believed. And this is the case, because believing is characterized by a feeling of conviction which is lacking in mere understanding. Understanding is, indeed, logically prior to believing, since we can hardly believe what we do not understand. But having understood, we have not thereby necessarily believed; on the contrary, we may readily understand what we regard as unbelievable. Thus something more than understanding a statement is involved in believing it, and that is the conviction that the statement deserves to be accepted or rejected. If the conviction is that the statement should be rejected, of course, the statement is

¹ *De Interpretatione*, 17^a (*Aristotle: Selections*, edited by W. D. Ross, p. 8).

disbelieved ; but disbelieving is simply the negative form of believing, and so may be said to be a way of believing. Believing (or disbelieving), then, is understanding with conviction.

(c) Since believing is judging with conviction, it is closely allied to knowing ; for knowing, too, is this sort of judging. Both knowing and believing are judging with assurance or conviction. If I know that something is or means so-and-so, I judge with conviction its meaning ; and I do likewise, if I believe it. Are these two cognitive attitudes identical, then, or are they different? And, if different, what is the difference between them?

↳ We do not ordinarily suppose that knowing and believing are identical. On the contrary, we assume that there is a difference which warrants us in distinguishing them rather sharply. If one believes, we suppose, he does not at the same time necessarily know ; and, on the other hand, we suppose that one who knows does not merely believe what he knows. Knowing and believing, we thus generally assume, are different cognitive attitudes. And it appears that this assumption must be held to be warranted.

The difference between the two seems to lie primarily in the nature of the conviction or assurance attaching to each. The conviction characteristic of knowing is, as we say, fully evidenced, that is, certified logically ; while the conviction characteristic of believing is not thus fully evidenced, but at best is only partially so. Stated in terms of judging meanings, we may put the difference thus: knowing is judging which adequately discloses the meanings judged, that is, completely apprehends and interprets them ; while believing is judging which is not adequate in this respect. In short, knowing is certain judging, while believing is not. The conviction in knowing is identical with logical certainty ; the conviction in believing is at best psychological certainty and always involves some measure of logical un-

certainty.¹ Herein lies the explanation of the fact, noted in the preceding chapter, that one who asserts knowledge takes upon himself a burden of proof greater than that assumed by one who asserts belief only. The former claims adequately to judge his meanings, while the latter makes no such claim.

What has been said in the preceding paragraph is equivalent to saying that the essential difference between knowing and believing is the difference between apprehending a statement as veridical and apprehending it as if it were veridical but not with insight that it is so. We can know only veridical propositions or statements, since to know them is identical with seeing that they are veridical; but we may believe false statements, since believing them is identical with accepting them as if they were veridical but without insight that they are so. One might conceivably believe that the moon is made of green cheese, for example; but no one could possibly know it, since the moon is not in fact so made.

Thus a complete description of the essential difference between the sort of judging which is knowing and the sort of judging which is believing, but not knowing, calls for a consideration of the verity of judging. Whether a given act of judging is an act of knowing or an act of believing is a question which can be answered only after the determination of the criteria or tests by which the verity of judging may be established. To this question we shall return in a later chapter.

¹ This distinction between logical and psychological certainty will concern us below in the chapter on the certainty of judging.

The view of the relation between knowing and believing defended in the text would not be accepted by all philosophers. Cook Wilson, for example, definitely maintains: "Belief is not knowledge and the man who knows does not believe at all what he knows; he knows it" (*Statement and Inference*, p. 100). And by this Cook Wilson intends to deny that knowing and believing are species of judging; on the contrary, he insists that they are quite distinct cognitive attitudes which have nothing in common. For an able exposition and defense of Cook Wilson's position, see R. Robinson, *The Province of Logic*, especially Chapters II-V and XIII-XIV.

CHAPTER III
WAYS OF KNOWING: JUDGING AS
FUNDAMENTAL

In the preceding chapter the conclusion was reached that judging is at least one way of knowing. The question whether it is the only way was there raised but not discussed, and to a discussion of it we turn in the present chapter. This question arises out of the fact, noted in Chapter I, that there seem to be three distinct ways of knowing, namely reasoning, acquaintance, and intuition. In discussing the question we shall consider each of these in turn.

§ 1. *Reasoning as judging*

It seems clear that the sorts of reasoning which in Chapter I we distinguished as *induction* and *deduction* are both essentially judgmental in character. If I infer, for example, that a dry stick will burn or a wet stick will not burn, I am merely judging meanings; in each case I am interpreting meanings in the light of my past experience with sticks and fire, the dryness or wetness of the stick meaning for me that it is inflammable or not. Likewise, the astronomer who infers that there is sodium in a distant star, because of the observed character of the star's spectrum, is interpreting the meaning of the particular spectrum-line which he observes. Generally speaking, so-called inductive reasoning is everywhere but the apprehension and interpretation of the reference of what is observed in sense-perception; what is thus presented means something, and the interpretation of what it means is inductive inference. And the same holds in principle of deduction. The formal syl-

logism, which is the stock example of deductive reasoning, illustrates the point. The syllogism, A is C because it is B and B is C, is but a complex judgment that the meaning of the proposition A is C is involved in the meaning of the other two propositions taken together; when the meaning of these two propositions is apprehended, then the proposition A is C is seen to follow necessarily. Likewise, the mathematician who reasons that any two lines parallel to a third line are parallel to each other is merely interpreting the meaning of parallel lines with reference to the special situation determined by his assumptions; in other words, he is judging the meaning of parallel lines.

Thus, both induction and deduction are forms of judging. It is therefore a mistake to distinguish between these two sorts of reasoning and judging as if they were quite distinct types of intellectual activity. Of course, they are distinguished in common speech, and there is some justification for this. What is ordinarily called reasoning, whether inductive or deductive, is much more complex than what is ordinarily called judging. But this difference in complexity must not be mistaken for a difference in kind and the assumption made that reasoning is essentially non-judgmental. Between the two, as thus distinguished in popular language, there is no difference in kind; on the contrary, both are ways of apprehending and interpreting meanings, the meanings being in the one case relatively simple and in the other relatively complex. To avoid any danger of misconstruction, it is necessary to see that they are of a kind and to say simply that reasoning, both as induction and as deduction, is a complex form of judging.

When one begins to examine the sorts of reasoning distinguished in Chapter I as *a priori* and *a posteriori*, one finds that they tend to coalesce with deductive and inductive reasoning respectively. If one seek for an example of *a priori* reasoning, one discovers that any example offered is also an example of deductive reasoning; and, in like manner, an in-

stance of a *posteriori* reasoning is also an instance of inductive reasoning. It appears to be a matter of indifference, for illustration, whether the case of inferring sodium in a star is called inductive reasoning or a *posteriori* reasoning; in fact, it is both. Likewise, the case of reasoning that one line parallel to a second is also parallel to a third if the third is parallel to the second may be said indifferently to be deductive reasoning or a *priori* reasoning. Thus, a *priori* reasoning tends to merge into deduction, and a *posteriori* reasoning into induction. And in so far as they do so, both must be said to be forms of judging; for, then, they are identical with sorts of reasoning which we have already argued are judgmental in character.

Nevertheless, there is a difference between deduction and a *priori* reasoning which needs to be noted. And this difference concerns the function of *experience* in reasoning. According to one interpretation, a *priori* reasoning, strictly so called, is wholly independent of experience, that is, observational experience, and proceeds without any reference to it. But deductive reasoning need not be a *priori* in this sense; for deductive reasoning may be directly dependent on experience. For example, if an object is colored one may reason that it must be extended; this is deductive reasoning, but it is also empirically grounded and therefore is not a *priori* as here understood. We may say, then, that deduction need not be a *priori* in this special sense; though it is probably the case that every instance of a *priori* reasoning, in this special sense, is necessarily deductive.

Whether this special view of a *priori* reasoning is in the end tenable is a question which we need not here stop to discuss. If it be, this sort of a *priori* reasoning is still essentially judgmental in nature; for it still is the apprehension and interpretation of meanings. Take the case of reasoning that C must succeed A in time, if A precedes B and B precedes C, as an example of this sort of a *priori* reasoning

(as it has been said to be by those who insist on the possibility of this sort of reasoning); clearly, here the meanings of "succeed" and "precede" as relations in time are involved, and the reasoning is nothing more than an apprehension of them in connection with each other. And this holds of any example that conceivably might be offered. So, if *a priori* reasoning in this special sense be admitted, its admission does not negate our thesis that all reasoning is essentially judgmental.

Between *a priori* and *a posteriori* reasoning, then, there is no difference in principle so far as the question concerns the type of intellectual activity manifested in each. Each is an activity of apprehending and interpreting meanings, the activity of judging. The difference between them is to be sought, rather, in the meanings with which each is concerned. In *a priori* judging, the situation judged is, in a manner, conceptually constructed, since the meanings involved are grounded in postulates and definitions—which are taken for granted on the occasion; we might call it a postulational situation. In *a posteriori* judging or reasoning, on the other hand, the situation judged is, so to say, given or presented, since the meanings involved are grounded in facts or existents; we might call it an existential situation. This difference is, of course, very important in respect of the general issue concerning the rôle of experience in the intellectual enterprise; and it is an open question whether the difference is ultimate for analysis.¹ But, in any event, the difference is not such as to render our present thesis untenable: we may still say, in the face of it, that reasoning, whether *a priori* or *a posteriori*, is the apprehension and interpretation of meanings—is, in short, judging.

¹ For further consideration of the points touched upon here, the reader should consult Sections 2, 3, and 4 of the following chapter.

§ 2. *Acquaintance as judging*

That knowing by acquaintance is essentially non-judgmental has been explicitly maintained among contemporary philosophers. As a convenient point of departure for the present analysis, we may take the statement of one of the most prominent proponents of the thesis.

In one of his earlier essays entitled "Knowledge by Acquaintance and Knowledge by Description"¹ Bertrand Russell defines knowledge by acquaintance as follows: "I say that I am acquainted with an object when I have a direct cognitive relation to that object, i.e., when I am directly aware of the object itself. When I speak of a cognitive relation here, I do not mean the sort of relation which constitutes judgment, but the sort which constitutes presentation. In fact, I think the relation of subject and object which I call acquaintance is simply the converse of the relation of object and subject which constitutes presentation. That is, to say that S has acquaintance with O is essentially the same thing as to say that O is presented to S." Clearly, then, acquaintance as here defined is a way of knowing which is non-judgmental, since it is conceived as a cognitive relation between subject and object (the relation of "awareness") which is more direct, less inferential, than is the relation which constitutes judging.

The objects which we know by acquaintance as thus defined, Russell tells us, are of two sorts, namely, universals and particulars. "Awareness of universals is called *conceiving*, and a universal of which we are aware is called a *concept*." Examples of universals are: the notion of yellow in the sense in which yellow is the predicate of the judg-

¹ This essay was first published in the *Proceedings of the Aristotelian Society* for 1910-1911, and was later (1917) reprinted as Chapter X of the volume, *Mysticism and Logic*. The same distinction is emphasized by the author in *The Problems of Philosophy*, Chapter V. This distinction was adopted, and made use of, by J. E. McTaggart in his *Nature of Existence* (cf. Vol. I, Section 44, and Vol. II, Section 382).

ment, "This is yellow," and such notions as "up and down, before and after, resemblance, desire, awareness itself, and so on." The particulars with which we are said to have acquaintance are such objects as are directly apprehended in sense-perception, called sense-data, like a color or a noise ("When I see a colour or hear a noise, I have direct acquaintance with the colour or noise"), and such things as are directly apprehended in introspection, "varying complexes, consisting of objects in various cognitive and conative relations to ourselves" (as, for instance, my awareness of seeing the sun when I do see it, or my awareness that I desire food when I do desire it).

We are now to ask whether acquaintance, in the two applications noted, is properly to be called knowing; and, if so, whether it is strictly non-judgmental in character. And we begin with what Russell calls acquaintance with particulars.

(a) So far as *sense-data* are concerned, there can presumably be no doubt that we do on occasion have some sort of direct acquaintance with them. We do see colors, and we do hear noises, and we do so immediately; they are given directly to us or, as Russell says, they are presented. In so far as they are meaningful, however, they are not merely presented; on the contrary, they are interpreted. As merely presented, they are strictly speaking meaningless; they simply are what they are presented as, and do not stand in any relation of reference to anything else. The color or the noise, for example, is solely what it is apprehended as being, a mere color or a mere sound; neither is of anything whatever. If it be of anything, if the color be the color of an apple, say, or if the noise be the noise of a locomotive or of an automobile, then it is apprehended as something more than what we are acquainted with; it is then no longer merely presented, for it is also interpreted as referring to something not presented. It is, in short, an object of judging and not of acquaintance as defined. Thus

the conclusion seems inescapable that *sense-data* are either meaningless or they are known by the way of judging rather than by acquaintance. If *sense-data* are meaningful, they are on that account judged; acquaintance could at best give us only meaningless *data*.

The same observations hold in principle of those particulars which are supposed to be presented by acquaintance in the rôle of introspection. If held strictly to its proper function, acquaintance as introspection could disclose only awareness of an experience. It could not reveal that I see the sun when I do see it or that I desire food when I do desire it, but only that seeing or desiring is being experienced. The introduction of anything more than the awareness or the desire into the "particular" presented in such acquaintance involves at once an appeal to judgmental insight, for a reference of something to something is thereby introduced into the cognitive relation. Thus, acquaintance as introspective insight conceived as non-judgmental is limited in its reach to those particulars which are essentially meaningless; if they are in any sense referential, acquaintance with them must be judgmental in character.

✓The truth of the matter seems to be that in ordinary experience we never stand to particulars in the cognitive relation which Russell calls the relation of "being acquainted with" them. ✓On the contrary, we experience complex situations, some parts of which refer to other parts, and our cognitive relation to them is that of judgmental interpretation; what we apprehend is always a set of meanings. Of course, if we become critical and analytically minded in respect to our perceptual experience, we discover that it is complex and that we always apprehend something more or less directly; but we must not overlook the fact that we apprehend it in a meaningful relation to something else. Our actual acquaintance with *sense-data* and "varying complexes, consisting of objects in various cognitive and conative relations to ourselves" are alike judgmental.

(b) When we come to a consideration of acquaintance with universals, we seem fairly clearly to be dealing with a way of knowing which is essentially judgmental or inferential. In some sense, undoubtedly, we are acquainted with the concept "yellow" when we utter the statement "This is yellow;" and we are also acquainted with "up and down, before and after" and the like relations, when we make statements about them. But such acquaintance can hardly be said to be non-judgmental. No one ever directly "finds" a concept; it must be "thought," as we say, and thinking it is more than merely being acquainted with it. Strictly speaking, if "yellow" is known by acquaintance, it is merely a *sense-datum*, a particular, and is, as thus known, meaningless; as a universal, it is a class-concept including objects possessing the particular quality of being yellow and, as such, it is apprehended not by acquaintance but by judging. It seems to be no more the object of non-judgmental acquaintance than is any scientific concept, such as vertebrateness or atomic structure. Nor are those universals called relations in a different logical status. Such relations as up and down, before and after, resemblance, to use Russell's examples, are never found hanging loose, so to say; they are attached to terms, apart from which they have no status. We can, indeed, if we choose, isolate the relation in each instance, give it a name and talk about it as if it were a separate entity; and we certainly do know what we are thus talking about. But we are not more simply acquainted with such relations than we are so acquainted with, say, the relation of gravitation among bodies or the relativity of motion. The fact is that all relations are discovered through interpretation of terms. Of course, such relations as up and down, before and after, resemblance, are more easily discovered than are the so-called scientific relations of gravitation, relativity, and the like. But this is because the interpretation or discovery in the one set of cases is not so complicated and intricate as it is in the lat-

ter, and not because it is present in one set and absent in the other. It is present in both, since analysis of meanings is present in both; and this is the main point here to be emphasized. ✓ The discovery of concepts, or conceiving, then, we must say is judgmental; it is judging terms in respect of their common qualities (classification) or of their relations.

Thus there seem to be grounds for doubting that there is knowledge by acquaintance in the sense in which acquaintance is understood to be a direct cognitive relation essentially different from "the sort of relation which constitutes judgment." The correct view would seem to be, rather, that both acquaintance with particulars (*sense-data* and the objects of introspective awareness) and acquaintance with universals (concepts and relations) are alike forms of judging.

§ 3. *Intuition as judging*

As was noted in the fourth section of Chapter I above, there are three different views of intuition as a distinct way of knowing. These are: intuition as an immediate feeling of certainty, intuition as direct insight into a proposition or a series of propositions, and intuition as a non-judgmental sort of sympathy. We are now to inquire whether, in either of these three interpretations, intuition must be admitted as a way of knowing which is essentially non-judgmental in character.

(a) Of intuition in the first interpretation, little need be said. One cannot deny that people do on occasion entertain such a feeling of certainty that something is the case or that something is going to happen; and examples of it are not difficult to adduce. But it is very questionable whether such a feeling may legitimately lay claim to being a way of knowing. In the first place, we do not ordinarily put any confidence in it, as indicative of knowledge; on the contrary, we commonly view it with suspicion, as indicative

of ignorance. Certainly, it may as readily spring from ignorance, and it is notoriously linked with superstition. And this lack of confidence in intuition as thus understood seems entirely justified. For, in the second place, analysis of it discloses that it is nothing more than a blind feeling that something is the case or that something will happen; it is not any sort of insight into the nature of the event in question, and there is consequently no logical basis for it. Strictly speaking, it is not different from a feeling of pleasure or pain, so far as its noetic significance is concerned; the "certainty" which attaches to it is psychological only, and not in any sense logically grounded. Such intuition, therefore, is not a way of knowing at all. So, even if it is non-judgmental in character, admission that it does occur involves no contradiction of our thesis that all knowing is judging.

(b) Intuition as logical insight into a proposition or a series of propositions is on a very different footing. Here, unquestionably, we are confronted by a way of knowing. We do know that between two points only one straight line can be drawn, or that if A is B and B is C then A is C; and we know this, because we clearly "see" it is the case or is true. And if this is what we understand by intuition, intuition must be admitted as a way of knowing. But, in this sense, intuition is surely judgmental. To see that between two points only one straight line can be drawn, for example, one must apprehend and interpret the meaning of the statement; and the same even more clearly holds of insight into a series of propositions—indeed, such intuition is indistinguishable from deductive reasoning. As here interpreted, then, once more intuition offers no exception to the thesis that all judging is knowing.

(c) The view of intuition as a non-judgmental sort of "sympathy" offers greater difficulty to analysis. And to that view we must now turn.

In recent philosophical literature, this view of intuition

has been particularly emphasized in the writing of the French philosopher, Henri Bergson.¹ Bergson describes intuition as "the kind of *intellectual sympathy* by which one places oneself within an object in order to coincide with what is unique in it and consequently inexpressible."² To follow its lead, he tells us elsewhere, "we must break with scientific habits which are adapted to the fundamental requirements of thought, we must do violence to the mind, go counter to the natural bent of the intellect."³ This reversal of our usual cognitive attitude is precisely the function of intuition. Intuition, then, is a sort of intellectual activity which is quite different from that which we have named judging; and it becomes increasingly clear, as one reads further in Bergson's writings, that his main concern is to emphasize this sharp distinction between the two attitudes.

As I have undertaken to point out elsewhere in some detail, there is reason to hold that Bergson is not always consistent in his statements concerning the nature of this "intellectual sympathy" with which he identifies intuition. At times, he emphasizes its *intellectual* character; but in so doing, he seems to insist that it grows directly out of judgmental experience with the result that the distinction between "intellectual sympathy" and ordinary judging becomes quite vague and elusive. At other times, however, he tends to minimize this character and to identify intuition with the sort of "sympathy" which is exemplified, for in-

¹ For the details of Bergson's statement, the reader should consult the essay called *Introduction to Metaphysics* (originally published as an article in the *Revue de Metaphysique et de Morale*, 1903; translated by T. E. Hulme and published as a small volume, 1914) and the larger volume *Creative Evolution* (translated by A. Mitchell and published, 1911), which is usually regarded as Bergson's chief work. A sympathetic and very enlightening interpretation of Bergson's position may be found in H. W. Carr's volume, *The Philosophy of Change*, the first two chapters of which are concerned with the nature of intuition.

² *Introduction to Metaphysics*, p. 7.

³ *Creative Evolution*, p. 30. Compare: "Metaphysics, then, is the science which claims to dispense with symbols" (*Introduction to Metaphysics*, p. 9).

stance, in one's insight into the nature of life derived from living as contrasted with thinking; and, with this emphasis, intuition tends to merge without limit into the sort of insight which Russell calls "acquaintance" and which we have discussed above. All of these intricacies of Bergson's formulation I have discussed in some detail elsewhere.¹ We cannot here enter further upon them, and our discussion henceforward must proceed without special reference to them.

There are at least three other different attitudes which conceivably may be said to exemplify the "intellectual sympathy" with which intuition is here identified. These attitudes are: the historical sense, the esthetic attitude, and the mystical attitude. Let us, then, take these attitudes as data for our further analysis and discuss each in turn.

(1) The historical sense, as commonly understood, is manifested by the historian, or by anyone else, who is interested in putting himself imaginatively back into some past situation and grasping sympathetically its essential characteristics. Whenever one tries to take the point of view of a past generation or to understand the culture of a past epoch, one exercises the historical sense in this special meaning of the term. It is to be noted, however, that reference to the past is not essential to the attitude of mind here in question. One may manifest the historical sense in connection with the culture of one's own day or even in conversation with a friend. One who tries to get the point of view of Soviet Russia "from the inside" as we say, or one who enters sympathetically into the point of view of a friend in conversation, is making use of the historical sense as truly as would be the case if one were trying to decipher

¹ In the essay entitled *A Study in the Philosophy of Bergson*, especially Chapters II-IV. See also: B. Russell, *Mysticism and Logic*, pp. 12-18; and C. A. Bennett, "Bergson's Doctrine of Intuition," *The Philosophical Review*, Vol. XXV, pp. 45-58. For a more general discussion, see J. M. Stewart, *A Critical Exposition of Bergson's Philosophy*. The brochure, *La philosophie de Bergson*, by H. Höfding, includes in an Appendix Bergson's own comments on the author's criticism of his view.

an inscription of ancient Egypt and to understand the cultural environment which produced it. In essence, the historical sense is only the capacity to put oneself into the point of view of another, to adopt an alien point of view as one's own. And the exercise of the sense is a sort of imaginative experiment whereby this is accomplished.

Taken in the meaning above described, the historical sense is, of course, a way of knowing. And it is very important. It is involved in all understanding whatsoever, and apart from it the intellectual enterprise could not be social. But this way of knowing can hardly be said to be non-judgmental in character. On the contrary, it is essentially judgmental. (Putting oneself into a point of view of another age or another individual is precisely equivalent to apprehending the meanings which constitute that point of view. So, when we assert that a student of history enters sympathetically into a past culture, what we are in fact asserting is that he competently apprehends the meanings of the age in question; and to do this, he certainly must make use, by analysis and interpretation, of whatever material he can find at hand. And the same in principle holds of our assertion that a given individual enters sympathetically into the point of view of another person with whom he is conversing; here, too, apprehension and interpretation of meanings are demanded. Indeed, every example of the historical sense which can be offered is in similar case. And the generalization seems warranted that the historical sense is everywhere a way of judging and there is, consequently, no reason for the assumption that it is a way of knowing which is radically different from judging.

(2) The esthetic attitude is very complex and its adequate analysis is correspondingly difficult. But a few observations about it stand out fairly clearly, and these will be sufficient for the immediate purpose.¹ The attitude pre-

¹ Further consideration of details will be given below, when we take up the general problem of values.

sents two distinguishable aspects, namely, esthetic appreciation and creative imagination. And these must be separately discussed.

Esthetic appreciation, appreciation of the beautiful, is beyond doubt a very precious possession of human beings—so precious, indeed, that even a confirmed pessimist like Schopenhauer ascribed to it a high place among the few goods he was willing to admit. But that it is to be called a way of knowing objects seems very doubtful. ✓ When one appreciates the beauty of a sunset, for instance, or of a simple geometrical figure like the oblong with the proportion of the golden sector, or of a work of art such as a symphony by Beethoven or a painting by Cézanne, one is not, strictly speaking, knowing these objects. Of course, knowledge may be involved as integral to the appreciation, as it almost certainly is in the more complex forms. And where this is the case, esthetic appreciation undoubtedly involves judging; it is for this reason ✓ amenable to tutelage ✓ and can in some measure be acquired. But, as *appreciation* of the object, it is hardly to be called knowing the object. If, then, intuition be identified with esthetic appreciation, it is largely irrelevant to the problem now before us; certainly it offers no exception to the thesis under discussion, namely, that knowing is always and everywhere judgmental in character.

Creative imagination, however, seems to be on a different footing. As exemplified in the greater literary artists, at any rate, it is a sort of insight into situations whence spring much of life's wisdom and inspiration; and, as thus exemplified, it may properly be called a way of knowing. But it surely must be said to be judgmental. ✓ The poet, for instance, certainly is concerned with meanings, noting their ✓ ramifications and evaluating them. The circumstance that his insight is clothed in language with a marked emotive coloring must not blind us to the further fact that, despite the liberties given him in the formulation of his insight,

he apprehends and interprets meanings in essentially the same way as that followed, more laboriously perhaps, by his prosaic fellows.

Hark! it is the mountain echo,
Solitary, clear, profound,
Answering to the shouting cuckoo,
Giving to her sound for sound.
Such rebounds the inward ear
Catches something from afar—
Listen, ponder, hold them dear,
For of God, of God they are.

Surely there is judgmental activity here. For, after all, the "inward ear" does in fact catch something and reads its meaning even on a cosmic scale. Whether what is read be true or false is, perhaps, irrelevant. But the reading is nothing more nor less than interpreting meanings, is, in short, judgmental. And this is the important point.

It may, indeed, be the case, as Wordsworth for example claims it is, that poetic imagination gives us more than mere knowledge can give.¹ Nevertheless, the poetic imagination is essentially judgmental. There is, in fact, a close kinship between the intellectual performance of poets and scientists. Both make use of imagination which is as judgmental in the one case as it is in the other. The "fine frenzy" of the poet is, of course, not becoming to the scientist, who is more painstakingly analytical in his procedure; but the scientist discovers his guiding hypotheses only through the use of his creative imagination. Whatever difference there may be between Milton's *Paradise Lost* and Newton's *Principia*, for example, certainly it cannot be said, to lie in the fact that the latter is concerned with meanings while the former is not, or that the former is an expression of the imagination while the latter is not.

¹ Note Wordsworth's assertion: "Poetry is the breath and finer spirit of all knowledge; it is the impassioned expression which is on the countenance of all science."

Before leaving this special topic one other remark remains to be made, though the issue raised cannot be discussed in the immediate context. ✓ The remark is that poetic imagination, as contrasted with the scientific, is frequently busy with evaluation of objects. To borrow another example from Wordsworth, let us take his famous sonnet:

The world is too much with us ; late and soon,
 Getting and spending, we lay waste our powers ;
 Little we see in Nature that is ours ;
 We have given our hearts away, a sordid boon !
 The sea that bares her bosom to the moon ;
 The winds that will be howling at all hours,
 And are up-gathered now like sleeping flowers ;
 For this, for everything, we are out of tune ;
 It moves us not.—Great God ! I'd rather be
 A Pagan suckled in a creed outworn ;
 So might I, standing on this pleasant lea,
 Have glimpses that would make me less forlorn
 Have sight of Proteus rising from the sea ;
 Or hear old Triton blow his wreathed horn.

Here, I think one may safely say, is poetic imagination at full stretch. And it is clearly judgmental, or interpretative, through-and-through. But, and this is the point now before us, it is also evaluative: two cultures are contrasted, primarily for the purpose of disparaging one of them. As evaluative, one may ask, is poetic imagination here essentially non-judgmental? ✓ Or is it, in this respect also, judgmental? If not, may valuing nevertheless be said to be a way of knowing? These questions cannot be considered in detail here. For the present, it is sufficient to state that, if poetic imagination is non-judgmental in any respect, it is so because of its evaluative character. Whether it is so, as has been maintained, cannot be answered apart from a general study of the nature of evaluation, which problem will concern us below.¹

¹ See the first chapter of Part III.

(3) When we turn to the mystical attitude, commonly called mystical illumination, and ask whether it is a way of knowing essentially different from judging, we find ourselves confronted by a very puzzling question. The sort of insight at issue is quite esoteric and apparently never experienced, at least in its more advanced stages, except by a relatively few individuals. Hence the difficulty in undertaking an analysis of it. In the face of this difficulty, one who has not enjoyed the experience and yet wishes to deal critically with the issue raised by its knowledge-claim must either pass it by with a few quite general comments or enter upon a detailed study of it at second hand. Since this detailed inquiry is here out of the question, we shall have to content ourselves with one or two general remarks.¹

In the first place, there seems to be no doubt that the mystic's insight claims to be essentially non-judgmental. There is, indeed, said to be a "mystic way" which leads to the final illumination; and, apparently, it is quite laborious. It proceeds through sundry stages, which the mystics tell us are by no means easily passed over and which they are prepared to describe, at least in general terms though with differences in detail.² On one point there is general agreement: the mystic way is not the way of common sense and science; it is, rather, the way of direct and immediate insight into its object. Through the cultivation and expansion of self-con-

¹ Detailed studies may be found in the following works: W. James, *Varieties of Religious Experience*, Lectures XVI and XVII; J. B. Pratt, *The Religious Consciousness*, Chapters XVI-XX; E. S. Ames, *Psychology of Religious Experience*, Chapter XVII; W. P. Montague, *The Ways of Knowing*, Chapter II; C. A. Bennett, *A Philosophical Study of Mysticism*; Evelyn Underhill, *Mysticism* (this very detailed and sympathetic account is provided with an elaborate bibliography, which includes the works of the greater mystics themselves). Dean Inge's *The Philosophy of Plotinus* is an excellent study of perhaps the greatest philosophical mystic.

² For a somewhat detailed description, see Underhill, *op. cit.*, Part II. Compare the vivid statement by the occultist and theosophist, Rudolf Steiner, in his book entitled *The Way of Initiation*; in reading Steiner, however, one must bear in mind that he regards himself as an "occult scientist" rather than a mystic properly so called, though the difference is not very clear.

sciousness, it leads to an ecstatic embrace of what is supposedly ultimate and of final significance. The labor it demands is not the labor of judging, of apprehending and interpreting meanings, but rather the labor of spiritual insight straight into the heart of things.

Assuming that this is the claim of mystical illumination and that the claim is warranted, then we seem compelled to admit that there is at least one way of knowing which is not a way of judging. ✓ To inquire whether the claim is warranted would demand a detailed study of the mystic way impossible here. ✓ But of such a way, two statements at least seem certainly to hold: it is such an esoteric way that, for the vast majority of human beings at any rate, it seems impassable; and the ordinary tests of verity, which alone seem to provide a compass for mankind's intellectual voyage of discovery, do not apply in charting it.

Not everyone would admit, however, that the mystical way is thus esoteric. "Every person," one close student of mysticism has maintained, "who awakens to consciousness of a Reality which transcends the normal world of sense—however small, weak, imperfect that consciousness may be—is put of necessity upon a road which follows at low levels the path which the mystic treads at high levels. The success with which he follows this way to freedom and full life will depend on the intensity of his love and will; his capacity for self-discipline, his steadfastness and courage But if he move at all, he will move through a series of states which are, in their own small way, strictly analogous to those experienced by the greatest contemplative on his journey towards that union with God which is the term of the spirit's ascent towards its home."¹

I confess myself unable to see that this is the case—if, that is, the way followed by the "greatest contemplative" is to be understood as being essentially non-judgmental, as is apparently claimed for it. Of course, everyone whose in-

¹ E. Underhill, *Mysticism*, seventh edition, p. 532.

sight goes beyond what is immediately presented in sense-experience may be said to be one "who awakens to consciousness of a Reality which transcends the normal world of sense." And this happens in the case of every individual who thinks at all about his sensuous experience. But, with the common run of people at any rate, this "awakening" is involved in judging, and is not essentially mystical; in fact, ordinary judging consists precisely in apprehending something whose meaning transcends such experience. So it seems to me erroneous to say that the intellectual journey of the average person is "upon a road which follows at low levels the path which the mystic treads at high levels."

Or, if it be, then the proper conclusion to draw apparently is that the "mystic way" is essentially judgmental. For the intellectual journey of the average person certainly seems to be by the pathway of judging; and it would seem to be more logical to interpret the nature of the "mystic way" by reference to this, if that way is merely a prolongation of it and not an essentially different sort of insight. Perhaps, after all, this is the conclusion to be drawn.

(d) Before this sketchy survey of intuition is brought to a close, it is necessary and important to emphasize the fact that there is a sense in which intuitive insight may be said to be involved in all judgmental activity. The apprehension and interpretation of meaning, which we have said is the function of judging, is everywhere characterized by a certain sort of directness, and, if one so wishes, may in that sense be called intuitive. When, for example, one sees that two added to two make four, or that if an object is colored it must also be extended, or that a certain line in the spectrum is a sodium-line, or, generally, if X implies Y and Y implies Z then X also implies Z, there is in each instance something direct about the insight; such "seeing" is an integral element in all judging. Again, the "sudden" insight into the solution of a problem which emerges after long deliberation has about it something of the directness supposedly characteris-

tic of intuition—the mathematician's "grasp" of the solution of a difficult problem, for instance, or the natural scientist's "insight" into an hypothesis after laborious observation. Here, too, judging is basal; such insight is but the consummation of a prolonged series of analyses and inferences.

This characteristic of judging is, of course, not to be denied; and if one asserts that, so far, judging involves intuiting, there is no objection to the assertion. Perhaps, in the end, this is what is meant by most people when they speak of intuition as a way of knowing. But if this is what is to be understood by intuition, then, far from being a way of knowing essentially different from judging, it is a characteristic feature of precisely the cognitive attitude which is identical with judging. One who maintains that intuition is essentially non-judgmental, therefore, must mean by it something other than this.

§ 4. *Conclusion*

If the preceding considerations are essentially sound, the answer to the question with which we began seems to be fairly definite. We may at least say that judging is probably the only way of knowing, if by knowing is to be understood the intellectual activity which proceeds through the manipulation, apprehension and interpretation of meanings. Knowing by reasoning certainly seems to be this sort of activity, and so does knowing by acquaintance. The conclusion is not quite so clear in respect of intuition, because of the difficulty involved in its adequate formulation and analysis; but even here much can be said in support of the interpretation of intuitive insight which makes it judgmental in function, and apart from such interpretation it becomes so esoteric that description of its precise nature is difficult, if not impossible. So, despite this difficulty, our conclusion stands.

One may, indeed, raise a question of terminology by ask-

ing whether some term other than judging would not be more appropriate to designate the basal cognitive activity upon which emphasis throughout has been laid. In reply to such a question, two observations are pertinent. The first is that the term judging seems more appropriate than any other term which readily presents itself. And the second is that, whatever term may be used to designate it, the activity itself is the important matter.

CHAPTER IV

THE NATURE AND STATUS OF THE OBJECT OF JUDGMENT

As a result of the discussion of the two preceding chapters, the conclusion was reached that the sort of cognitive activity called judging is one way, and perhaps the only way, of knowing. But the answer to the specific question concerning the nature of *knowing* is not a complete answer to the larger question concerning the nature of knowledge. This larger question, as we saw at the end of Chapter I above, involves the further question, What is the nature of the object in knowing? In the light of the intervening discussion, we may now see that this question resolves itself into, What is the nature of the object in judging? And this question we are here to consider.

§ I. *Judging and the meaning-situation*

We have already argued that the activity of judging is concerned with meaning. But, as we have also noted, meaning is a complex fact. And we must first dwell for a moment on its complexity.

In every instance where meaning is present, we meet with a situation which is quite complex. Analysis discloses that it is made up of four distinguishable terms in relation to each other. In such a situation, there are: (i) that which means; (ii) that which is meant; (iii) a point of view or "perspective" in respect of which, or "for" which, the one means the other; and (iv) some sort of context on the basis of which, or "because of" which, the one means the other. To make the matter more concrete, let us make use of one

of our former examples. Where the spectrum-line means sodium, we find in the total fact the following constituents: (i) the observed line in the spectrum, which means sodium; (ii) the chemical element, sodium, which is meant by the observed line; (iii) the point of view of the observer of the spectrum-line, for whom the line means sodium; and (iv) the physical situation, of which the spectrum-line and the sodium are both constituent parts and because of which the spectrum-line means sodium. Every instance of meaning, it would appear, may on analysis be shown to be thus complex. There is always something which means or refers to something else, the reference being connected with a point of view (or perspective) and grounded in some factual or other situation (the context).

If we agree to denote this complex fact by the term meaning-situation, we may then say that the activity of judging always functions within a meaning-situation, of which it is the interpretation. This is what we really affirm when we say that meaning is the object in judging. The chief advantage arising from the use of the term meaning-situation, rather than the term meaning, is that the former emphasizes both the complexity of the fact of meaning and the intimate connection between judging and its object.

There are two classes of meaning-situations which are very important for our present analysis. These are what we may call *postulational* and *existential* meaning-situations. Upon this distinction important matters turn, and we must therefore discuss the two types of meaning-situations separately and in some detail.

§ 2. *The postulational meaning-situation : implication*

By a postulational meaning-situation is here understood any meaning-situation which involves postulates as fundamental. And by a postulate is meant any so-called axiom or definition which is set up as a point of departure for

thinking or judging. ✓ In a postulational meaning-situation, then, judging proceeds from initially accepted postulates to whatever conclusions can be reached on the basis of them.

Generally speaking, such meaning-situations are exemplified in the procedure of formal logic and mathematics. Here certain postulates are formulated and what these postulates mean is read off, the conclusions thus reached constituting the body of the science in question. Take Euclidean geometry, for example. It begins with definitions, some of which are called axioms and others of which are not so called; but all of them, whether supposedly axiomatic or not, are treated as fundamental within the science. From these definitions, thus taken as basal, propositions, such as the Pythagorean theorem or the proposition concerning the isosceles triangle, are deductively inferred; and the definitions and propositions together make up the body of knowledge which is the science of Euclidean geometry. It is important to note that the definitions or postulates are fundamental; if they are changed, the body of propositions following from them is also changed—as is illustrated in the so-called non-Euclidean geometries.

In such meaning-situations, then, postulates are logically fundamental; this is the reason why we have named them postulational. But, one may ask, what more precisely is to be understood by the assertion that, within such meaning-situations, postulates are logically fundamental? In what sense are they so, and why are they so?

The answer to the first part of this question has already been stated in principle: in such meaning-situations, postulates are logically fundamental in the sense that the meaning or reference is grounded in them. ✓ Given the postulates, certain meanings follow; change the postulates, and the meanings change. If the Euclidean axiom of parallel lines is accepted, for example, certain interpretations of lines in geometrical figures logically follow; if the axiom is denied, however, these interpretations do not follow. In short, the

postulates are fundamental in the sense that they logically determine meanings.

Why should this be the case? The answer to this question lies in the structure of the postulational meaning-situation. Every meaning-situation is inherently complex, constituted by several terms standing in certain relations to each other; in other words, every meaning-situation is systemic in its structure. This we have already emphasized in our previous analysis of meaning. What we are just here concerned to note is the peculiar character of the systemic structure of postulational meaning-situations. In such situations there is a special sort of relation among the terms, namely, the relation of implication. The systemic structure of a postulational meaning-situation, in other words, exemplifies an implicative relation between what means and what is meant: the connection between the postulates and the propositions derivable from them is such that the postulates imply the propositions. In Euclidean geometry, for example, the postulates with which the science begins imply the propositions, such as the Pythagorean theorem or the proposition concerning the isosceles triangle, which are logically dependent on them.

Now the implicative structure of postulational meaning-situations furnishes the explanation of the statement that postulates are logically fundamental in such situations. The meaning of any proposition, like the Pythagorean theorem in Euclidean geometry, cannot be adequately interpreted until the proposition is seen to refer to the postulates which imply it; when this is seen, on the other side, the meaning of the proposition is adequately judged and the proposition is said to be proved. Thus, the meaning of a proposition expressing a postulational meaning-situation runs to ground in the postulates implicatively connected with it, and this is the reason why postulates are logically fundamental in such situations. Here, judging that a proposition is true is equivalent

to seeing the relation of implication between it and its postulates.

In the first section of the preceding chapter, the assertion was made that what has been called a priori knowing is identical with judging within postulational meaning-situations. We are now perhaps in position to understand more clearly the meaning of that assertion.

Presumably there can be no doubt that many propositions, such as ✓ the statement that between two points only one straight line may be drawn, are seen to be "necessary" propositions and that the insight is apparently quite independent of ordinary observational experience. And if this sort of insight is what is to be understood by *a priori* knowing, then we must admit that there is such knowing. This we have already insisted upon. The point here to be noted is that such knowing or judging always falls within postulational meaning-situations and its "necessity" arises from this fact. ✓ Take the instance of knowing that only one straight line may be drawn between two given points. We undoubtedly do know that this is necessarily the case. But the necessity involved is grounded in certain assumptions about *points* and *lines* which imply the proposition in question. If these assumptions are changed, the proposition may not necessarily follow; indeed, its contradictory may be implied. For instance, an indefinite number of lines—and, in a special sense, *straight* lines—can be drawn between the two points on the surface of a sphere called the poles. The same holds in principle of all instances of this sort of necessity. It arises from the implicative structure of postulational meaning-situations within which such judging functions. The proposition whose "necessity" is thus judged is implied by the postulates of the system, and judging that it is thus necessary is but discerning its implicative attachment to its postulates. In short, *a priori* judging is grounded in implication, and therefore falls within postulational meaning-situations.

§ 3. *The existential meaning-situation : causality*

An existential meaning-situation is one in which existents are logically basal. By an "existent" is to be understood any event, that is, anything which happens at a given time or anything which in popular speech would ordinarily be called a fact. The color of a flower, the shape and texture of a leaf, the happening in a test-tube, the band of light in the spectrum, the motions of the stars, the *Venus de Milo*—these and other similar "facts" or "things" are examples of existents as the term is here being used. And such existents are fundamental in the existential meaning-situation.

This sort of meaning-situation is copiously exemplified in both common-sense experience and the natural sciences. When one judges that the flash of light on the evening horizon is indicative of an airway beacon or an approaching thunderstorm, when the chemist infers that the color of the paper in his test-tube means acid or base, when the geologist concludes that a glacier caused the grooves in the rocks before him, when the astronomer says that the dots on his photographic plate mean a double-star in the distant depths of space—in every such instance an existential meaning-situation is exemplified. In each instance, the reference is grounded in existents: what means is an existent, and what is meant is also an existent.

The systemic structure of the existential meaning-situation is notably different from that of the postulational. In the latter, as we have noted above, the structure is implicative; the relation between postulates and propositions is the relation of implication. In the existential meaning-situation, however, the relation is different. The connection between the flash of light and the stormcloud, or between the dots on the astronomer's photographic plate and the duple-star yonder in space, is not of the same sort as that between the postulates of Euclidean geometry and the propositions derivable from them. The connection between the constitu-

ents of the existential meaning-situation, on the basis of which we make inferences, is what we usually call a causal connection. It is because there is such a connection, we suppose, that we can link the constituents meaningfully with each other; they thus refer to each other, because they are causally linked with each other.

The assumption that there is a causal relation among existents in the existential meaning-situation apparently cannot be proved in quite the same way in which it can be shown that implication holds within postulational meaning-situations. At least, there does not seem to be the same sort of "necessity" characterizing judgments which function within existential meaning-situations. The astronomer's inference that the dots on his photographic plate mean a double-star and the mathematician's inference that the postulates of Euclidean geometry mean the Pythagorean theorem are not necessary in precisely the same sense. This is the distinction primarily emphasized when we speak of the former sort of judging as *a posteriori* and of the latter, as *a priori*. Again, the same distinction is emphasized by saying that judging within the existential meaning-situation is "probable" only, and not "certain" as is judging within postulational meaning-situations. Whether the difference between the sorts of judging is as sharp as at first it appears to be is a question which will concern us in the following section.

Before passing on to a discussion of this question, however, it will be well for us to pause for a moment to make somewhat clearer this assumption of causal connection within the existential meaning-situation.

The assumption is that, if existents are meaningfully related to each other, there must be some sort of connection between them such that the adequate interpretation of the one involves reference to the other. This connection we call a causal connection. The existent to which reference is made in order to "explain" another existent is called the

cause of that other; and the existent thus "explained" is called the effect. If, for example, we must refer to sodium in the source of light to account for the peculiar band of light observed in the spectrum before us, the sodium is said to be the cause of the band of light and the band of light is said to be the effect of the sodium. Translated into the terminology we have been using in our analysis of judging, this statement would run somewhat as follows: if the meaning of the band of light in the spectrum before us is sodium, that is, if judging the band of light involves a reference to sodium, then the assumption is that sodium is the cause of the spectrum-line-observed.

The important point to be noted here is that a causal connection between existents, so far as we have warrant for assuming it, is to be conceived as a relation between the structures of the existents thus connected. In other words, cause and effect are not two distinct entities; they are, rather, simply different aspects of one existential whole. The line in the spectrum and the sodium in the source of light are distinguishable, but not separable; they are different aspects of one physical situation, as is made explicit in our statement that the line in question is a sodium-line. The difference between cause and effect is to be stated primarily with reference to their order in time; that which is later in the temporal order we commonly call the effect, while that which is earlier we call the cause. But, despite this temporal difference, the two are supposedly linked as aspects of one structural whole.

It is important to note further that this conception of the causal relation is different from the popular conception of it. According to the popular conception, a cause is a sort of Jack-in-the-box which on occasion exerts "force" and thus brings the effect into existence. According to the view here suggested, however, a cause is one aspect of an existential whole, of which whole the effect is another aspect. the cause is not an "agent" which produces the effect; it is,

rather, that constituent of the meaning-situation to which appeal is made when one is interpreting or judging another constituent called the effect.¹

§ 4. *Implication and causality*

As we have seen in the two preceding sections, implication and causality are relations holding within postulational and existential meaning-situations respectively. In the present section we are to inquire whether the distinction between them is as sharp as it seems to be.

We have said above that there seems to be a difference between implication and causality in respect of the "necessity" which attaches to the two sorts of relation. Postulates and propositions following from them are so intimately linked by the implicative nexus between them that the two are necessarily conjoined, whereas the existents causally connected are not necessarily conjoined in quite the same sense; postulates and the propositions they imply are not logically separable, while causally connected existents are more loosely linked with each other. At least, judgments about implicative connections are more *certain* than are judgments about causal connections.

All of this is doubtless true enough, but it must not be misconstrued. After all, there is a causal necessity, as is expressed in the common assumption that wherever there is an effect there *must* be a cause or *vice versa*. And this assumption would appear to be justified, if what we have maintained above is to stand—namely, that cause and effect are merely different aspects of one and the same existential whole and are therefore structurally connected. For, if this be true, then the two existents which are causally linked be-

¹ For a more detailed analysis of the notion of causality, the reader is referred to L. S. Stebbing's *A Modern Introduction to Logic*, Chapter XV. See also: H. W. B. Joseph, *An Introduction to Logic*, Chapters XIX, XX; Bertrand Russell, *Scientific Method in Philosophy*, Chapter VIII, *The Analysis of Mind*, Chapter V, and *Mysticism and Logic*, Chapter IX.

long together by nature. And this is equivalent to saying that they are *necessarily* conjoined. Thus there is a necessity about the causal relation: where there is an effect there must be a cause, and where there is a cause there must be an effect. And from this it follows that judging within a causal situation may well be characterized by a sort of certainty. ✓ If the analysis involved in it is thorough-going, the judgment that A is the cause of B, that a glacier caused the marks on the rock, must be said to be in some sense a certain judgment. For, if the analysis is thorough-going, the act of judging is precisely the apprehension of a necessary connection between the existents judged.

Despite this admission, however, the certainty belonging to an act of judging within an existential situation is, generally speaking, not as compelling as is that belonging to an act of judging within a postulational situation. And the reason for this would appear to lie in the difference between the two sorts of situation. In the postulational situation what are to be judged, namely the postulates, are, so to say, completely given; they are what they are by definition, and the definition is, or at least may be, thoroughly understood. But in the existential situation what are to be judged, namely, existents or facts, are not thus completely given; they are what they are, not by definition, but by nature, and this "nature" may not be adequately comprehended. Thus insight in the former type of situation is, or may be, exhaustive and may be seen to be so; whereas in the latter it may not be exhaustive, or at least can hardly be seen to be so. And for this reason judging in the first instance is, as we say, more certain than it is in the second.

And yet it is doubtful whether, strictly speaking, one is justified in saying, as we have just said, that any postulate is "completely given" by definition. For one may, and if one is to be rigorous and thorough in one's thinking perhaps one must, raise the question whether the definition of a given postulate is entirely satisfactory and ultimate. And when

such a question is raised, the activity of judging is thereby immediately forced to go beyond the definition in question; for, then, the meaning-situation is expanded to include the postulate as if it were something which refers, not to that which is implied by it, but to that which implies it. If one asks whether the axioms or postulates of Euclidean geometry are ultimate, for example, one cannot possibly answer the question without going beyond those postulates and seeking what it is that implies them; for they now are treated as having a reference beyond themselves to something (the general nature of space, for instance) which would "explain" them. And that such a question concerning these postulates is, not arbitrary, but quite logical, the recent creation of non-Euclidean geometries is clear evidence; for the definitions with which such geometries begin are very different from those of Euclid, and within themselves such geometries are quite as "certain" as is the Euclidean.

When questions like these are once raised, we are confronted with the larger problem of the connection between implication and causation. For such questions are equivalent to asking, What is the relation between postulational and existential meaning-situations? Are these two types of meaning-situations utterly distinct, neither having any connection with the other, or are they meaningfully joined? In other words, is it logically possible adequately to judge postulates without reference to existents?

The general issue here raised involves the basal question concerning the verity of judging, and can best be discussed in connection with a consideration of that question. It will therefore be postponed until we reach that context.¹ We turn in the next section to a brief analysis of a problem specially related to the causal situation.

¹ In the next chapter, especially the concluding section.

§ 5. *Cause versus causes*

Every causal situation is in some important sense unique ; and yet no causal situation seems quite self-contained. When I strike a match on the side of a match-box, for example, I say that the cause of light is friction. This situation is unique in the sense that it is different from other causal situations. But, clearly, it is not self-contained. If the match is rubbed on the side of a match-box in a vacuum, it does not burn ; friction, therefore, is not the whole cause of the lighted match, the presence of oxygen being an important factor of the total causal situation. What was originally considered as the causal situation is now seen to be included in a larger situation which is the causal situation. From such considerations as this the question arises whether there are many causal situations or only one. And this is the question we are here to consider. It has been discussed historically under three different heads, and we shall consider each of these in turn.

(a) One way of stating the problem is this: Does every effect have one and only one cause, or may there be more than one cause for any given effect? This way of stating the problem reduces it to what has historically been called the problem of the plurality of causes.

It may seem, at first glance, as if there could be no doubt that an effect may have more than one cause. Death, for example, may apparently be caused in sundry ways—by drowning, by strangulation, by electrocution, by a gun-shot wound, by the ravages of various kinds of disease, and so on indefinitely. Likewise, heat may be caused by friction, by radiation, by combustion. And one could proceed at length with other examples illustrating the same point. Why, then, should there be any question about it? For this reason: in every case where it is said that a given effect may be produced by manifold causes, more accurate analysis discloses the fact that such a statement is very questionable.

Taken in general and abstractly without reference to a specific instance, death may be said to be variously caused ; but a specific instance of death is always traceable to a special set of conditions. Death by drowning is quite different from death by electrocution or disease or strangulation ; each is a different effect and is caused by different circumstances. Likewise, heat by combustion is very different from heat by friction and has different causal conditions. In other words, a specific case of death and a specific instance of heat has each its special cause ; in neither case does there seem to be a plurality of causes present. Taken generally, then, and without reference to specific things and events, a plurality of causes seems possible. But actual causal situations are always tied to specific things and events, and here analysis shows that there is no plurality of causes ; for every set of existents called an effect there is always another, and only one, set of existents called the cause.

A cause, however, may be very complex, so complex in fact that it is practically impossible to discover all of its elements and give an itemization of them. This is particularly true where human beings are involved. ✓ The firing of a projectile on the battle-front, for example, is an event whose cause involves not only structure of gun, powder, and projectile, but also human purposes reaching beyond the individual gunner into the vast unknown of the policies and prejudices of the warring nations. And so it is often necessary in practice to distinguish proximate and remote aspects of the total causal situation ; otherwise the very complexities of many causal situations would defy analysis. But which aspect of the causal aspect of the situation should be regarded as proximate and which as remote depends upon, and varies with, the point of view of the inquirer. "Take an inundation as an illustration. Someone has broken the dam, or left open the sluices which were committed to his charge. He is the responsible cause of the damage which the water does. We thus take the two forms of causality together in

one phrase, but we cannot ignore the fact that from the physical point of view the water is the principal cause and the release of it at a given point is a subsidiary cause; but that from the legal point of view, which has to do with human acts, it is the breaking of the dam or neglect of the sluice which is the responsible and principal cause. On the same lines run the historical controversies in regard to great events: as Thucydides, in the introduction to his *History of the Peloponnesian War*, raised the question what was the cause of it and what the occasion. To this day we still dispute in the same way about Bismarck's Ems telegram."¹ Despite the practical necessity, however, of distinguishing between principal and subsidiary, or proximate and remote, aspects of the causal whole, it must not be forgotten that it is still one situation with which we are dealing. But it is this practical necessity that gives rise to the notion of a plurality of causes, except where the notion can be explained, as above, in terms of abstract generalization.

(b) Closely connected with the problem of the plurality of causes, and constituting in fact another side of the same general question, is the problem of causal pluralism versus causal monism.

The number of causal situations in the environment is indefinite and presumably can never be exhaustively known by human beings. Every existent has its cause, so at least we ordinarily assume, and no complete list of existents seems possible. But if one begins with any causal situation one finds that that particular situation is only an aspect of a larger situation, and that of a larger, and so on without any apparent stopping-place. As Schopenhauer² remarked,

¹ W. Windelband, *An Introduction to Philosophy*, 1914, McCabe's translation, p. 132.

² Arthur Schopenhauer (1788-1860) started in business as a boy, but he soon found a business career distasteful and entered the teaching profession. For a time he was connected with the University of Berlin while Hegel was there. He met little success as a teacher, became especially embittered against Hegel, whom he called a "windbag of philosophy," retired to Frankfurt-on-the-Main where he devoted his time to thinking and writing. Plato

every cause is itself in turn an effect ; one can always, apparently with reason, inquire concerning the cause of a cause. For instance, in a case where heat is caused by friction, the friction itself exists under a definite set of conditions, which, if we undertake to analyze it fully, leads us on to very general physical and chemical laws. But, on the other hand, there is frequently no obvious causal connection among different causal situations. To illustrate: there is a cause why a certain species of fish appears at a given depth of the sea, and there is a cause why a man's hair should be red ; but there is no obvious, and apparently no conceivable, causal connection between the existence of the fish at this precise depth and the red hair of the fisherman who goes in search of them. Such considerations as these give rise to the problem whether there are many absolutely independent causal situations in the environment, or only one total causal system of things and events of which all particular instances of causal connection are incomplete and fragmentary phases. Those who accept the first alternative are called pluralists, and their point of view is that of *causal pluralism*. Those who accept the latter alternative are called monists, their view being known as *causal monism*. We turn now to a short statement and a critical estimate of the arguments advanced in support of each of these points of view.

Causal pluralism holds that there are many—the number is indefinite—causal situations in our environment, each totally independent causally of all the others. The chief reasons advanced for this position are two. First, there are many existents, like the red hair of the fisherman and the habitancy of the fish at a given ocean-depth cited in the previous paragraph, between which there is no conceivable causal relation. Secondly, particular objects and events can-

and Kant were his favourite philosophical writers. His masterpiece, *The World as Will and Idea* (1819), still stands as the classic defense of the pessimistic view of life. A considerable part of this work is contained in the *Selections* from Schopenhauer edited by D. H. Parker (published by Charles Scribner's Sons).

not be deduced from, or explained in terms of, general principles and laws of reason. "No psychologist could deduce the biography of a man from general psychology. No breeder of animals could deduce from mendelism all the traits found in a given litter. No physicist could deduce from general physics whether a tossed penny will fall heads or tails. In short, the particular entity seems infinitely complex, baffling all attempts to put it completely under any assignable number of laws. . . . Hence from the standpoint of causation the world has an infinitude of ultimate and independent causes. They are ultimate and independent because no amount of knowledge of other details of the world would furnish us enough information from which to deduce this total nature."¹

Causal monism, on the other side, is the view that the environment is one all-inclusive causal order, of which all particular cases of causation are fragmentary and incomplete aspects. The world is not "an infinitude of ultimate and independent causes"; on the contrary, all special causal situations are merely proximate phases of one total causal situation, parts of one all-inclusive system. According to this view there is only one true cause, namely, the universe; every particular causal situation is a fragmentary aspect of the totality of existents. One argument advanced in support of this view is the empirical consideration, suggested above, that every cause which one can observe is in its turn the effect of another cause, which is the effect of another cause, and so on in an infinite regress. This seems to be a fact of ordinary observation, and it appears to be substantiated more and more by our developing knowledge of the world—the further our explanation of things progresses, the more interconnected do they appear to be. The conclusion to which we are driven by such considerations as these, so the argument before us runs, is that all things are bound together in one universal causal system; the adequate comprehension

¹ Marvin, *A First Book in Metaphysics*, pp. 122, 123.

of any given causal situation logically involves the nature of the environment as a whole.

Flower in the crannied wall,
 I pluck you out of the crannies,
 I hold you here, root and all, in my hand,
 Little flower—but *if* I could understand
 What you are, root and all, and all in all,
 I should know what God and man is.

A second argument in support of monism is based upon the so-called "internal theory of relations." This theory and the argument founded upon it are rather technical, and so a general reference to them here must suffice. ✓The theory, broadly stated, is that every existent stands in relation to other existents and that these relations enter into and modify the existents related (the *relata*). An individual human being, for instance, stands in certain relations to other human beings; he is a father, brother, son, husband, a member of a society, club, political organization, and the like; and these relations in which he stands enter into his nature and make him different from what he would otherwise be. And the same is true, so the theory of internal relations holds, of all existents: they exist in relations, and these relations constitute their nature. The argument built upon this theory is that, since terms thus stand in relations which modify them, every term is a part of every other term, every-existent is inseparably connected with every other-existent. The world, in short, is one causal system.¹

The arguments advanced by both the monist and the pluralist have merit. On the one hand, it seems clear that the

¹ The problem of relations has been discussed at length by various writers. A brief elementary discussion will be found in Marvin, *A First Book in Metaphysics*, Chapter VIII. A more detailed discussion is presented in, E. G. Spaulding, *The New Rationalism*, pp. 176 ff. For more advanced material the reader may consult the following: W. James, *Pluralistic Universe*, Lectures II-III; B. Russell, *Philosophical Essays*, pp. 150-169; F. H. Bradley, *Appearance and Reality* (see Index), and *Essays, on Truth and Reality* (see Index); and G. E. Moore, *Philosophical Studies*, essay on "External and Internal Relations."

pluralist is justified in his contention that there are many causal situations between which no relation is at present conceivable by us and that particular existents cannot logically be deduced from general laws. On the other hand, the monist seems equally justified in his contention that ~~there is no apparent stopping-place in the search for boundaries of any given causal situation ; no logical Chinese Wall separating one causal situation from all others seems ever to be discovered.~~ Furthermore, the argument which he erects on the internality of relations is not without considerable weight. But if each of the contestants be granted what he claims his case still is questionable.

That we cannot at present conceive what sort of causal connection could exist between two given existents (as the appearance of fish at a certain ocean-depth and the red hair of the fisherman) does not justify the conclusion that there is no causal connection between them. They might be causally connected and we be so ignorant of the connection that it seems to us inconceivable: it was at one time regarded as inconceivable, for instance, that there is any causal connection between ocean tides and the moon, or between climatic conditions and civilizations. Again, the fact that the particular things and events in the world cannot be deduced from general laws and principles seems hardly to prove that the environment is a complex of an indefinite number of wholly independent causal situations. It might very well be the case that the physical environment is one causal system and yet our ignorance of it is so great that we could not deduce or infer one part from another, or one existent from general laws. The case of the pluralist, thus, seems hardly established.

But the arguments of the monist also leave some questions unanswered. Suppose it be granted that, so far as our present ability to judge will carry us, every causal situation is itself contained in a more comprehensive causal situation. What follows? Certainly not the conclusion that there is

one, and only one, all-inclusive causal situation. For it still would remain conceivable that, in this broad universe of existents, there are other causal systems than the one in which we human beings happen to live. And it would remain conceivable, also, that the causal system in which we do live is not itself one causal situation; our ignorance alone might be responsible for our inability to discover, among those meaning-situations within which our activity of judging functions, some one situation which is not causally linked with any other. So far as the argument from the internality of relations is concerned, all that can here be said is that the argument is as weighty as is the theory upon which it is founded. If all relations are internal and all existents are thus related, as the theory maintains is the case, then causal monism certainly seems to follow; if, however, relations among existents are not thus internal, the conclusion based on the contrary assumption is without logical justification. Whether relations are internal and all existents are internally related is a question which falls beyond the proper boundaries of this elementary survey. The reader who is interested in pursuing the analysis further should consult the references given in the preceding footnote and the cross-references there to be found.

The upshot of the matter would seem to be that neither causal pluralism nor causal monism is established beyond reasonable doubt. Convincing empirical evidence is lacking on both sides, and the internality of relations remains an open question. What can be said with some assurance, however, is that the final resolution of the controversy depends primarily on the logical demands arising through the activity of judging within existential meaning-situations. For the problem is essentially whether there are several existential meaning-situations, each of which is not meaningfully linked with any other, or only one such situation which includes all existents. And the problem can apparently be solved only through the complete determination or interpretation

of the meanings of such situations. ✓ If causal monism be true, then the adequate interpretation of any given existential meaning-situation involves reference to all others without exception ; if causal pluralism be true, on the other hand, the adequate reading of some given existential meaning-situation is possible without such reference.

(c) From time to time in the history of philosophy since Aristotle, it has been argued that the conception of a First Cause is logically necessary. Aristotle himself maintained that an infinite series of causes involves a contradiction, and that consequently there must be a First Cause which itself is not caused.¹ Others since Aristotle have argued in the same vein ; and not infrequently these later arguments have been in support of a theistic view of the world—there must be a First Cause, and such a cause is what religion understands by God. But is this conception of a First Cause logically necessary?

It is clear that the point here at issue is essentially the same as that which is at issue in the controversy between the pluralist and the monist. And it is also clear that the line of analysis suggested above in connection with that controversy must be followed here: ✓ if a First Cause is logically necessary, it is so because the activity of judging within existential meaning-situations demands it. One or two remarks on the question whether this is the case may at least serve to clarify the issue.

✓ If by a First Cause is to be understood a cause which is first in time, there seems to be no very convincing reason to assume that there is such a First Cause. As we have already argued, ✓ the only reason for assuming any causal connection at all among existents lies in the consideration that such a connection seems necessary to account for their meaningful reference to each other ; unless there were such a causal connection among them, it is not easy to understand how they could be meaningfully related as they are. This, of

¹ See *Aristotle : Selections*, edited by W. D. Ross, pp. 49-52.

course, is simply saying over again what we have already said, namely, that causal connection among existents is assumed as an integral constituent of existential meaning-situations. But in this assumption there appears to be no warrant for concluding that there must be some cause which is the beginning of a causal series; the most that is warranted is the conclusion that there must be a causal connection among existents within a given existential meaning-situation. To show that a First Cause must be assumed as the beginning of a series of causes, one would have to show that a series of existential meaning-situations is inherently such as to demand a beginning; and this, it appears, could hardly be shown, since what the judging of existential meaning-situations calls for is nothing more than a causal relation among the existents involved in the situations within which judging functions.

If it should happen that a given existential meaning-situation turns out to be self-contained, that is, turns out to be such that its complete meaning could be adequately interpreted without reference to anything other than its own constituents, such a situation might be said to be self-caused.¹ If such a situation is what is to be understood by a First Cause, then there may be one. Whether there be depends on whether there be any existential meaning-situation which can be judged exclusively in terms of itself. In this sense, however, the First Cause is not conceived as the first term of a causal series; it is conceived, rather, as a self-contained logical whole, an existential meaning-situation whose meaning is wholly immanent and in no sense referential. And in this sense, the conception of causal connection has been

¹ Spinoza thinks he finds such a situation, and he calls it *substance*. "By substance," he says (*Ethics*, Part I, Definition III), "I understand that which is in itself and is conceived through itself; in other words, that the conception of which does not need the conception of another thing from which it must be formed." Thus defined, substance is identical with what, in our terminology, would be called a self-contained meaning-situation. This substance, Spinoza holds, is infinite and may be called God; and God "is absolutely the first cause" (*Ethics*, Part I, Prop. XVI, Corol. 3).

transformed into a conception which is difficult to distinguish from implicative connection.

Thus it appears that analysis of the notion of a First Cause tends to lead us to the conclusion either that it is not logically warranted or that it must be transformed into the notion of what in logic is commonly called the "ground." In other words, it appears either that causal connection must be admitted only among existents without any reference to a temporally first, or that the distinction between causal connection and implicative connection must be softened if, indeed, not dissolved utterly.

§ 6. *Appearance and reality*

In this concluding section of the present chapter, we turn to a brief survey of a distinction which we all make in one way or another—the distinction, namely, between what things "seen" to be and what they "actually" are, or, more technically, between appearance and reality. The chief purpose of the survey is to make clear the distinction and to introduce the problem of the next chapter.

Despite the fact that it has been denied by thoughtful persons, the distinction between appearance and reality is one which cannot be entirely escaped by whoever looks beyond the end of his nose. It is so common that it is even commonplace. ✓ The lines of the railway track stretching away in the distance seem to converge, but they are in fact parallel; the partly immersed stick appears to be bent under the water, but it is really straight; the weary traveller on the desert sees an oasis where no oasis exists; the crossed fingers feel two marbles where only one is visible to the eyes; the pressed eyeball discloses light in the darkest room. One may go on indefinitely giving examples of the distinction, so long as one chooses to enumerate instances of contradictory experiences even with the commonest objects of sense-perception. And if one chooses to enter upon the dis-

crepancies between the reports of common sense and those of science, examples of the distinction are just as numerous and perhaps more significant. The common-sense rainbow is a highly colored object arched across the heavens, whereas the scientific rainbow is a thing only of configuration and light-waves. The solid substantiality of the common-sense table is dissolved by science into a wraith of a table which is mostly emptiness and wherein numerous electrons dash about with inconceivable velocities. The world of common sense is a solid and colored world, clothed upon with all the richness of sensuous qualities; while the world of physical science is a tenuous world to which solidity and sensuous qualities do not belong. The one is the world of sense-perception, amenable to the gross inspection of largely untutored judgment; the other is a world of conceptual analysis, amenable only to manipulation by the specialist trained in the use of highly technical formulas and symbolic instruments.¹

Thus common sense and science alike force us to acknowledge the necessity of the distinction between appearance and reality. What, then, are we to make of the distinction? How is it to be defined? What is to be called real, and what apparent only? What, in short, is the criterion by means of which the one is to be distinguished from the other? An answer to this question is suggested by our preceding analysis of the activity of judging, and we are now to inquire briefly what this answer is.

If, as we have hitherto maintained, judging functions within meaning-situations, it would seem to follow that all judging is concerned with things as they really are and that everything really is what it is judged to be. And in an important sense this is the case. We can mean by the real only that about which we judge; there is no other content we can give the term. Some philosophers have, indeed, tried

¹ "The frank realisation that physical science is concerned with a world of shadows is one of the most significant of recent advances" (A. S. Eddington, *The Nature of the Physical World*, p. xv).

to avoid this position by identifying the real with that which can never be integral to a meaning-situation.¹ But this device is not workable, since it makes the real a mere mystery by placing it wholly beyond the reach of knowledge. And the only alternative, it appears, is to insist frankly that the real must belong to meaning-situations and to accept the conclusion which follows from the admission. Is the ghost one sees in the dark, then, to be called real? Certainly, we must reply; it is real in precisely the sense in which it can be said to belong to a meaning-situation. And so are the snakes of the inebriate, or the mirages of travellers on the desert of Sahara. So are all constituents of meaning-situations, however "fanciful" they may seem: they are real as, but only as, constituents within those meaning-situations within which the activity of judging takes place.

Are we then, one may ask, committed to a denial of the distinction which we have just said above is inescapable? Must we admit that, after all, the distinction between the apparent and the real is without warrant? This does not follow from what has been maintained in the preceding paragraph. To say that ghosts are real in the sense in which they are integral to meaning-situations is not equivalent to saying that there are real ghosts in such situations. Or to say that what the inebriate sees when he sees snakes is real is not equivalent to saying that he sees real snakes. ✓ The point is this: whenever one actually judges that something is the case one is judging something, and that something is real; but it may not be real as actually judged, it may be apparent only. If I judge that there is a ghost when the physical situation judged is, say, the moonlight shining through a curtained window, the ghost is apparent only, not real; likewise, if the inebriate mistakes his disordered brain and its corresponding images for snakes "out there" in phys-

¹ Kant, for example, undertook to do this in his distinction between *phenomena* (appearances) and *noumena* (realities), the latter of which, he insisted, are not constituents of judgmental situations. For a more detailed statement of his position, see the Appendix below.

ical space before him, his snakes are apparent only, not real. But the moon-lit window of the ghost-seer or the disordered brain and its accompanying images of the inebriate are both real, and not apparent only.

Thus we distinguish between the real and apparent by identifying the former with what is truly judged, and the latter with the object of erroneous judgment. The structure of the meaning-situation itself is real, and that structure is disclosed when it is adequately interpreted. If, however, the judger attributes something to the situation which does not properly belong to it, which, that is, is not disclosed by adequate interpretation, the situation thus modified is held to be apparent only, and not real. For an omniscient being, the distinction between appearance and reality would not hold, because, for such a being, judging could never be erroneous; every act of judging would be veridical, and what was actually judged to be the case would really be so.

It is not to be supposed, however, that the term *reality* is applicable only to existential situations, as if only what exists may properly be said to be either real or apparent. In postulational situations, too, the distinction between the real and the apparent holds in principle. But here, as in existential situations, the distinction is made in terms of veridical and non-veridical judgments. When the mathematician, for example, reasons correctly from his postulates, his insight is veridical and what he infers is real, as contrasted with the fictional character of what is inferred through mistake or incorrect reasoning. Thus it would appear that *reality* and *appearance* are exemplified in postulational situations, as well as in existential, and that the criterion of the distinction in such situations is in principle the same as that which is used in existential situations.

Having determined the distinction between appearance and reality in terms of the distinction between veridical and false judgments, we are now forced to ask concerning this

latter distinction and the criteria by means of which it is to be determined. And until this question is answered, of course, the discussion remains indefinite and incomplete. This question we shall undertake to answer in the following chapter.

CHAPTER V

CERTAINTY OF JUDGING: TESTS OF VERITY

More than once in the analyses of the preceding chapters, we have been compelled to speak of the *certainty* of judging. The distinction between knowing and believing, we have seen, rests in the end on this character of judging; knowing is judging which is certain, while believing is judging which is not certain. We have also seen that the distinction between the apparent and the real is grounded in the same character of judging. Despite its importance for our analysis, however, no attempt has hitherto been made to consider in detail this character of judging or to inquire concerning its determination. This defect in the analysis we must now undertake to remedy. And we begin by noting some distinctions of terminology.

§ 1. *Verity, validity, truth, and their opposites*

As we have already urged, every act of judging is the apprehension and interpretation of a meaning-situation. Now any act of judging which adequately performs its function thus described is veridical, or is characterized by *verity*; if it fails in its function, on the other hand, it is false, or is characterized by *falsity*. In the twilight I see at a distance something which I judge to be a horse: my judgment that there is a horse yonder is veridical or false according as the "something" is, or is not, a horse standing there in the relations I judge it to be; if the "something" is an actually existent horse the act of judging that it is so is veridical, but if

the "something" is a bush or a cow my act of judging that it is a horse is so far characterized by falsity.

Verity and falsity, then, are characteristics belonging to judgment under different conditions. If the act of judging adequately "discloses" the meaning-situation within which it functions, it is veridical; if it does not thus disclose the meaning-situation, it is false. Otherwise expressed: verity belongs to the act of judging which is adequate insight into the meaning-situation, falsity belongs to the act of judging which falls short of such insight.

But there are two types of verity and two types of falsity which need to be distinguished, at least provisionally. These are: validity and truth, with their respective opposites, namely, invalidity and error. Since these are important for the following discussion, we must be clear as to what is to be understood by them.

Briefly defined, validity may be said to be the sort of verity which characterizes acts of judging within postulational meaning-situations. Such situations, it will be recalled from our preceding discussion, are those in which postulates are logically fundamental to meaning, and they are exemplified particularly in the sciences of formal logic and mathematics. Now acts of judging within such meaning-situations which are characterized by verity are said to be valid; if they are false, they are said to be invalid. Here, verity is equivalent to validity and falsity is equivalent to invalidity. Within the postulates of Euclidean geometry, for example, the judgment that of two parallel lines either is parallel to a third which is parallel to the other is a valid judgment, and its contradictory is invalid. Or, within formal logic, if p implies q and q implies r , then the judgment that the affirmation of p is equivalent to the affirmation of r is a valid judgment, while the judgment that p may be affirmed and r denied is an invalid judgment.

But, as we have seen, there is another sort of meaning-situation besides the postulational, namely, the existential

meaning-situation. Within such a situation, an act of judging characterized by verity is said to be true, while one characterized by falsity is said to be erroneous. Here, verity is equivalent to truth, and falsity is equivalent to error. That all material bodies are gravitating is commonly accepted as a true judgment, and it is therefore erroneous to judge that a body heavier than air will not fall to the ground if unsupported.

✓ Verity, validity and truth, then, with their corresponding opposites, falsity, invalidity and error, are closely related but distinguishable terms. ✓ The first pair includes the other two pairs as species; while the latter two pairs are differentiated from each other by reference to the different types of meaning-situations within which they arise. And these distinctions must be borne in mind as we proceed to inquire concerning the criteria applicable to them. Before passing on to this inquiry, however, a peculiar difficulty connected with the several opposites must be noted.

§ 2. *The "object" of false judging*

In the case of veridical judgment, clearly, the object in each instance is the situation which is disclosed. The valid judgment about parallels, for example, has for its object that implicative situation which it describes. Likewise, the true judgment about gravitating bodies has for its object the existential situation which it describes. But what is the object of a false judgment, a judgment which is invalid or erroneous? To this question no easy answer is to be found, and yet the question is quite important. One or two suggestions may at least serve to clarify the issue and stimulate the reader to further reflection on his own account.

In the first place, it seems clear that a false act of judging must have an object. This certainly is necessary if the account of the nature of judging given in the preceding chapters be accepted; for it was there argued that all judging is

essentially directed upon a meaning-situation, which is in some sense independent of the act of judging, and a false judgment is in any case a judgment. But, even apart from the special view of judging above defended, it seems necessary to hold that there must be some kind of object for a false judgment. An act of judging could hardly be false unless there were something in respect of which it is false. Falsity is, so to say, missing the mark; and if there is no mark, it is not easy to see how there could be any missing.

But, in the second place, the chief characteristic of a false judgment is precisely that it fails to describe or "disclose" any object. If it did not so fail, it would not be false but veridical. The judgment that material bodies do not gravitate, for example, or that Charles the First died in his bed, does not describe any objective situation; that is precisely why it is erroneous. And the same holds in principle of invalid judgments; they are invalid because they do not disclose an implicative nexus.

We thus seem to be confronted by a paradox. Every act of judging, apparently, must have an object since it functions within a meaning-situation; and a false judgment, being an act of judging, must therefore have an object. But there seems to be nothing which false judging apprehends and interprets, otherwise it would be veridical and not false. What is the way out of the paradox?

My suggestion is that the way out lies through the denial of the second horn of the dilemma. There is something which false judging apprehends and interprets, namely, the situation in respect of which it is false—that is, the situation which it seeks, but fails, to describe. It is the meaning-situation within which the act of judging functions and of which it claims to be the apprehension and interpretation. The falsity of the judgment lies in its failure adequately to apprehend and interpret the situation. The statement through which the act of judging receives its formulation is, when

strictly construed, a *mis*-statement of the situation ; but the situation itself is the object in judging.

But, one may still urge, the false judging seems to be concerned with an object which remains distinct from the situation judged about. For example, in the judgment that there is an oasis on the horizon yonder when in fact there is no oasis there, we seem to have an object, namely, the imagined oasis, which is different from the actual situation about which the judgment is made. Thus, one may argue, the false judgment appears to have two objects instead of one—the object which is the meaning-situation itself, and the object, purely imaginary, which is asserted by the act of judging and thereby added to the situation. In the veridical judgment these two objects coalesce ; what is affirmed is what is there. But in the false judgment the objects remain distinct. What, one may ask, is to be said of these two objects in the case of false judging?

The answer to this question, following from the position we have been defending, would appear to be that in the false judgment, as in the veridical, there is only one situation, not two. What is actually affirmed in the false judgment is nothing more than a misinterpretation of the meaning-situation within which the act of judging falls and which alone is the object of judgment. In the case cited above, the oasis which is affirmed is not, strictly speaking, an object at all ; it is but a misinterpretation of the observed situation constituted by the phenomena of the refraction of light in a peculiar medium, which situation is the genuine object of the act of judging. In general, the genuine object of a false judgment is just the situation which would be accurately described if the judgment were veridical, or, more accurately, if the judgment were so modified as to become veridical ; the other so-called object of the judgment is spurious, and on analysis turns out to be the creature of a misconstruction of the genuine object.¹

¹ See, by way of contrast, the view of *negative* facts advocated by B. Russell, *The Analysis of Mind*, pp. 271 ff. ; and *The Monist*, 1919, pp. 42 ff.

The distinction here drawn between the genuine and spurious objects in judging coincides with the distinction drawn at the end of the preceding chapter between reality and appearance, and may be taken as simply another statement of it. The genuine object is the real object, while the spurious object is apparent only. In the example given, the phenomena of the refraction of light in the peculiar medium is the reality; the supposed oasis on the horizon is the appearance.

§ 3. *The certainty of judging*

When we speak of the certainty of judging, we make use of a term which is ambiguous. We may, on the one hand, take it as identical with a psychological feeling of conviction on the part of the judge—as when, for example, we say one who feels convinced that something is the case is certain that it is so and, in that sense, his judging that it is so is certain. Or, on the other hand, we may take certainty as a character of the act of judging belonging to it by virtue of its disclosure of the structure of the meaning-situation within which it falls—as when, for example, we say that, independently of anyone's feeling of conviction, the judgment that the interior angles of a triangle are equal to two right angles is a certain judgment. In the first meaning, certainty is a state of mind of the person judging; in the second meaning, certainty is a character of the judgment itself as insight into a meaning-situation.

It is important that the reader should clearly distinguish these two meanings of the phrase "certainty of judgment." It is equally important for him to bear in mind that the second of the two meanings is alone here under scrutiny. A judgment which is certain in this sense is a veridical judgment, and the test of this sort of certainty is a test of verity. And it is this test with which we are here primarily concerned.

When we come to search for this test, however, we find

ourselves confronted with a practical difficulty. The test, if it is to be found, must lie on the side of the judger, that is, it must lie within the mind of the person judging. And this is equivalent to saying that it must, after all, be found as a character of the act of judging considered as some person's activity. For the problem is how we human beings are to know, or have insight into the fact that, an act of judging is veridical, that is, certain in the second of the two meanings above distinguished. And to solve this problem, apparently, we must find in the act of judging itself some trait which will reveal its veridical character. Thus we seem driven back into the position that the test of the verity of judging lies in some sort of conviction accompanying the act of judging whose verity is in question. And the practical difficulty is to distinguish between the conviction which is merely a psychological feeling, and therefore not necessarily indicative of verity, and the conviction which is an indication of verity.

This difficulty, though a genuine one, is perhaps not insurmountable. Some, indeed, have held it to be insurmountable, and have consequently maintained that scepticism, in some sense, is inescapable.¹ And, if the difficulty is insurmountable, scepticism apparently is inescapable: unless we have reason for distinguishing between veridical and false judgments, then so far as we are able to see all may be false. But we seem to be able to distinguish between the sort of conviction which is not indicative of verity and the sort which is. The former does not spring from analytical insight, as the latter does; the former, we may say, is pre-analytical, while the latter is post-analytical. At any rate, several criteria have been suggested by philosophers for distinguishing the two, and many have been convinced that the

¹ The first famous statement of this position in the history of philosophy is the dictum attributed to the Sophist, Protagoras: "Man is the measure of all things, of things that are, that they are; and of things that are not, that they are not." Plato devotes one of his most important dialogues (*Theætetus*) to a detailed criticism of this position.

criteria are sufficient. A consideration of these criteria will at least enable us more clearly to understand the problem and may, in the end, throw some light on the question whether they are satisfactory.

What, then, are these criteria? In attempting to answer this question, let us make use of our distinction between validity and truth and begin with validity.

§ 4. *The criteria of validity*

The two criteria for determining judgments which are valid are commonly said to be self-evidence and consistency. Though intimately linked, these criteria are readily distinguishable; and they may be separately discussed.

(a) A judgment is self-evident when it is so patently valid that its validity is not open to doubt. Self-evident judgments, thus, are supposed to carry within them, so to say, a guarantee of their validity. The so-called axioms of logic (such as, it is impossible for anything to exist and not to exist at the same instant) or of mathematics (such as, parallel lines do not meet though extended to infinity) are supposed to state such judgments. And the contention is that their validity is disclosed by virtue of their very self-evidence.

It would seem that this contention is in principle sound. When we make such judgments, we do undoubtedly hold that they are valid; and we hold that they are so, because we cannot doubt their validity and at the same time have confidence in our rational insight. And there seems to be no doubt that mathematicians and logicians constantly make use of the criterion. Indeed, it is employed everywhere in connection with judging within postulational meaning-situations; within such situations, valid judging is a disclosure of implicative connections such that it has about it the character of indubitability.

Nevertheless, such self-evidence is bound up with the pos-

tulates basal in the meaning-situations within which judging functions, and is consequently a test of the validity of judging only within those situations. If one postulates Euclidean space, for example, then it is self-evident that parallel lines cannot meet though indefinitely extended; given that postulate, the judgment is valid and its validity is adequately attested by its self-evidence. Apart from that postulate, however, the judgment may be invalid, and not self-evidently valid. All of which is equivalent to saying that self-evidence is not immediate and direct, but is indirect and inferential. Being a character of the activity of judging, it is *ipso facto* grounded in a system; a judgment which is self-evident in one system may be invalid in another system, and even self-evidently so. In short, self-evidence is inseparably linked with consistency.

(b) By consistency is understood the sort of connection among judgments which is such that the judgments thus connected can be accepted together. Simple examples of it, drawn from logic, are: "All X's are Y's" is consistent with "No X's are non-Y's" and with "Some Y's are all of the X's." These statements are not identical, and yet their meanings are so involved that they can be judged together; if the first is affirmed the others must be affirmed also, and if the first is denied the others cannot be affirmed. The same connection among judgments is exemplified in all types of deductive reasoning.

That this criterion is applied in the determination of valid judgments, there can presumably be no dispute. In the formal syllogism of traditional logic, in the more elaborate symbolism of the later so-called symbolic logic, and in the long trains of mathematical deduction it finds its application. Indeed, it is the criterion which is relied on throughout our interpretation of postulational meaning-situations.

But, from its side, its linkage with self-evidence must be noted. In order to make use of it, we must "see" the connection among judgments in each instance. Assuming that

A is B is a valid proposition, for example, the proposition B is A is also valid by the criterion of consistency; but in order to apply the criterion we must see the connection between the two propositions. And this "seeing" of the connection between them is nothing more than judging the meanings involved and noting their self-evident relation. Thus consistency and self-evidence are, once more, shown to be inter-dependent. ✓ They are in fact only two aspects of one and the same characteristic of judging within postulational meaning-situations—the characteristic, namely, of logical indubitability arising from insight into the systematic structure of the situation.

§ 5. *The criteria of truth*

Three criteria of truth have been suggested. These are: *obviousness, coherence, and utility*. Let us examine the claims of each separately.

(a) If we are to admit obviousness as a criterion of truth, we must be careful to understand precisely the sense in which it is thus to be accepted. For there are two quite different meanings of the obvious, and in one of these at least obviousness can hardly be a trustworthy criterion.

In the first meaning, obviousness arises from tradition and is nothing more than mere blind acceptance of something as true. In this sense it is simply an untutored conviction, and may as readily attach to judgments which are erroneous as to judgments which are true. As Thomas Hobbes maintained, obviousness in this sense "is metaphorical, and therefore not fitted for an argument; for whenever a man feels no doubt at all he will pretend to this clearness, and he will be as ready to affirm that of which he feels no doubt, as the man who possesses perfect knowledge. This clearness may well then be the reason why a man holds and defends with obstinacy some opinion, but it cannot tell him with certainty that the opinion is true." Obviousness of this sort may, in

fact, be indicative of nothing more significant than superstition and error.

But, in another meaning, obviousness is more respectable as a criterion of truth. This is the meaning in which it attaches to the sort of insight which is identical with judgmental interpretation of a meaning-situation. Taken in this meaning, obviousness must be admitted as at least one criterion of the truth-claim of judgment; indeed, in this meaning, it must be said to be a basal characteristic of all true judgments, since it arises precisely through the interpretation of existential meaning-situations.

As thus understood, however, obviousness is difficult to distinguish from the criterion of coherence. For it is not only indicative of a system, but is also subject to correction by further disclosure of the structure of the system. It is indicative of a system, because it arises through the interpretation of a systemic whole, that is, through the judging of a meaning-situation. And it is subject to correction by further disclosure of the system, because the activity of judging is progressively modified, in respect of its insight, through the process. In short, obviousness is a characteristic of judgmental insight, and such insight is relative to the meaning-situation in which it functions. And this is equivalent to saying that obviousness is bound up with coherence.

(b) By coherence is to be understood a relation among judgments which is such that the judgments can logically (that is, without contradiction) be accepted as true together, the truth of one being involved in the truth of the others in such fashion that, if one be affirmed, the others cannot logically be denied. Otherwise expressed: coherence is a logical relation among judgments whereby all may be accepted as true without contradiction. Or, again: two or more judgments are coherent if they are relevant to each other and may logically be asserted together.

By the test of coherence, then, a judgment is held to be true when it can be affirmed along with other relevant judg-

ments. The judgment that all material bodies gravitate, for example, is by this criterion known to be true because it can without contradiction be affirmed along with other judgments about material bodies. The judgment that all men are trustworthy, on the other hand, is not thus coherent with other relevant judgments, since it cannot be affirmed without contradiction together with other judgments about human beings; by the criterion, therefore, it must be held to be erroneous. According to the criterion of coherence, thus, the truth of a judgment is guaranteed by the fact that it can logically be accepted with other relevant judgments.¹

This criterion is the one which best fits in with the view of judgment we have all along been defending. Judgments which are relevant to each other would, on our view, be judgments which function within essentially the same meaning-situation, and whose meanings would therefore be mutually linked. And such judgments would necessarily cohere with each other, since they are interpretations of one and the same situation. The criterion of coherence, thus, is the criterion which would most readily apply in the determination of those judgments which are adequate interpretations. For judgments which do not cohere could hardly be held to interpret the same situation; some of them at least would necessarily be erroneous. And, on the other side, coherence among them would strengthen the conviction that all were true, and not erroneous. If the view of judgment we have defended is to be accepted, then, the coherence criterion would appear to be most applicable.

¹ The statement of the view given by B. Bosanquet, who is one of the outstanding proponents of it in recent philosophy, is as follows: "A judgment is true, as I understand the term, when or in as far as its self-maintenance as a judgment is perfect. That is, in other words, when the whole system of the judgments, which experience forces upon the mind which makes it, contains less contradiction in case of its affirmation than in case of its denial. Such a judgment is 'true' because on the whole it cannot be denied—not, that is, till there is a change, other than its denial, in the body of experience" (*Logic*, Vol. II, second edition, p. 288). For a more detailed statement of the view, the reader should consult H. H. Joachim, *The Nature of Truth*, Chapter III.

Two objections against the criterion of coherence have been advanced, however, and these we must now consider.

The first is that this criterion fails, because it is perfectly possible to construct a coherent system of false judgments. In reply to this objection, the question may be raised whether this is possible. Coherence among erroneous judgments seems not to obtain; for coherence, as we have seen, is a logical relation among judgments, and among erroneous judgments no logical relation holds. That the moon is made of green cheese, that the moon is the habitat of living things, that the moon does not shine by reflected light—these are three judgments about the moon which presumably are erroneous. But they are not coherent, since they have no logical relation to each other. The affirmation of any one of them has no bearing whatever on the affirmation or denial of the others. They could, indeed, be accepted as true together; but the acceptance of one does not demand acceptance of the others, indeed does not establish any presumption whatever in respect of them. And the point here illustrated may apparently be generalized: a coherent system of wholly erroneous judgments seems to be intrinsically impossible, since logical connection among such judgments is lacking.¹

The second objection against the criterion of coherence is based on the historical fact that many scientific judgments finally accepted as true did not, when first presented at least, cohere with other relevant judgments then commonly accepted as true. The historical fact must, presumably, be

¹ If one constructs a fictional system without reference to existents (assuming that such construction is possible, which is doubtful), truth and error cease to apply and the sort of verity involved, if there be any, is that of validity. In such a system, consistency, as contrasted with coherence, is the criterion. And what is said above about coherence holds in principle of consistency within such systems. It is as impossible to construct a system of wholly invalid judgments as it is to construct a system of wholly erroneous judgments, and for essentially the same reason: a "system" of invalid judgments could hardly be implicative, and apart from implication one is at a loss to understand how the judgments could be systematically joined.

admitted. The judgment that the earth is spherical, for example, when first suggested in modern science, was not coherent with other supposedly true judgments concerning the shape of the earth; nevertheless, it was finally accepted as true and the other judgments discarded or modified to meet it. Likewise, the judgment that the earth swings in an elliptical orbit about the sun was finally admitted into astronomy, despite the fact that, at first, it was not coherent with commonly held astronomical beliefs. Such historical facts must be granted, and they are numerous. But do they show that coherence is not a test of truth in scientific procedure? On the contrary, a good case can be made for the contention that they show the opposite. For such judgments, it may be argued, were finally accepted as true because they introduced into the body of relevant judgments a greater degree of coherence than would have been introduced by the acceptance of the judgments directly competing with them. In other words, when viewed in the light of what is supposedly known at the time, such judgments are more easily (logically) accepted as true than rejected as erroneous. Coherence, thus, is the test actually applied.

We have said above that obviousness, in the sense in which it is to be admitted as a criterion of truth, is closely linked with coherence. We must now briefly note the connection viewed from the side of coherence. When in a given instance we undertake to show that two judgments are coherent, we are sooner or later driven into the position where we must say simply that the coherence is obvious. For example, there are many observations, concerning the apparent motions of sun and planets, with which the judgment that the earth moves in an elliptical orbit around the sun is coherent; and that is why astronomers accept the judgment as true. But what, precisely, is to be understood by the assertion that the judgment in question is coherent with the observational judgments? In the end, all we can say in

reply to such a question is that the astronomer "sees" the logical connection of coherence among the judgments. Given the judgments concerning the apparent motions of sun and planets, the judgment that the earth actually moves in the orbit as described is seen to be involved logically; or given the judgment concerning the actual motion of the earth, the observational judgments about apparent motions are seen to fit into the picture. Thus, in precise analysis of what is involved in the detection of coherence, we seem to find that obviousness is fundamental there.

Obviousness and coherence as criteria of the truth-claim of judgments, then, are not sharply separable; on the contrary, they are mutually involved. And this fact is readily accounted for on our theory of judgment. The two are simply different aspects of judgmental insight into existential meaning-situations. When the meaning is taken as immanent only, and not as referential, the insight appears as "obvious" and is on that account said to be true. When the meaning is taken in its referential character, however, the insight is characterized by coherence and, once more, is said to be true.¹

(c) According to the criterion of utility, a judgment is true when it "works satisfactorily" in reflective experience. If a judgment is effective in enabling us to get around a theoretical or practical difficulty, to solve a problem, then, according to this criterion, the judgment must be said to be true. The theory which primarily emphasizes this criterion is commonly called pragmatism, and we shall henceforward refer to it by that name.²

¹ For the distinction between meaning as immanent and meaning as referential, see above, Chapter II, Section 1.

² The pragmatic theory is historically attributable chiefly to three American philosophers, namely Charles Peirce (*Collected Papers of Charles Sanders Peirce*, edited by C. Hartshorne and P. Weiss, especially Vol. V), William James (*The Meaning of Truth, and Pragmatism*), and John Dewey (*How We Think, Essays in Experimental Logic, Reconstruction in Philosophy, and The Quest for Certainty*). Credit is usually given to Peirce for

As formulated by James, the pragmatic theory contains two basal tenets: that "satisfactory working" is the only test of the truth-claim of judgments (or ideas), and that verity and verification are identical. And with this statement Dewey apparently agrees in principle. For purposes of clarity, we may note the two statements separately.

The first tenet James states as follows: "'The true,' to put it very briefly, is only the expedient in the way of our thinking, just as 'the right' is only the expedient in the way of our behaving." And elsewhere he informs us that a sufficient test of the truth-claim of a judgment lies in answer to the questions: "What concrete difference will its being true make in anyone's actual life? How will the truth be realized? What experiences will be different from those which would obtain if the belief were false? What, in short, is the truth's cash-value in experiential terms?"¹ Given the answer, we have in hand all that is necessary to determine whether the judgment in question is true or erroneous.

The second tenet is stated by James thus: "Truth happens to an idea. It becomes true, is made true by events. Its verity is in fact an event, a process: the process namely of its verifying itself, its verification. Its validity is the process of its valid-ation. . . . Truth for us is simply a collective name for verification-processes, just as health, wealth, strength, etc., are names for other processes connected with life, and also pursued because it pays to pursue them. Truth is made, just as health, wealth, and strength are made, in the course of experience."² Dewey puts this second tenet

first having stated the basal principle, in an article published in 1878 in *Popular Science Monthly* under the title "How to Make Our Ideas Clear." The popularization of the theory was largely due to the facile pen of James. The most painstaking and systematic formulation of the theory is found in the writings of Dewey. G. H. Mead (whose works are soon to be published by the University of Chicago Press) also made valuable contributions to the statement of the theory.

¹ *Pragmatism*, pp. 200, 222.

² *Pragmatism*, pp. 201, 218. The italics are in the text.

as follows: "The true means the verified and means nothing else."¹

These, then, are the two main tenets of the pragmatic theory of truth. In our discussion of them, let us begin with the second.

The contention that "truth *happens* to an idea," that the verity of a judgment is the process "of its verifying itself, its *verification*," is a contention which cannot stand if the view of verity we have been defending is allowed. For we have maintained that a judgment is veridical when it adequately discloses the structure of the meaning-situation within which it functions, and of which it claims to be the interpretation. And, if this view of verity is accepted, then it is not permissible to say that verity is identical with the process of verification; since, on this view, a judgment may be veridical whether it has been verified or not.

The contradiction between the pragmatic tenet here under discussion and the position we have taken arises, of course, out of two different views of the nature and function of the activity of judging. For the pragmatist, judging is essentially "instrumental" and is directed solely towards the removal of discrepancies within experience; it is not directed upon a situation to the end of interpreting it. For the position defended in our analysis, on the other hand, judging is interpretative and aims to disclose the structure of those meaning-situations within which the activity of judging takes place. To debate the issues involved in this divergence of views concerning the nature and function of judging would take us too far afield from our immediate problem, and therefore cannot here be undertaken. In defense of the position we have taken, the preceding analysis must here be appealed to.²

¹ *Reconstruction in Philosophy*, p. 160.

² I have in some measure argued the point elsewhere in an article "On the Second Copernican Revolution in Philosophy," *The Philosophical Review*, Vol. XLI, pp. 107-129. The references there given indicate passages

As a stimulus to the reader's further reflection on the special issue now before us, the following question is suggested: Is it significant to say that a judgment may be true and yet not be known to be true? The judgment that Mars is inhabited by intelligent beings, for example, is a judgment which is meaningful in the sense that there is a meaning-situation of which it may be the interpretation; nevertheless, it is not verified and, at present at any rate, we cannot verify it. May it still be true? If so, then its verity is not its verification: and there is apparently no reason to suppose that this judgment is, in this respect, exceptional. Of course, an act of judging must take place before it can be true, and it must be verified before it can be known to be true; but what justification is there for holding that the process by which it is verified is the process by which its truth eventuates and "happens" to it?

The objection most commonly raised against the first tenet of the pragmatist, to turn now to that, rests upon the ambiguity of the notion of utility, or "satisfactory working", as the criterion of the truth-claim of judgment. To say that a judgment is true when it works satisfactorily in experience is to say nothing definite until the terms of the statement are more precisely defined. What is to be understood by "satisfactory working" and what by "experience"? If the former is equated with agreeable consequences in the mind of the person making the judgment, then it should be clear that many judgments which work satisfactorily in this sense are nevertheless regarded as erroneous and, on the other side, many judgments which do not thus work satisfactorily are commonly accepted as true. If by "experience" is meant individual experience, then by the pragmatic test one and the same judgment may be both true and erroneous, since one and the same judgment may work satis-

from the writings of Dewey in support of the pragmatic position. Cf. also, J. Ratner, *The Philosophy of John Dewey*, Chs. VI-VIII. For some further remarks, see below, Chapter VII, Section 4 (b).

factorily in one such experience and not in another. Or, if by "experience" is meant perceptual experience, then it should be clear that many judgments (such as those commonly called scientific) are not limited to experience in this sense, and therefore could hardly be tested by reference to their function within experience.

Pragmatists generally recognize such objections against their position. But they insist that the objections are based upon a misinterpretation of the terms in question. By experience, they insist, is to be understood both conceptual and socialized experience, reflective experience of "the long run"; and by satisfactory working of judgment they intend any and all consequences which are both intellectually and practically satisfying in such experience.¹

On this understanding of the terms, however, an objection still remains. If experience is expanded to include socialized experience and if satisfactory working is understood as identical with intellectual satisfaction within such experience, then the criterion of utility apparently differs only verbally from the criterion of coherence. For, with this understanding of the pragmatic theory, utility virtually demands harmony or coherence among all judgments which are relevant to the meaning-situation judged about. Thus, it would appear, utility is either an inadequate criterion of the truth-claim of judgment, or it differs from the criterion of coherence by such a narrow margin that the difference between the two is hardly distinguishable.

(d) The general conclusion emerging from the preceding analysis of the three criteria of the truth-claim of judgments under discussion is that coherence seems to be basal. Both obviousness and utility carry with them special emphases, and each emphasis is undoubtedly made use of by us in the determination of true judgments. Obviousness is often the

¹ The reader should note Dewey's discussion of what the pragmatist means by "the practical," especially in *Essays in Experimental Logic*, Chapters XII-XIII; and also his account of "experience" in *Experience and Nature*, Chapter I.

starting-point of our inferences, and is accepted as trustworthy. But it is not necessarily final, and where it is questioned we have to fall back on the criterion of coherence; in other words, the obviousness in which we have final confidence is grounded in coherence among our judgments. Likewise, we frequently make use of utility when distinguishing true from erroneous judgments. But here, once more, the criterion is not necessarily final; when we carefully describe the sort of utility in which we are in the end willing to place confidence in our quest, we find that it tends to coalesce in principle with coherence. Thus the three criteria are inextricably bound up with each other, the criterion of coherence being basal and the others related to it, so to say, as special emphases within it. Nor is this surprising, if the activity of judging is as we have described it—namely, the apprehension and interpretation of a meaning-situation. For such a situation is systemic; and various acts of judging within one and the same situation must, if true, be coherent, since all are meaningfully linked together by virtue of the situation's systemic structure.

§ 6. *Truth and validity*

Thus far in our discussion we have treated truth and validity as if they were utterly separate from each other. But the fact remains that they are both species of one common genus, namely, verity; and in the detailed analyses of the criteria of each it appears that there is some sort of connection between them—coherence and consistency, the two fundamental criteria, tending to merge into each other. Thus the question is inescapable whether truth and validity are logically distinct, and that question we must now face. It may be briefly stated as follows: Is a judgment which is valid also true, and is a judgment which is true also valid? Let us consider the two parts of the question separately, beginning with valid judgments.

At first glance, at any rate, it does not seem that if a judgment is valid it must also be true. One may construct a geometry of flat-land, for example, or a solid geometry, or a multi-dimensional geometry, by devising various postulates concerning the nature of space. In any such geometry, every judgment which properly belongs to it, that is, which can stand the test of self-evidence and consistency as described above, would be a valid judgment, but it need not necessarily be a true judgment. Nor, when once we understand what precisely is asserted in such a statement, need we hesitate to accept it. What is asserted is simply that, on certain assumptions, a given judgment may be valid and not true; that, in other words, a given judgment may be the interpretation of a postulational meaning-situation, and at the same time not be the interpretation of any existential meaning-situation. And so long as we move within the postulates of the situation in question, there need be no hesitancy in accepting the assertion.

If, however, the postulates themselves are brought into question, the problem takes on a somewhat different front. What about the postulates of our geometry of flat-land, for instance? Are they valid, but not true? To hold so seems to be quite arbitrary. For another geometry, say a multi-dimensional geometry, with other postulates, which may even be contradictory of the original postulates, can as readily be constructed; and if the question is as to which is to be accepted, appeal can hardly be made to validity, since, strictly speaking, one is as valid as the other. Preference here must be decided by an appeal to truth rather than to validity strictly taken. In other words, if one is to be chosen rather than the other, the postulates involved must themselves be judged; and such judgment must run beyond the postulational situation out into an existential one. Otherwise, apparently, the postulates remain arbitrary, and the choice of one set rather than the other is also arbitrary. Validity, thus, seems to be quite arbitrary in its foundation, or

it is logically linked with truth. The latter would appear to be the alternative we are driven to, when we force ourselves to judge the full meaning of those postulational situations within which validity falls.

When we view the problem from the point of view of the truth-claim of judgments, we find the same linkage between truth and validity. There is, indeed, a sense in which we might say that a judgment which is true is not also valid—the sense, namely, in which we wish to say that a judgment which is true is more than merely valid. For when we say that a judgment is true we certainly intend to assert something of it which is not asserted when we say only that it is valid. Nevertheless, when we actually test the truth-claim of a judgment, we must make use of what above we have called the test of validity, namely, consistency. For the determination of coherence among judgments necessitates appeal to the principle of consistency. When we ask of two judgments whether they are coherent, we must formulate them and inquire whether they are mutually involved logically, whether they can be held to be true together without contradiction and are logically dependent on each other; and, doing this, we are in fact applying the principle of consistency. And this seems to indicate that the principle of validity holds among true judgments, and consequently that truth is linked with validity.

What we have been saying hitherto in this section may be put in another way. Postulational meaning-situations and existential meaning-situations, we may say, are not in the end sundered from each other.¹ The process of judging, whether within the one or the other sort of situation, is actually a process which interprets existents, but through the instruments of postulates. This is at least one thing that is asserted in the statement, commonly made, that deductive and inductive reasoning are inseparably linked in the process

¹ Note what was said in the fourth section of the preceding chapter on the relation of implication and causality.

of inference. To work this out more completely would necessitate a more extended analysis of the two sorts of meaning-situation and their relation to each other. But into the complexities of this problem we cannot here further enter, and we pass on in conclusion to a discussion of the verity of beliefs.

§ 7. *The verity of belief*

When our judgments are tested and verified, we are said to possess knowledge. There are many judgments, however, which cannot be verified and whose claims to verity consequently remain indeterminate. Such judgments we commonly call beliefs, as distinguished from knowledge. What is the logically justifiable attitude in respect of such judgments?

As we noted in a preceding chapter, there are two sorts of belief; and for the purpose of the present discussion these must once more be distinguished. In the first place, there is the sort of belief which is based upon knowledge and logically linked with it. Every scientific hypothesis, before it is definitely established, is belief in this meaning of the term. Franklin's guess that lightning is identical with electricity, for example, was this sort of belief until he succeeded in proving it; it grew directly out of what he knew about lightning and electricity. Any belief which can be argued about on the basis of what is known is an example of this type. In the second place, there is that body of beliefs, commonly called religious, which are not thus logically linked with knowledge. Such beliefs are ordinarily based on some authority, a creed or a book, supposedly infallible; but the authority is not usually held to be irrational in its demands, though the rationality of what is demanded is not commonly stressed or regarded as specially important. The important point is that its demands are taken as ultimate.

Beliefs of the first sort are subject to the ordinary criteria, since they are nothing but ordinary judgments. In the na-

ture of the case, self-evidence could hardly apply to such judgments, since no belief could be self-evident. But the test of coherence certainly applies, and by means of it at least the probability of the belief might be established. In those instances where the belief so far outruns knowledge that the criterion of coherence is difficult of application, the pragmatic test would serve in some measure to determine the worth of the belief. That beliefs of this sort are subject to the ordinary criteria of truth is evident when we consider that growth in knowledge really consists precisely in transforming such beliefs into knowledge; the body of knowledge expands through the validation or disproof of such beliefs.

Beliefs in the second meaning above described are somewhat different, but in the end they are subject to the same criteria. They are essentially judgments within postulational situations, the authority in each instance functioning as the postulates. If one is interested in testing merely their validity, one would apply the criterion of consistency by simply asking whether the belief in question is consistent with the authority on which it claims to rest; this is the sort of test usually applied by those who are concerned with questions of orthodoxy in religious beliefs. If one is interested to go beyond the validity of such beliefs and inquire into their truth, however, one must bring the authority into question. Doing so, the criteria which apply are those which apply to any other judgments functioning in existential situations. For the question which must be answered in this instance is whether the authority adequately interprets the meaning-situation it claims to interpret; and the answer to the question can be found, if at all, only in analysis of the situation itself.

It is possible, indeed, that one might entertain a belief which is not linked with knowledge or based on authority. The belief that the inhabitants of the planet Mars have a language with forty characters in its alphabet would, if seriously entertained by anybody, be a belief of this sort. In

such beliefs, of course, logic fails because nonsense reigns. They can hardly be called judgments, since there is no determinable meaning-situation within which they can be held to function. The only attitude one can assume towards them is to regard them as wholly arbitrary and without significance. Or, if one can tie them down to any definite meaning-situation, one can then deal with them as if they were beliefs of the first type discussed above.

Of beliefs linked with knowledge, then, we may say that it is not unreasonable to entertain them. On the contrary, reason is always entertaining such beliefs, since they are essential characteristics of judging within existential situations. They are essential, however, only in the sense that they serve to point the way towards further inquiry and investigation; and they are subject to correction, perhaps even to rejection, in the light of this further inquiry. Of beliefs based on authority, too, one may say that acceptance of them is not unreasonable. ✓ The important matter is the logical trustworthiness of the authority in question, and this is crucial. If the authority claims to lie beyond the reach of judgmental insight, such a claim certainly must be held suspect; and acceptance of the authority can then only be arbitrary, or based upon considerations other than those which concern truth. If it makes no such claim, however, then belief grounded in it may even be demanded by judgmental insight, and thus be quite rational. But of beliefs entirely sundered from judgmental insight and not in any way testable with reference to it, all that can be said is that they can be seriously entertained only by an abnormal mind or by one which at best is unusually thoughtless.

CHAPTER VI

FREEDOM OF THOUGHT

As we have argued in some detail in the preceding chapters, mankind's intellectual enterprise, so far at least as its noetic aspect is concerned, is an affair of meanings. With meanings it begins, and through the instrumentality of meanings it is carried to its fruition. But, as we have also noted, meanings are always and everywhere involved in points of view; whatever has meaning possesses it in respect of a point of view (or perspective), apart from which its meaning-character seems to disappear. We must now note, however, that such points of view are not exclusively individual creations, as if a given point of view were wholly the product of some particular biographical mind; on the contrary, they are products of social situations, the mind of the individual being everywhere linked by custom and tradition with other minds. This interlocking of the individual mind with the group-mind and what is involved in it will later confront us for a somewhat detailed scrutiny.¹ Here we are concerned with one special problem which arises out of it—the problem, namely, which is commonly referred to as the problem of freedom of thought.

§ 1. *The significance of the problem*

Everyone is at least vaguely aware that the problem of freedom of thought concerns the right of the individual thinker to entertain and express whatever views seem to him veridical, regardless of the views of others. And everyone knows that the problem is of great practical import. But

¹ See below, Part II, Chapter XI.

few appreciate the full reach of the theoretical issues involved in the problem ; and fewer still, perhaps, are clearly conscious of its tremendous ramifications on the practical side. So our first task must be to understand the issues involved, and this can perhaps best be accomplished by a brief survey of the historical circumstances which generate the problem.

(a) Primitive man, characteristically at least, is quite innocent of the problem. And he is so, because the cultural level at which he exists is not such as to generate it. For at this level the individual ordinarily thinks and acts precisely as the group thinks and acts. Here the group-mind, as expressed in the customary and traditional beliefs and behavior of the group, holds undisputed sway over every individual within the group. If, for instance, in any given group it is customary to build houses with only one window, then every individual will build his house after that fashion ; if it is customary within the group to condemn certain types of conduct or to accept certain religious beliefs and perform certain rites and ceremonies at stated times, then each individual will so behave without cavil or hesitation. In short, within the primitive group it is the natural thing for the individual to follow customary activities and to accept traditional beliefs without question. To do this is as natural for primitive man as to breathe or procreate his kind. Of course, so long as the individual thus submits to the customs and traditions of his group the problem of freedom of thought cannot possibly arise. When everybody thinks like everybody else, there can be no question whether each has a right so to think ; each one thinks as he does simply because it is being done.

But with the expansion of the solid primitive group into more complex and loosely-knit social types comes the emancipation of the individual from total and unquestioning subservience to the group-mind. This is one side, and a very important side, of what we are pleased to call advancement

in civilization and culture. And from it there inevitably results a conflict between the individual's ways of thinking and those of the group, between the individual's point of view and the "climate of opinion" in which he happens to find himself. The individual tends to become critical of the customs and traditions around him and to raise troublesome questions about the significance and importance of old manners and beliefs.¹ Thus there develops a conflict between the individual and his group, between his own meanings and the traditional ones of the group-mind. And it is precisely this conflict which gives rise to the problem of freedom of thought and action. So long as there is no such conflict there can be no problem of free thought, that is, individual thought, for the very simple reason that then there is, strictly speaking, no "individual thought" at all; so long as the individual thinks precisely as the group thinks, there is no one to raise the query whether he has a right thus to think. But, just so soon as differences among points of view emerge within the group, so soon are traditional ways of acting and believing placed in jeopardy; and at once there arises the all-important problem of the right of the individual to set up his own point of view in antagonism to that of the group. If one presumes to doubt the verity or importance of the traditional, one thereby claims for oneself a prerogative of fateful potentiality; and such presumption those who believe in the sanctity of the traditional cannot permit to go unchallenged. What justification is there for any individual, or minority of individuals, thus to place individual insight above that of the group hallowed, as it usually is, by a long history? is the question which the group cannot avoid asking.

¹ An early historical illustration of this may be found in the appearance of the Sophists in Greece of the fifth century B.C. and the general movement of thought of which they were the chief exponents. Not only did they call in question most of the traditions of their day, but they also subjected them to a vigorous and rather destructive criticism. The Renaissance and the Reformation are later examples of the same critical attitude towards the past.

And the individual, if intellectually honest and possessed of moral courage, is bound to reply with the counter-question: Why is not the considered insight of the individual of more worth, both theoretically and practically, than mere tradition? And, so, the battle between the two is on.¹

(b) The tremendous significance of the conflict lies in the basal character of the forces involved in it. A word of emphasis on this point may aid clarity.

It is easy to see that what we call the traditional is a set of factors which manifest in concrete form the organization of human society. Customs and traditions are to the group what habit and recollection are to the individual: they conserve the results of the group's previous experiences and make the past function in the present. Apart from them, it is difficult to see how organized society could exist; certainly, anything like social stability would be impossible without them. They express that continuity within group experience which, from one point of view at any rate, may be said to be the very foundation of social stability. They are, in short, the balance-wheel of the life of society. The group in which the traditional is dominant, therefore, is stable—as is illustrated, among modern nations, in the older China, which for centuries remained stable in the midst of a changing world and witnessed the rise and fall of many other nations and even of civilizations.

The change which we euphoniously call social progress and development, however, is inseparably linked with individual insight. Its motivity is largely the exceptional individual, the individual who breaks away from beaten intellectual paths and blazes new trails for himself and his fellows who are sufficiently alert to follow. The mind which

¹ Of course, in a successful revolution the emphasis suggested in the text above may be reversed. In such case, the group may be said to be anti-traditional, against the *status quo* and all it expresses, and the free thinker, consequently, the upholder of tradition (*cf.* the situation following upon the French Revolution, or conditions in Soviet Russia to-day). But the principle remains the same: the individual thinker against the group, the minority against the majority.

holds beliefs different from those commonly accepted by the group and which forces the group to modify its customs in consequence is an indispensable factor within any progressive community of minds. It is the dynamo of social advancement.

Hence the very great significance of the problem of freedom of thought. It is the problem concerning the proper adjustment between two basal social forces. The traditional is essential to group organization; individual minds that have insights of their own are essential to progress in society. The function of the one is conservation and stabilization, the function of the other is creation and change; and both functions are indispensable in a social order whose stability is not to be stagnation, or whose change is not to be marked by chaos. "Where there is no vision the people perish"—and there is no vision where no minds are permitted to glimpse other vistas than those that stretch away into the dim and musty past. On the other hand, where there is no community of insight chaos reigns—and there is no such community where the individual alone is the measure of what is rational and liberty is synonymous with idiosyncrasy. How are the two conflicting forces to be properly reconciled? This is the problem of freedom of thought, and its significance can hardly be exaggerated. How is it to be solved?

§ 2. *Solution of the problem*

One solution offered is that of the *conservative*, who lays emphasis on the importance of the traditional and insists that, in the main, it should have right of way. Another solution is that of the *radical*, who places the emphasis on individual insight as basal and tends to minimize the traditional. Let us analyze briefly these two positions.

(a) The conservative may advance the following considerations in support of his position. In the first place, he

may urge that, in view of the important function of traditional beliefs in the life of the group, every effort must be made to keep them, at least the most basal ones, undisturbed by doubts and criticism; otherwise, the bed-rock of our social structure is undermined. In the second place, he may emphasize the practical dangers involved in any critical attack upon these beliefs, the chief danger being the consequent threat of social disruption and anarchy; and he may point to history in support of his fears. And, finally, he may contend that those beliefs which have stood the test of time are more likely to be true than those which are limited to the narrow confines of individual experience. In short, he may appeal to the practical utility of tradition as a stabilizing factor, the consequent danger to society involved in criticizing the more basal traditions, and the presumption in favor of the verity of traditional beliefs as contrasted with those for which the individual alone is responsible.

On his side, the radical may present the following arguments in support of his claims. Traditional beliefs are, in the nature of the case, expressions of points of view that belong to the past, and they are constantly being outmoded through the acquisition of new knowledge; they therefore stand in need of continuous revision in the light of new truth, and unless thus revised they must ultimately cease to function satisfactorily within the life of the group. Again, since individual insight is the indispensable pre-requisite of social progress, to shackle the individual mind by placing tradition above it as in principle coercive is to block progress and bring the life of the group to a dead standstill. Finally, the prejudice that the older a belief is the greater chance it has of being true is based upon nothing more significant than a false assumption. That a belief has stood the test of time, even of a long time, is in itself no guarantee of its verity, or of its utility, unless it can be shown that the test time has brought to bear upon it is such that it meets the demands of advancing knowledge, that is, the demands of individual

insight ; many of the most hoary traditions are nothing but superstitions, and the older they are the greater is their likelihood of being such. In short: traditional beliefs are *eo ipso* of the past and so are constantly in need of revision or rejection, individual insight must be freed from the hindering influences of the traditional and customary if progress is to be possible, and the mere age of a belief is perhaps a guarantee of its valuelessness (out-of-dateness) rather than of its value.

(b) What, now, shall we say concerning the relative merits of the claims of conservatism and radicalism as above suggested? Apparently we must say, in the first place, that there is truth on both sides of the controversy. The conservative is undoubtedly right in holding that the customary and traditional element of group-life is of very great importance and must in any event be protected ; and it is equally clear that the radical's demand for an open air in which the individual mind may breathe and flourish is amply warranted. But we must also observe, in the second place, that both are in danger of over-emphasis, each tending to neglect the truth in the other's position. To the extent that the conservative is extreme in his demands and makes the claims of the traditional absolute, insisting that the individual mind should be made subject to it without recourse, to that extent his emphasis is misplaced and his position untenable ; traditional beliefs cannot be taken for the criterion of truth, when they themselves are in question. Likewise, when the radical grows extreme in his claims and belittles the importance of the traditional, holding individual beliefs as more important simply because they are novel, his position becomes intellectually unsatisfactory and practically even dangerous ; he then fails to distinguish between a sanely critical attitude and mere individual caprice and prejudice—a failure which no one can make and at the same time expect to be taken seriously by persons of sober judgment. Compromise between the extreme positions is necessary. The conservative,

on his side, must be willing to admit that, while the traditional is very important and significant, there attaches to it no sacred character which forbids its revision, or if necessary its rejection, in the light of new insights. And the radical, on his side, must be willing to admit the importance of the traditional and to advocate its acceptance until newly acquired and properly tested claims of knowledge force its revision or rejection as the case may be. Such compromise would, indeed, tend to bring the two positions together, and to leave them with no differences which could be called fundamental. But it would also result in a position much more tenable than either of the extremes.

At least, such a mediatory position is the only tenable one, if the view of judgment supported in our previous analysis is to be permitted to stand. Let us dwell for a moment on the point.

According to that analysis, we recall, judgment is concerned with meaning-situations; and each meaning-situation involves a point of view, or perspective, as one of its constituent terms. But a point of view within a meaning-situation is not merely an affair of an individual mind or thinker. On the contrary, it is under external control in two separate directions at once. On the one side, it is under the control of the systemic structure of the meaning-situation itself, of that which means and that which is meant; this we ordinarily express by saying that it is under the control of fact. And, on the other side, it is reminiscent of the thinker's social *milieu* and reflects, more or less faithfully, the commonly accepted meanings or "climate of opinion" within which his intellectual lot is cast. No man can think unto himself any more than he can live unto himself; his thinking, like his acting, is under the control of circumstances, and the circumstances functioning are both physical and social.

Now when the point of view of a thinker is dominantly under the control of the structure of the meaning-situations within which his judging takes place, we say of him that he

is an original thinker and his thoughts are his own. Here he is judging as an individual. But when his point of view is dominantly under social control, we say of him that he is merely reflecting the traditional in his thinking and repeating what others have thought before him. In other words, to think for oneself is equivalent to judging in the sense in which we have hitherto been using the term; while acceptance of the meanings that have grown up in one's mind through contact with the opinions of one's fellows is not thinking for oneself, but is taking for granted what one is told through custom and tradition.

So long as one "thinks" only in the latter sense, one is merely transmitting old opinions. To be a creator, as contrasted with a transmitter, one must break away from the dominance of merely social control and link one's point of view with those meaning-situations the interpretation of which is the goal of his activity of judging. Only so can one add to mankind's store of knowledge. But one cannot entirely break away in his thinking from all social control. In order to do so, one would have to begin his judgmental activity wholly without any point of view, to "sweep and garnish" his mind as Bacon advises everyone to do. But this is intrinsically impossible of achievement; for it is equivalent to saying that one should judge wholly apart from the instrumentality of meanings, since meanings are inextricably linked with a point of view, and this is intrinsically impossible. No, one cannot begin *de novo* the task of thinking; everyone must begin where he finds himself, namely, in the midst of that set of meanings furnished him by the cultural environment into which he is born. In this sense at least the intellectual enterprise is not Tom's or Dick's or Harry's; it is mankind's.

In the very nature of the case, then, the process of judging is a process of re-interpretation of the traditional (one's "inherited" point of view) in the light of further insight into the systemic structure of meaning-situations (one's "acquired"

point of view). In order to think for oneself, one must first of all understand what others have thought ; apart from such understanding, the first step in original thinking cannot be taken. But having understood, one has not attained the goal of thinking ; that is attained only through insight into meaning-situations. (In other words, one who thinks must get hold of the traditional as an indispensable starting-point ; and accepting this, tentatively and provisionally, one must pass on to inquire whether it stands in need of modification or rejection in the light shed by further penetration into those structures of meanings with which the activity of judging is primarily concerned.) And all of this is only repeating, in the terminology with which our previous analysis of judging has presumably made us familiar, what was said above in connection with the positions of the conservative and the radical—namely, that both are sound, but only in so far as each admits the soundness of the other. It is hoped, however, that, since the restatement is supported by our previous analysis of judging, it is something more than a bare re-assertion.

Who, then, is the genuinely “free thinker”? Certainly not one who is so bound by the traditional that whatever is, or appears to be, at variance with it is forthwith set aside by him as not deserving his serious consideration. Such an one hardly merits the name of “thinker” at all ; he is, rather, a prejudiced dogmatist, who at best is but the medium through which traditions are made effective in the life of society. Nor, on the other side, is the genuinely free thinker one who arrogates to himself the prerogative of speaking with authority, on whatever subject, without serious regard for what others before him have thought ; one who does not take the trouble, or deem it worth while, to *understand* before trying to think. Such an one, after his own fashion, is as prejudiced and as dogmatic as is the most hide-bound traditionalist, however complacently he may preen himself over his “originality” or parade his cherished opinions as if they were

eternal verities. The world, indeed, is full of such persons, and they are not infrequently found in the seats of the mighty ; but they are not those who exemplify that freedom of thought for which humanity has so long and so strenuously, even tragically, fought. The genuinely free thinker is, rather, one who is clearly aware that truth was not born with him and will not wither with the decay of his own peculiar opinions, but who is equally aware that what is commonly accepted may itself not be true and may consequently stand in need of rectification. He is the person who, before proceeding to the construction of his own point of view, is both willing and anxious to apprehend the points of view of others and seriously to investigate the grounds upon which they are erected. He is, in short, the person who is loyal to the traditional, in the broad sense of the term, but whose loyalty is seasoned with the saving salt of a circumspect scepticism. Or, more briefly still, he is the person who is intellectually honest.

The ideal society would at least be such as to make provision for this sort of person—that is, if by an ideal society is to be understood one which is stable in the midst of change. Towards such an ideal those who are interested in preserving genuine freedom of thought must strive. And in so doing, they must erect safeguards against the dogmatist, whether of the ultra-conservative or of the ultra-radical bent. They must remember, on the one hand, that the genuinely free thinker will on occasion necessarily find himself in more or less sharp conflict with traditional beliefs ; and they must insist that any society which by concerted action negates this freedom is thereby in danger of committing cultural suicide. But they must also remember, on the other hand, that there is a radical difference between freedom to think and license to indulge in the creation and propagation of purely personal prejudices under the guise of verities ; and they must insist that any society which by concerted action negates this difference is in danger either of disruption and anarchy or of

forceful regimentation from above. For such procedure the underlying principles are plain, and they are mainly two: (i) the persistence of the traditional over a period of time gives it a privileged position, a certain vested right to acceptance until advancing knowledge clearly shows that it stands in need either of revision or of rejection; (ii) the final court of appeal is insight into the structure of meaning-situations, against the properly tested demands of which no mere tradition can be permitted to stand.

§ 3. *Some concluding observations*

Man's struggle towards liberty has been a long and arduous one. From total submergence within the group the individual has come by slow and painful stages to the attainment of privileges and responsibilities in his own right. The history of the race is the story of this achievement, and one of the most thrilling chapters of the story is that which recounts the individual's attainment of freedom of thought—the emancipation of his intelligence from the over-bearing dominance of the traditional, the dawning and waxing of his creative powers.

The battle has been fought on widely diverse fronts, and the forces involved render the conflict an ineradicable characteristic of cultural evolution. The deaths of Socrates of Athens, Jesus of Nazareth, Giordano Bruno of Rome, Girolamo Savonarola of Florence, and hundreds of others whose intellectual integrity brought them at last to martyrdom bear tragic testimony both to its scope and to its perpetuity. Whoever ventures to set his own point of view in antagonism to the traditional, in whatever field, ventures greatly; and one or the other must go down in the struggle. But the struggle cannot be brought to an end; the very nature of the contending forces is such that they are inherently antagonistic, and the conflict is therefore an unending one since neither force can in the end be utterly suppressed. Never-

theless, the results achieved in respect of the individual are always precarious and in constant danger of being seriously impaired ; eternal vigilance is consequently demanded on the part of those who prize their hard-won freedom, and it is called for on all fronts.

In the past history of our own culture, the struggle has raged most fiercely perhaps in the field of religious beliefs. The typically religious attitude, accepting the traditional as somehow peculiarly sacred and therefore justly dominant within the religious aspect of the intellectual quest, is essentially conservative and alien to the attitude of the free thinker. So true is this, indeed, that free thinkers have not infrequently been identified with atheists and religious agnostics. It is therefore not surprising that the struggle for freedom has so generally involved religious prejudices as one of its main factors, as it undoubtedly has done in the history of Europe since the beginning of the Christian era. The typically religious attitude as thus conceived, however, is too narrow to include all of the historical features of religious consciousness itself. For every great religion has its own free thinkers, through whose untrammelled points of view religious dogmas have been made to pass, as through a crucible, and have in consequence been modified so as to meet the demands of changing experience ; these are the prophets of religion, as contrasted with its priests. And whoever recognizes this historical fact and appreciates its significance cannot longer assume the typically religious attitude, however orthodox he may still regard himself as being ; his orthodoxy will then have expanded so as to include within its scope the rôle of the prophet, and thus will have transcended the narrow bigotry of the priestly rôle. In other words, he will have made his religious "faith" more tolerant of reason. And there is apparently some justification for holding that this transformation has happened on a rather wide scale since the beginning of the present century.

At any rate, the battle-front which now most concerns

those who are interested in preserving the degree of freedom of thought already achieved is not that which touches the terrain of religious beliefs and practices, though that will always bear watching. The focus of the battle just now lies elsewhere. Since the catastrophic upheaval, commonly called the World War, civil society has undergone a metamorphosis. This is no place to inquire into the causes of that event or to enter upon an account of the change. It is sufficient here simply to note the outstanding result, namely, that freedom of thought is being seriously threatened by political happenings. Regimentation from above, whether after the fashion of the fascist or of the soviet scheme, is threatening to get into the saddle ; and it is everywhere accompanied by its aide-de-camp, namely, propaganda, which is perhaps the most dangerous, because the most insidious, enemy of intellectual freedom. The most banal of futilities is, of course, to berate facts and idly wish they were other than they are. But these facts are just now in the making, and it is fortunately not too late perhaps to shape them more nearly to the heart's desire. In any event, it behooves all who deem freedom in the intellectual adventure worthy of preservation to turn their earnest attention to the political front, where destiny is plainly on the march.

But whoever would venture forth to do battle in this cause, if he would escape the embarrassment of a quixotic exploit, should first of all acquaint himself with the principles involved and fight only with the weapons they supply to his hand. Rendering to tradition the homage that properly belongs to it, he must not apotheosize it ; or, loyally defending the importance of personal insight, he must avoid the fatal blunder (so common to ultra-radicals) of identifying such insight with purely personal prejudice. The battle is between points of view, each of which has its proper claim to his loyalty ; and his effective participation in the conflict demands on his part a nice adjustment between these loyalties. Here, at least, the battle is not to the strong nor the race to the swift.

PART II
SOME CATEGORIES

CHAPTER VII

MATTER

As a result of mankind's intellectual analysis of the environment, certain general conceptions gradually emerge. These general conceptions express in summary fashion the outcome of our judgmental activity in various directions, and may therefore be said to be indicative of broad features of the world as known; in other words, they are fundamental meanings. They are technically known as *categories*. In this Part of our study we are to discuss some of these categories, namely, *matter, space and time, evolution, mind, and society*. This list is not exhaustive, of course, but it includes the categories which are of most concern to us in this survey. So we shall limit our discussion to the list as given, and we begin with the category of matter.

§ 1. *The category of Matter*

Particular existents or physical objects come into being and pass away. They continuously change their form and structure. And when a particular object has sufficiently changed its form and structure, we say that it has ceased to exist. The chair that is burnt no longer exists as a chair; the stone ground to dust is no longer a stone; water evaporated is water no more. And if "all the choir of heaven and furniture of the earth . . . , all those bodies that compose the mighty frame of the world"¹ could be made to undergo

¹ The phrase is taken from Bishop Berkeley's famous *Principles of Human Knowledge*, First Part, section 6. George Berkeley (1685-1753) was an Irish theologian and philosopher, who developed the views of Locke in the direction of a type of idealistic philosophy which has been the subject of

such radical changes as would modify all of their usual characteristics, they, too, would cease to exist. But in such processes of change and transformation we would not say that the "matter" of the particular objects has ceased to exist. The "matter" of the chair is not destroyed when the chair is burnt, so at least we suppose. Nor do we admit the destruction of the "matter" of stone or water in those transformations which result in the disappearance of that particular set of qualities, such as color, solidity, shape, specific gravity, and the like, which we ordinarily designate by the name of *stone* or *water*. And if the entire "choir of heaven and furniture of the earth" were miraculously to change all of their several ordinary qualities and so disappear as particular objects, their "matter" still, we assume, would remain. ¶ Particular objects arise and perish, come into being and pass out of being; but "matter" is not thus transient, it is permanent at least in the sense that there is upon it no shadow of change which can cause it to depart radically from its own nature and become something else. ¶

¶ Matter, thus, is a fundamental feature of the physical order. It is conceived as a permanent something, which is somehow universal in character and which, though attached to particular physical objects in some manner doubtless, remains untouched in its essential nature by the fluctuations and changes to which they are subject. It is, in short, a category of the physical order, pervasive and perduring. ¶

To discover the nature of this pervasive "something" has been one chief goal of man's intellectual search from the beginning of scientific speculation down to our own day. A general survey of some of the main views on the problem

much discussion since his day and which, it has been maintained (see R. B. Perry, *Present Philosophical Tendencies*, Chapter VII), states the essential principle of all later forms of idealism. In the writer's opinion, this view is mistaken; but there can be no doubt that the good Bishop did clearly formulate one type of idealistic argument—the type, namely, which tries to build an idealistic *Weltanschauung* on the fact of knowledge. The essence of Berkeley's argument is contained in the first thirty-three sections of the *Principles* (see *Berkeley: Selections*, edited by M. W. Calkins, pp. 124-141).

of matter held during the course of European thought will serve to put us in touch with one very interesting side of the history of philosophical and scientific reflection.

§ 2. *Views of the Greeks*

From the standpoint of the history of European civilization the earlier scientific views of the nature of matter appear in Greece during the late sixth and early fifth centuries B.C. At this time there arose a group of thinkers, called by Aristotle "physicists," who discarded the mythological views of their generation and substituted instead views which they themselves arrived at by reflection upon the physical environment. They quit trying to explain natural phenomena in terms of "spirits" or "wills," gods and goddesses, which were supposed to exist in the physical order and control its events, and they undertook to explain these phenomena in terms of the phenomena themselves. They were all of the opinion that there is some sort of ultimate stuff of which the many different objects in the physical environment are composed and by reference to which the events and changes in progress there could be accounted for. But, as was inevitable, they differed widely as to what this stuff is. Their views, however, are not wholly unrelated to each other and, as we shall see in our study of them, the conclusion at which they finally arrived is of considerable significance from the standpoint of later scientific developments.

THE MILESIAN GROUP. Three of the earliest of these thinkers—Thales (one of the reputed Wise Men of Greece), Anaximandēr, and Anaximenes—are usually grouped together in the histories of philosophy as the Milesian school. Of course, they did not belong to a school in the modern sense of the term. They are referred to as members of the Milesian school because they were contemporaries interested in the same problem and all were citizens of the seaport town of Miletus. As might be expected, their answers to

the problem of the nature of matter were vague and largely unsupported guesses. Thales, the earliest of the three, held that the ultimate stuff of the world is water—a thesis suggested to him doubtless by his observations of the important rôle water plays in the processes of nature. Anaximander questioned the validity of the doctrine of Thales, and suggested in the place of it that “the boundless” must be the ultimate source of all things. Anaximenes, in his turn, urged that “air” or the atmosphere is the basal substance. In spite of the obvious inadequacy of these answers, there is a certain logical development in theory here which is interesting and suggestive. Water ^{is} apparently is only a part of the physical environment, and as such cannot be the “ultimate” substance of all things; the whole of things cannot be explained in terms of one sort of thing. The “ultimate” must be inexhaustible and infinite. So at least Anaximander argued, and he therefore undertakes to substitute for the finite and limited principle of Thales’s theory an infinite and inexhaustible principle. But this principle he did not succeed in describing very clearly; to call it “the boundless” is to leave it very indefinite. The question naturally arises, The boundless what? And this question Anaximenes thinks he answers by identifying the ultimate stuff with the “air” or atmosphere that encompasses all; this was the one apparently boundless and infinite thing open to his observation.

EMPEDOCLES. The one assumption common to the Milesian trio of thinkers is that the ultimate stuff of the world, whatever it be, is one sort of stuff. This assumption, however, Empedocles immediately calls in question. He was convinced that it is impossible to explain all objects in terms of one ultimate substance; there are so many different kinds of objects in the world we must look for more than one kind of stuff as the source of them. Empedocles discovers four basal elements, namely, earth, air, fire, and water. Everything in the world, he holds, is simply a compound of these elements and all change is the coming together or separation

of them in various degrees. "There is no coming into being of aught that perishes, nor any end for it in baneful death, but only mingling, and separation of what has been mingled." "When the elements have been mingled in the fashion of a man . . . or in the fashion of the race of wild beasts or plants or birds, then men say that these come into being; and when they are separated, they call that, as is the custom, woeful death."¹ For Empedocles, then, matter is four-fold: earth, air, fire, water. Particular objects are compounds, and may always be analyzed into these four elements; growth and decay are the commingling and separation of the elements.²

ANAXAGORAS. Anaxagoras agrees with Empedocles, against the Milesian school, that the ultimate stuff of the world must be of more than one kind. But he is convinced that Empedocles does not go far enough in the direction in which he starts. In his opinion it is as impossible to explain all the different qualities of objects in terms of the four elements of Empedocles as it is to explain them in terms of any one of the principles advocated by the Milesian group. He is convinced that a quality cannot be explained by reference to something different from itself; and therefore, he argues, there must be as many elements or basal kinds of matter as there are distinct qualities in the physical environment. For every quality there is a corresponding kind of element: there are blue elements and red elements and all sorts of colored elements, there are hot elements and cold ele-

¹ Fragments from Empedocles, and from all these early Greek thinkers, are translated in C. M. Bakewell, *Sourcebook in Ancient Philosophy*; in J. Burnet, *Early Greek Philosophy*; and in M. C. Nahm, *Selections from Early Greek Philosophy*.

² This tradition of the four elements was for centuries fixed in European civilization. It was current in Shakespeare's day, and the poet alluded to it frequently. The best known allusion perhaps is found in Antony's statement about Brutus in the last scene of the last Act of *Julius Cæsar*:

His life was gentle; and the elements
So mix'd in him, that Nature might stand up
And say to all the world, *This was a man!*

ments, moist elements and dry elements, and so on for each and every quality that can be observed to exist. For Anaxagoras, then, matter is a name for an indefinite number of elements of different kinds, the number of kinds of elements being the same as the number of qualities in the world. This conception is sometimes called *qualitative atomism*.

DEMOCRITUS. Democritus was in his old age a contemporary of Plato and Aristotle and is worthy to be ranked with them in intellectual achievement. He agrees with Anaxagoras that the number of elements is indefinite, and that that number must be very great. But he will not admit that it is necessary to suppose that these elements differ in kind. On the contrary, he urges that the only differences among them which we are compelled to admit are purely quantitative differences. Some of them are smooth, round, and light, while others are rough, angular, and heavy; all are in motion through the "void" (empty space), but some are more mobile than others and travel with a greater velocity. For Democritus, thus, matter is an indefinite number of elements—called by him "atoms"—different only in size, shape, and velocity of motion. This view may be called *quantitative atomism* in distinction from the *qualitative atomism* of Anaxagoras.

The chief significance of the views of these early Greek thinkers is historical: they mark a definite break with the pre-scientific view of the physical order and inaugurate the more rational method of seeking a definite view of matter through analysis of natural phenomena. But the results of their speculations are not wholly without value. Two significant points emerge from them. The first is the conclusion that matter cannot be identified with any particular sensible quality. The second is the conclusion that matter is in some sense granular in structure and that qualities can be quantitatively explained. In short, there emerges from their speculations the two-fold conviction that matter is really a group of elements, and that these elements are to

be described in quantitative rather than in qualitative terms. The significance of this conviction lies in the fact that, in general outline at least, it points the direction in which the results of the fuller and more precise investigations of later science have led. Of course, the results actually achieved by these pioneers in science have suffered the fate that was inevitable—they have become antiquated. It should never be forgotten, however, that they were brilliant achievements as first stages in Europe's scientific development.

Plato and his famous pupil, Aristotle, were both much interested in the general problem of the physical environment. And the views which they suggest have been exceedingly influential in the later development of thought even down to the modern era.

PLATO. According to Plato, the objects that constitute the content of our physical environment are particular or individual copies of general types or forms. Thus, for instance, a given stone is a particular example or copy of a certain general class or type of physical objects, a given triangle is a special instance of a certain sort of geometrical figure, and so forth. Every object is a spatial expression of a general type. Now the type which the particular object copies Plato calls the "Idea" of that object; the special characteristics of the given object arise from the material out of which the object is generated. Thus, any given diamond is a particular copy of that type of precious stones; the unique characteristics of the diamond in question, its special brilliancy, shape, flaws, etc., arise from the stuff or matter out of which it has sprung. So in Plato's view objects are copies of general archetypes or forms; the forms copied he calls "Ideas," while the stuff out of which the copies are made is "matter." What more precisely this "matter" is he never succeeds in telling us; it is that something, not further describable, out of which particular objects in the physical environment are fashioned in the likeness of those gen-

eral "Ideas" of which they are copies. Any given physical object is only the spatialization of its "Idea," that is, the manifestation of its "Idea" in matter; the perceptual horse is a copy of the "Idea" *horse* made in matter, the triangle drawn on the blackboard is a copy in space of the "Idea" *triangle*, and so on for all other physical objects. For Plato, then, matter is the stuff, indefinable because apparently lacking all qualities, out of which copies of general types are made in the process of the world's development; it is formlessness, chaos.¹

ARISTOTLE. Aristotle's answer to the problem of matter can be understood only in connection with his doctrine of "form" and "matter." In this doctrine his fundamental thesis is that every particular object in the world is in process of change and that its change is determined by something inherent within it as a sort of potentiality or capacity. Thus, the acorn changes into the oak tree. The nature of the acorn is to change, and to change only into an oak tree; there is in the acorn the potentiality of the oak tree, and no other sort of tree will spring out of it. The acorn changes into something definite, which "something" is involved within it and determines its development. Now, Aristotle contends, every other particular object is in this respect like the acorn; it is, on the one hand, something which changes and, on the other, it is something into which change inevitably develops. Viewed as something which changes, the object is called by Aristotle "matter"; viewed as controlled in its changes by an inherent capacity for development along a predetermined line, it is what he calls "form." The acorn is "matter" in

¹ It is difficult to state this Platonic doctrine in brief compass so as to make it intelligible to the beginner. The reader who is not familiar with the doctrine is advised to acquaint himself with the accounts of it given in the general histories of philosophy. He should also read the relevant parts of Plato's *Republic*, especially Books VI-VII. It may help to remember that Plato's "Ideas" are somewhat analogous to what modern science means by "laws," "species," etc., and that his "matter" is not unlike the "earth" as described in the opening verse of the book of *Genesis*: "And the earth was without form and void."

the sense that it has within itself the capacity to develop or change into an oak tree ; its "form" is the inherent capacity which predetermines its development into an oak tree, and not into a peach tree or any other sort of tree. Thus in Aristotle's view matter is synonymous with a capacity or potentiality to change. The "matter" of the stone is the stone's capacity to change ; the "matter" of the child is the child's capacity to grow ; the "matter" of X is X's potentiality, whatever X may be.

§ 3. *Some modern views*

In modern philosophical thought four views of matter have been defended which are of importance for this general survey. These are the views of Descartes (1596-1650), Locke (1632-1704), Leibnitz (1646-1716), and Berkeley (1685-1753).

DESCARTES. In his consideration of the problem of matter Descartes finally came to the conclusion that there is one characteristic of matter, and only one, which we can know with certainty. That characteristic is extension. We know beyond doubt that the world of material objects is an extended world. "We must unhesitatingly conclude that there exists a certain object extended in length, breadth, and thickness, and possessing all those properties which we clearly apprehend to belong to what is extended. And this extended substance is what we call body or matter."¹ Matter and extension, then, are synonymous terms ; matter is "extended substance." This is all we can certainly say about it.

LOCKE. According to Locke matter is to us unknown and unknowable. We therefore cannot say anything about it, except that we suppose it exists. What we actually perceive in our physical environment are objects having various sorts of qualities. And matter is "nothing but the supposed, but

¹ *Principles of Material Things*, section 1.

unknown, support of those qualities we find existing. . . . We suppose matter exists because we cannot imagine how qualities could exist without something to attach themselves to. An apple, for example, is experienced as a group of qualities such as color, shape, taste, odor, and the like; there must be something for the qualities to *belong to*; that something is the matter of the apple. But we cannot know what that something is, since it lies behind the qualities which alone we can experience. So matter, in Locke's view, turns out to be an unknown X which we assume exists in particular things or objects; and we assume it exists because we cannot imagine the qualities that we directly observe as existing without something in which to inhere. But we cannot say anything at all about its nature.

BERKELEY. Berkeley takes issue with Locke by urging that, if matter is only an unknown X, then there is no justification for supposing it to exist at all. To make such an assumption is purely arbitrary and unscientific. It is simpler, Berkeley goes on to argue, to say that matter is identical with those qualities that we directly observe. Matter is nothing but physical objects, and physical objects are precisely the qualities which we observe in them. "Thus, for example, a certain colour, taste, smell, figure, and consistence having been observed to go together, are accounted one distinct thing, signified by the name *apple*; other collections of ideas constitute a stone, a tree, a book, and the like sensible things. . . ." ² And this is all there is to these sensible objects; they are simply collections of those qualities observed by us. There is no mysterious and unknown matter lying underneath these qualities and "supporting" them; such a supposition is, Berkeley insists, both absurd and unnecessary. Matter is the name which we give to the totality of objects in the physical environment, and these ob-

¹ *Essay Concerning Human Understanding*, Book II, Chapter XXIII, section 2.

² *Principles of Human Knowledge*, section 1.

jects are nothing but collections of various sorts of qualities ; matter, therefore, is the qualities of objects.// Such is Berkeley's view on the problem of matter.¹

LEIBNITZ. Leibnitz agrees with the ancient Greek thinker, Democritus, that there are many elements in the physical world all of which are alike in kind. Our analysis of objects, he insists, cannot stop short of such elements. But he is not willing to admit that these elements have any spatial characteristics. They cannot, like the "atoms" of Democritus or the "substance" of Descartes, be extended, for if they were extended they would be divisible by analysis and therefore not ultimate. The only unanalyzable element which we can conceive is a non-extended center of force or energy or activity. Such a center of force is the element of matter, and this Leibnitz calls a "monad." Since there are many objects in the physical environment there must be many monads ; one alone could not be the adequate basis of the multiplicity of things. Matter, thus, for Leibnitz is an indefinite number of centers of activity or energy (monads) organized in such manifold ways as to constitute those various groups of qualities which we experience as physical objects.²

¹ Berkeley draws a further conclusion from his analysis which has given rise to much controversy. And that is that objects exist only in relation to a mind which perceives them. Objects are nothing but qualities ; qualities are nothing but ideas which we experience, such as colors, temperatures, and the like ; objects, therefore, are "collections of ideas." But ideas exist only in being perceived or experienced by some mind ; objects, therefore, exist only in being perceived or experienced by some mind. "Some truths there are so near and obvious to the mind that a man need only open his eyes to them. Such I take this important one to be, viz., that all the choir of heaven and furniture of the earth, in a word, all those bodies which compose the mighty frame of the world, have not any subsistence without a mind, that their *being is to be perceived or known*" (*Principles of Human Knowledge*, section 6). And this truth is "obvious" to Berkeley because for him objects are nothing but "collections of ideas."

² The activity of these "monads" Leibnitz conceives as mental, basing his inference on the thesis that the only activity or energy of which we have definite knowledge is that which manifests itself in mental work. There is for him, therefore, no sharp distinction between living and non-living matter ; all matter is of the same kind of energy. His view has sometimes been

The different conceptions of matter thus far described were not supported by experimental evidence. They were arrived at as a result of the attempt to carry analysis to its uttermost limits, to think matter as an aspect of a consistent view of the world. But since the beginning of the development of modern science the problem of matter has become more and more pressing for the scientist, and experimental investigations during the last century or so have thrown much light upon it. Two main theories have resulted from these investigations. These are: the earlier atomic theory, and the later electronic theory.

THE ATOMIC THEORY. The atomic theory of modern science is that matter is reducible to certain elements, called atoms. A series of experiments begun about the middle of the eighteenth century showed the possibility that material objects can be analyzed into a number of simple particles, that matter is granular as Democritus and Leibnitz had inferred. John Dalton¹ was one of the first among the scientists to make fairly definite suggestions concerning the atomic theory and the measurable weights of some of the atoms; thus the beginnings of the theory are linked with his name. Since Dalton's day chemical analysis has gone far along the path he pointed out and has added to the list of atoms until at present the number of atoms known and measured runs into the eighties. The names of these atoms and their fundamental characteristics the student may easily find in any up-to-date textbook in chemistry.

THE ELECTRONIC THEORY. One assumption concerning the atoms made by the earlier scientists has apparently turned out to be erroneous. (And that is the assumption that each atom is simple in structure and impenetrable by further analysis.) Recent investigations, particularly in physics, called a *spiritual* atomism in contradistinction to the *physical* atomism of Democritus.

¹ Dalton (1766-1844) is famous for his pioneer work in modern physical science. He is also noteworthy as the discoverer of color-blindness.

ics, have led to the inference that each atom is within itself a complex universe of electrical energy. It is now said to be composed of a "nucleus," or positive electricity, and one or more "electrons," or negative electricity, revolving about the nucleus at a very rapid rate of motion. The differences among the atoms bear a definite and measurable ratio to the differences in number and configurations of the electrons composing them. Thus hydrogen is the lightest known atom and it has only one electron revolving about the nucleus; uranium, on the other hand, is the heaviest atom known and it has ninety-two revolving electrons. The other atoms are composed of electrons varying in number between these extremes. So further analysis has shown the atom to be composite in structure and active rather than passive. It is a compound of rapidly revolving electrons which vary in number from kind to kind of atom. It is electrical energy.¹

§ 4. *Matter and its qualities*

It is no part of our present purpose to inquire which, if any, of the preceding views of matter is to be accepted. It is tolerably clear that the earlier ones are now out-moded, though some aspects of the conceptions of Plato and Aristotle retain significance. It is also clear that the modern scientific conception is, in its details at any rate, most solidly supported, though the conception is still in process of development and will doubtless continue so. But into these matters we are not now interested to go. We are, rather, concerned with another and more general problem.

Whichever view of the category of matter we take, it is clear that matter is different from the special features (commonly called "qualities") of particular physical objects as

¹ The details of this conception are, of course, being rapidly modified by the results of current scientific investigation. For the details the reader must consult the writings of the specialists. A convenient starting-point may be found in W. C. D. Dampier-Whetham, *A History of Science*, pp. 404 ff.

experienced by us in sense-perception. As conceived by some of the early Greeks, indeed, the category approaches identity with qualities. But even here there is a difference: the "water" which Thales, for example, identifies with the stuff of things is not precisely the qualities of water as an object of eye or palate; nor are the "seeds" of Anaxagoras identical with the sense-qualities ordinarily denoted by the terms red, green, moist, dry, and the like. When we come to the "atoms" of Democritus, we find matter conceived as something quite different from anything that ever appears in sense-experience; and the same is even more obviously the case in the speculations of Plato, Aristotle, and the moderns. The sundering is carried so far in recent scientific theory that there even seems to be no element of similarity left between the common-sense object and the scientific object, between the table which we buy and sell, for example, and the multitude of dancing electrical particles into which the table is resolved by scientific analysis.¹

Such an outcome, however, gives rise to a logical difficulty. And a little analysis discloses that the difficulty presents two sides. On one side, the difficulty arises in connection with the relation between matter and its qualities; on the other side, it concerns the reality of each. Phrased in the form of questions, this two-fold difficulty may be expressed as follows: Since both matter and qualities belong to the objects of sense-perception, they must somehow be related to each other; how is this relation to be judged? and, Since they are not identical but are quite distinct, can they both be said to be real; or must one be called real and the other apparent only? Let us consider these questions separately, beginning with the first; the answer to this question, it will be found, predetermines the answer to the second.

(a) It should be clear, in the first place, that the way out of our first difficulty suggested by Locke is, to say the least,

¹ See A. S. Eddington's description of the two tables in the Introduction to his volume, *The Nature of the Physical World*.

quite unsatisfactory. That way, it will be recalled, is the way of simply confessing ignorance in respect of the point at issue. To say, as Locke does, that matter is "nothing but the supposed, but unknown, support of those qualities we find existing" is, of course, equivalent to saying that the problem is by us insoluble; we do not, and apparently cannot, know what relation obtains between matter and its qualities. It may, indeed, be the case that this is all we can say; and wherever the confession of ignorance is demanded, it is an important part of philosophical wisdom to confess it. In this instance, however, it seems uncalled for; surely, if matter and qualities are characteristics of observable physical objects, judgment in respect of those objects ought to be able to disclose some characteristics of the relation between the two. At any rate, it is not amiss to inquire whether this is possible. Simply to assert that it is impossible is in itself no proof that it is so, unless such an assertion is based upon judgmental analysis which supports it; and in this event, it would appear, something must already have been learned about the relation in question.

An effort has been made to solve the problem in terms of a distinction between *primary* and *secondary* qualities.¹ We shall first try to understand the distinction, and then we shall note its application to the problem before us.

By primary qualities are meant those qualities of the physical environment which we usually call spatial, such as figure, motion, rest, extension, solidity, and number.⁽²⁾ By secondary qualities are meant all qualities that are not primary, such as colors and brightnesses, noises and tones, odors, temperatures, and the like. In so far as an object has a certain size,

¹ This distinction was first drawn in the history of thought by Democritus; in modern thought it was emphasized by Descartes and Locke. Berkeley's criticism of it is classic, as is his criticism of the view above attributed to Locke that matter is sharply sundered from its qualities. See his *Principles of Human Knowledge*, sections 9-21 (B. Rand, *Modern Classical Philosophers*, pp. 266-272; *Berkeley: Selections*, edited by M. W. Calkins, pp. 128-135).

shape, solidity, and is in motion or at rest, it presents primary qualities; in so far as it is colored and is hot or cold, odoriferous, etc., it is characterized by secondary qualities. Now, so the argument proceeds, ⁽¹⁾primary qualities are entirely independent of the mind that perceives them, since they are always the same regardless of the perceiving mind. The secondary qualities, however, ⁽²⁾vary with the perceiving subject and are therefore dependent upon the perceiver in a way in which the primary qualities are not. Thus, the figure or shape of the rainbow is the same whether or not it is perceived by any mind, and it is the same for all minds that may perceive it; but the colors of the rainbow exist only in so far as they are perceived by some mind, and they may be different for various experiencing subjects—a color-blind individual, for example, would not experience all the colors observed by a normal individual. ¶ And from this the conclusion is drawn that primary qualities exist in things, while secondary qualities exist only in perceiving or experiencing minds. ¶ If there were no perceiving minds in the universe objects would still have shapes, solidity, and extension, and be either at rest or in motion; but with the disappearance of all perceiving minds colors and brightnesses, temperatures, odors, and all the other secondary qualities would vanish utterly from the world. ¶ In short, primary qualities are objective, existing in things, while secondary qualities are subjective, existing only in minds that experience them. ¶

The application of this distinction to the problem of matter and its qualities is as follows. Matter, it is argued, is identical with its primary qualities, and these therefore are real. Secondary qualities, on the other hand, are not attributes of matter but merely ways in which minds are affected by matter and they, consequently, are appearances only and not real. Such is the solution of the problem offered by those who accept the distinction between primary and secondary qualities.

But this distinction is not without its difficulties. There

are two main objections to it. In the first place, primary qualities no more obviously belong to things than do secondary qualities. Colors, temperatures, sounds, and the other secondary qualities *seem* to belong to things as truly as do solidity, figure, motion, and the other primary or spatial qualities. So it is not obvious that primary qualities are objective (in things) and secondary qualities subjective (in the mind). In the second place, no argument can be advanced for the independent existence of primary qualities which does not equally well apply to secondary qualities. Conversely stated, every reason which can be advanced for the subjectivity of secondary qualities holds equally well in support of the subjectivity of primary qualities. If primary qualities *seem* to exist in the physical environment and independently of the perceiving mind, so do the secondary qualities; if the secondary qualities vary with, and are therefore in some sense dependent on, the sense organs of perceiving subjects, the same is equally true of the primary qualities. Colors, for example, *seem* to belong to physical objects as certainly as does solidity or motion; and, on the other hand, the size of a physical object or its motion varies with the eye that perceives it—the angle from which it is perceived, the distance at which it is observed, and so forth—as surely as does its brightness or its color. To separate sharply between primary and secondary qualities is, therefore, not justifiable.

But, even if the separation is allowed, a difficulty in identifying matter with primary qualities still remains. For, after all, the primary qualities are evanescent characteristics of physical objects in the sense that they may apparently be utterly destroyed by changes in those objects. The chair that is burnt certainly loses its shape and size and solidity; it loses, in short, all of its primary qualities. Unless, therefore, we are willing to say that it thus loses its "matter," we can hardly say that this is at one with its primary qualities. So, even if we permit the distinction between primary

and secondary qualities to stand, we cannot identify matter and primary qualities without falling into the doubtful position of being forced to admit that matter has lost what we had originally thought to be its basal nature and may be supposed to come into being and pass away. Either this, or we must go contrary to what seems to be the verdict both of common-sense and of scientific experience and deny that the primary qualities of objects change.

Perhaps the key to the correct solution of the problem may be found in the consideration that what we call "matter" and what we call "qualities" are alike products of judgmental interpretation of those meaning-situations which in the preceding analysis of the objects of judging we named *existential*. In such situations, something is *given* to us in experience; we then proceed to judge, that is, interpret, what is thus given. This interpretation gives rise both to "qualities" and to "matter" as characteristics of the situation interpreted. Qualities and matter, therefore, are merely different aspects of one and the same meaning-situation: qualities are those aspects which arise through interpretation or judging with reference to the situation taken within certain limits, while matter is that aspect which arises through judging the situation taken in its farther reaches. Thus, the color of an object is what is judged about it as it is directly before us at the instant; while its matter is what is judged about it taken in its broader relations to other similarly structured objects. In other words, its qualities are the judgmental features of the object when viewed with reference to its superficial appearance; but its matter is its judgmental feature when viewed with reference to its innermost structure.

In the light of such a consideration, the answer to our problem would be somewhat as follows. The relation between matter and qualities is the relation between two different, but coherent, interpretations of essentially one and the same meaning-situation. The one interpretation is given

from one point of view, and the other from another point of view ; the one is more general, and the other more special ; the one is a category, and the other is an ordinary concept. The two are therefore related as different characteristics of one entity, and not as separate entities ; they are aspects of one system, and not two distinct systems.

(b) If this suggested solution of our first difficulty is accepted in principle, then the solution of the second follows at once. We must say that matter and qualities are both real. As we have argued in the last section of Chapter IV above, the only means by which we can determine what is real is that interpreting activity of the mind which we have called judging ; what judgment forces us to hold as real, we must assume, is *ipso facto* real, or, as we have expressed it above, the object of a veridical judgment is a real object. If, then, the judgment that what I call a typewriter-desk has such and such qualities is a veridical judgment, that is, if its assertion and acceptance are more coherent with other relevant judgments than would be its denial and rejection, the qualities thus attributed to the typewriter-desk must be said to be real qualities. Likewise, if the judgment that the structure of the typewriter-desk analyzes into electrical particles with such and such characteristics (or into whatever else science may later find to be preferable), then this structure of the typewriter-desk must be held to be real, and for the same reason. Or, stating the point generally: in so far as "matter" and "qualities" are demanded by objects disclosed by veridical judgments, they are, on that account and precisely as such, both real.

Of course, as we have already noted, some judgments at one time taken to be veridical later turn out to be false. It may therefore very well be the case that what, under certain circumstances, is identified with matter or with qualities (as, for example, the "air" of Anaximenes as identical with matter, or the "blue" of the distant mountain as identical with a quality of the mountain) is not really so ; nor is it always

possible for us to determine whether what is affirmed in judging is really so. But this does not affect the principle that what is real is determinable only through the instrumentality of judging. Judgments which we are compelled to entertain we must suppose are indicative of reality. If some of these judgments turn out to be false and their objects consequently not real objects, this is only an indication of what we all know, namely, that the human mind is not infallible.

The answer here given to our second question has been avowedly based on the view of judgment presented in the preceding Part of this study. But, as we there noted, there is another and contrasting view of judgment, commonly referred to as the instrumental theory, which leads to a quite different conclusion with reference to the question now before us. According to this view, our question does not formulate a genuine problem, but only a pseudo-problem which arises out of nothing more significant than a mistake in analysis of the nature of judging, and should therefore have never been asked. We must, before passing on, briefly inquire into the grounds of this disconcerting rejoinder.

The instrumental theory holds that the function of any and every judgment, whether in the field of common sense or in that of science, is not to disclose the structure of meaning-situations, as we have maintained is the case, but to forecast consequences in respect of practical situations. In other words, it is the function of an idea to aid conduct, not to discover what is real. Dewey, who certainly can speak with authority in the matter, states the theory as follows: "The business of thought is not to conform to or reproduce the characters already possessed by objects but to judge them as potentialities of what they become through an indicated operation. . . . To judge that this object is sweet, that is, to refer the idea or meaning 'sweet' to it without actually experiencing sweetness, is to predict that when it is tasted—that is, subjected to a specified operation—a certain

consequence will ensue. Similarly, to think of the world in terms of mathematical formulæ of space, time and motion is not to have a picture of the independent and fixed essence of the universe. It is to describe experienceable objects as material upon which certain operations are performed."¹

According to this theory, then, all ideas (judgmental interpretations) are useful only; they enable us to enlarge our scope of conduct by predicting the outcome of certain operations, but they do not even pretend to tell us anything about what Spinoza called "the essences of things." The common-sense table, for example, is nothing more than the "constant object" which is derived through generalization from direct contacts with experienceable tables and the function of which is to enable us to make predictions about such experienceable tables without directly experiencing them. And the same holds in principle of that "swarm of molecules in motions of specified velocities and accelerations" which is the table of scientific generalization: it is simply an abstraction arising within our direct experience of sundry tables and, like the table of common sense, its function is to enable us to make predictions about operations though on a broader scale and in respect of a less limited environment than is the case with the table of common sense.² In general: every act of judging makes use of generalization of

¹ *The Quest for Certainty*, p. 137. Note the use of the word "meaning" in this quotation and its difference from the use which has been made of it above in Part I of this study. The point of the quotation is emphasized constantly throughout the book: knowing is not a quest for certainty, but a search for security.

² "'Table' signifies a definite but restricted set of uses; stated in the physical terms of science it is thought of in a wider environment and free from any specified set of uses; out of relation to any particular individualized experience" (*The Quest for Certainty*, p. 238). Compare: "As long, for example, as water is taken to be just the thing which we directly experience it to be, we can put it to a few direct uses, such as drinking, washing, etc. . . . When, however, water is treated not as the glistening, rippling object with the variety of qualities that delight the eye, ear, and palate, but as something symbolized by H_2O , something from which these qualities are completely absent, it becomes amenable to all sorts of other modes of control and adapted to other uses" (*Ibid.*, p. 105).

direct experiences to the end of conduct ; such generalization is useful, on a large or a more restricted scale as the case may be, and its utility is its only excuse for being. The function of any idea, then, is to serve as a guide to conduct (in the broad sense of the term, of course, in which we may speak of the "conduct" of the scientist performing an experiment), not to disclose the nature of what is real. To overlook this is to overlook the most important characteristic of the activity of judging, and so to fall into a most serious blunder of analysis.¹

If all of this be true, it follows, even as a corollary, that the second of our two questions about matter and its qualities does not formulate a genuine problem. To ask whether matter is real or not is to ask an idle question, whatever may in the end be said about a similar question concerning the qualities of matter. For matter certainly is a scientific generalization, like the "swarm of molecules" which is the table or like the H_2O , which is the water ; and, like them, it is "an instrument made for a purpose" which has no claims "for position in real being." To ask whether it has "real being" is, therefore, a spurious question which can seriously be entertained only by one who mistakenly supposes that judgmental interpretation is in some sense a revelation of the essential structure of that which is interpreted. In other words, the question is based upon nothing more solid than a mistaken view of the nature of the activity of judging and the "ideas" which arise through it.

Such, in broad statement, is the disposition of our question which the instrumental theory of judgment would make. What is to be said of it? An answer to this question clearly

¹ "When this standardized constant," that is, any idea like the "table" of common sense or of science, "is treated as the reality of nature, an instrument made for a purpose is hypostatized into a substance complete and self-sufficient in isolation" (*The Quest for Certainty*, p. 239). Compare: "Water as an object of science, as H_2O with all the other scientific propositions which can be made about it, is not a rival for position in real being with the water we see and use" (*Ibid.*, p. 106).

calls for a detailed analysis of the instrumental theory itself. Once more, however, such an analysis must be left on one side as not possible in this survey. I can only reiterate my conviction that the analysis given in Part I above is in principle sound and is sufficiently indicative that the instrumental theory is, on its side, mistaken in the tenet here under consideration; and I may again direct the reader's attention to some critical remarks I have elsewhere made about the theory.¹ I have felt under compulsion to refer to the theory in the present context, because of its bearing on the problem here under discussion.

Of course, the reader will not overlook the intrinsic importance of the theory. Nor will he fail to observe the wider ramifications of the controversy between it and the theory defended in the present study. For, after all, the controversy concerns the whole nature of the activity of judging, particularly with reference to the status of those interpretations commonly called scientific generalizations of which the concept of matter is but a special instance.

¹ In the article, already referred to in Chapter V, Section 5, above, "On the Second Copernican Revolution in Philosophy," *The Philosophical Review*, Vol. XLI, pp. 107-129.

CHAPTER VIII

SPACE AND TIME

Philosophers who have undertaken to account for human knowledge by seeking its ground in direct experience, that is, philosophers who are commonly called empiricists, have had their greatest measure of success perhaps in connection with their account of the qualities of objects, such as colors or temperatures or odors. Knowledge of such qualities does seem, in some manner, to depend on direct experience and to be derived from it. But objects within the physical order not only have qualities; they also stand in certain relations to each other. The empirical philosophers find these characteristics of physical objects less amenable to their method of explanation than are qualities; for relations are not so directly presented in experience as qualities appear to be, and are therefore not so readily explainable by the empirical method.

Among relations, those which we ordinarily refer to as spatial and temporal are perhaps most common; certainly, they are quite ubiquitous. And they are peculiarly difficult to analyze. Their puzzling features have long been of concern to philosophers, and in recent years they have become specially important for physical scientists. In the present chapter, we are to inquire briefly into the categories used to denote these relations, namely, space and time.

§ 1. *The categories of Space and Time*

(a) Particular objects in our physical environment, as is readily noted, bear to each other certain relations which we designate by "above" or "below," "outside of" or "inside

of," "nearness" or "remoteness," "larger" or "smaller," and the like. Such relations we call spatial relations. Space, then, may be roughly defined as the apparent relations of position, size, and shape among physical objects. Some further analysis of the main features of space may help us to get a bit clearer notion of its nature.

In the first place, we must note a distinction sometimes drawn between what we may call two types of space. The first is perceptual space, by which is meant those spatial relations with which we are concerned in the uncritical judgments of sense-experience. The distances between objects, the relative sizes of objects, the directions of objects from given points of reference, the interiority or exteriority of objects in respect of each other—these as they present themselves to our sense-awareness constitute the data of our perceptual judgments of space. The second type is conceptual space which is in important respects different from perceptual space. Here we think of the above relations as in a sense idealized, conceived, that is, without reference to particular objects. The data of our conceptual judgments of space are not specific relations of size and position which physical objects bear to each other in direct experience; they are the general concepts of points and lines, surfaces and solids—in short, such spatial relations as the science of geometry studies. To state the two types of space summarily, then: perceptual space is the space of direct awareness of material objects as having positions and masses relative to each other; conceptual space, on the other hand, is the more abstract or generalized space of the sciences, particularly geometry and physics.

At times we speak of *space*, as if there were only one; at other times we speak of *spaces*, as though there were many. "The spaces of the world," "The depths of space"—these are common expressions. The apparent inconsistency of speech here exemplified arises from the two-fold nature of space outlined in the preceding paragraph. When we speak

of *spaces* we are thinking of the perceptual type; *space*, on the other hand, usually means the conceptual type. The spaces of perceptual judgment are relations among the multitudinous objects of the physical environment—their varying distances, sizes, and positions. The space of conception is “pure,” more or less independent of material objects, and so is readily thought of as one.

Whether perceptual or conceptual, space is commonly regarded as having three dimensions. In reference to perceptual spaces, these dimensions are length, breadth, and depth or thickness; the dimensions of conceptual space are essentially the same in principle but are defined more accurately as the line, the plane, and the solid. With all of these the reader is, of course, familiar.

(b) The objects that make up the material order of the world bear to each other another sort of relations besides the spatial. To this other sort of relations we give the name of time. These relations obtain among objects as changing; examples of such relations are precedence, simultaneity, succession, duration, and the like.

As in the case of space, the distinction between the conceptual and perceptual types is supposed to hold in regard to time. And the distinction is in principle the same in the two cases. Perceptual time means those changes which we appear to experience directly within ourselves and in the objects about us as we live from day to day. The changes that we undergo as we run our course through life, the transformations that are bodied forth in objects as they move from place to place or arise and perish—these are the data of our perceptual judgment of time. Conceptualized, time is the “stream” in which these changes take place, but thought of as more or less independent of the events themselves; it is rather the bare succession of instants of which our arbitrary divisions (seconds, minutes, hours, days, years) are fragmentary and incomplete parts. Conceptual time is generalized duration.

Like space, time is apparently one or many as we please ; stretches of duration vary from individual to individual and from situation to situation, but the clock informs us that they are constant. And here, once more, the apparent inconsistency is explicable on the basis of the distinction between perceptual and conceptual time. As perceptual, time is primarily pluralistic in its connotation ; in a sense there are as many times as there are individuals who experience it, since duration varies with psychological attitudes and the circumstances that engender them.¹ As conceptual, however, time is one ceaseless flow of duration, so the common assumption runs, which is "pure" and untouched by the vicissitudes of human fortune and which, consequently, is absolutely constant.

Space, we have suggested, appears to be tri-dimensional ; time, it would seem, has only one dimension, namely, succession. Past, present, and future are only three stages in the one continuous flow of succession, which runs in one direction. The present is in a state of unstable equilibrium, continuously tumbling into the future and as constantly lapsing into the past. Moreover, this direction of time cannot be reversed ; it is from past to present, from present to future, and not *vice versa*. Time runs in one direction, and its direction is irreversible. It is to be noted, however, that past, present, and future are more sharply sundered in conceptual, than they are in perceptual, time. Where temporal facts are concerned (some temporal facts at any rate, such as human personality), the past and future are not sharply separable from the present ; in such cases the present is, in Professor James's striking phrase, a "saddle-back," its edges are ragged and sinuous, and it overlaps both the past and the future. In conceptual time, on the other hand, the present is regarded as clean-cut, an instant which is neither past nor future, and which, when past, is gone forever.

¹ "I'll tell you who Time ambles withal, who Time trots withal, who Time gallops withal, and who he stands still withal."

§ 2. *The infinity of Space and Time*

It is commonly supposed that both space and time are in some sense infinite. The purpose of the present section is to inquire briefly into the meaning and justification of this assumption.

(a) If one imagines an object moving away from the earth in a straight line, there is no conceivable end to its journey; it may go on indefinitely, and still there is always a "beyond" yet untraversed. Thus it seems necessary to conclude that there is no end to the extension of space. If one "takes the wings of the morning" and flies with the speed of light into the abyss of the heavens, space spreads yet before him. Space is infinitely extended. And the same seems true of the duration of time. However far into the recesses of the past or the vistas of the future one may allow his imagination to sweep, there is no conceivable instant at which there is not a still more remote past or a still more distant future. Time is infinite in duration. By the infinity of the extension of space and of the duration of time, then, is meant that there is no conceivable end to either: space spreads and time flows—both without end.

On the other hand, if we look toward the "here" of space and the "now" of time, we find the same bewildering boundlessness apparently present. There is no point of space, however small, which cannot conceivably be smaller; a line of any length may be broken into halves, each half into quarters, each quarter into eighths, and so on indefinitely. Likewise, there is no instant of time so short in duration that it cannot be conceived as shorter just as long as one pleases. Seconds are not the irreducible minimum of duration; why not tenths, hundredths, thousandths, of seconds? Science, indeed, frequently finds this further subdivision necessary; and the only justification for stopping the subdivision at any fraction is the consideration of practical convenience or the imperfection of instruments of measurement.

Theoretically there seems to be no limit. Thus space and time are infinite in divisibility, apparently, just as they are infinite in extension and duration. And by infinity is meant here, once again, *without end*: the point of space or the instant of time is never so small that it could not conceivably be smaller.¹

(b) It has long been known that there are certain peculiarly puzzling difficulties connected with the infinity of space and time, particularly with their infinite divisibility.² These difficulties turn around certain apparent contradictions that arise in connection with the effort to conceive space and time as actually infinite and at the same time as holding of the observed world of objects. A simple illustration (adapted from Zeno's arguments) may be set down as a sample of the nature of these difficulties. We ordinarily observe objects moving through space, and there seems to be nothing unusual or difficult about such an observation. But if one takes in earnest the notion that space is infinitely divisible and exists as an absolute entity in the objective order, the fact of motion presents logical difficulties of great proportions. For consider: A point (or an object) cannot conceivably move along a line (of any given length) because it cannot start moving, it cannot continue in motion even if it should somehow start, and it cannot arrive at the end of the line even if it continues to move indefinitely. (i) It can-

¹ Compare the flippant lines of Swift:

So, naturalists observe, a flea
Has smaller fleas that on him prey;
And these have smaller still to bite 'em,
And so proceed *ad infinitum*.

² The old Greek philosopher, Zeno of Elea (490-430 B.C.) was among the first to call attention to these difficulties, and he did so in the interest of this theory that motion cannot be real. His formulation of the difficulties is varied; the best known of his arguments are the paradoxes of Achilles and the tortoise, and the moving arrow. These and others of his arguments may be found in convenient form in C. M. Bakewell, *Sourcebook in Ancient Philosophy*, pp. 22-25; and in M. C. Nahm, *Selections from Early Greek Philosophy*, pp. 121-123.

not start moving, because, by hypothesis, there is always an infinite number of points along the line between the position it occupies before it starts and any position it might take after starting; thus there is no position *first after the starting point*, and so it cannot begin to move. (ii) Again, assume it to be in motion, it could not continue to move because there is no position *next to* the position it at any moment may occupy along the line, and for the same reason, namely, there is always an infinite number of points between any position occupied and any other possible position; so it cannot continue to move, since there is no *next position* into which it may move. (iii) Finally, it can never reach the end of the line because there is no *last point* or position in the series of points through which it must go before it can reach the end, and, once more, for the same reason—between it and the point at the end of the line there is always an infinite number of points. In short, the infinite divisibility of space seems to invest motion with contradiction and so reduces it to a logical impossibility; motion appears to be genuinely inconceivable in the sense that it is self-contradictory. This is only one among the many puzzles that appear to attach to the conception of the infinity of space and time; but it illustrates the fact that there are logical difficulties here, and so for our present purpose it is sufficient.

Two paths have been suggested along which it is thought escape from the difficulties attaching to the infinity of space and time may be found. One of these, according to some thinkers, lies through a fuller understanding and a more rigorous application of the principles involved in the numerical conception of infinity and continuity. For recent inquiries into the nature of numbers show that infinity means, not endlessness, but system definable by reference to a certain law which characterizes the series; and that an infinite series may be *continuous* and *dense*, that is, *one whole* of parts that merge into each other and not a collec-

tion of an indefinite number of discrete and sharply sundered parts. Applying these principles to space and time, those who follow this way of escape urge that the puzzles about motion seem to vanish. For the infinity of space and time does not mean that they are broken up into an infinite (that is, never-to-be-completed) number of sharply sundered points or instants, but it rather means that they are self-contained wholes which are possessed of certain unique characteristics, among which are those of *continuity* and *density*. Now it is these characteristics, we are assured, that make motion intelligible; indeed, these characteristics of space and time are ultimately definable only in terms of motion. The rigorous analysis of the conception of number, thus, seems to some to offer a clue whereby the riddle of motion may be solved. This is, of course, a very technical way out of the difficulty, and we cannot here presume to follow it farther.¹

(The other way out of the difficulties connected with the infinity of space and time is less difficult, perhaps, but how far satisfactory remains questionable. It lies through the distinction drawn above between perceptual and conceptual space and time, though it also touches upon the points involved in the mathematical way out. As perceptual, it is suggested, neither space nor time is infinite; as conceptual, both are infinite. But the infinity of *conceptual* time and space, it is supposed, does not involve us in the difficulties suggested above, since space and time as conceptual are by their very nature partly at least removed from the world of sense-perception and cannot logically therefore throw any stumbling-blocks in the way of the concrete ranges of experience. Motion, to take the case mentioned above, is a fact within perceptual, not within conceptual, space; there-

¹ Those who have the inclination to go farther in this direction and the mathematical training sufficient to enable them to do so will find a convenient starting-point in Spaulding, *The New Rationalism*, pp. 451-469. The references there given will point the way still farther.

fore the infinity of conceptual space presents no logical difficulties to a moving object.¹

§ 3. *Objectivity of Space and Time*

Are space and time objective in the sense that they are actually existent entities as physical objects are, or must they be described in some other fashion? To this question different answers have been proffered, three of which we may here set down.

It is commonly assumed that space and time have an objective existence in the same sense in which physical objects have. They are supposed to be forms, so to speak, in which matter moves about and changes from state to state. This is the common-sense notion of space and time. It is the view which has been handed down as a tradition from Galileo and Newton, both of whom were convinced that space and time are objectively existent frameworks of the material order.² And, until quite recently, this was the view of the physical sciences generally. But recent developments in these sciences have led to the formulation of another theory, as we shall see below.

Opposed to the notion of space and time as objective and absolute entities is the view which regards them simply as necessary forms of perception. According to this view space and time are nothing more than ways in which the human mind experiences objects,—spectacles, as it were, through

¹ The following references may be consulted for further discussion: Fullerton, *An Introduction to Philosophy*, Chapters VI-VII. R. W. Sellars, *The Essentials of Philosophy*, Chapters XVII-XVIII. O. O. Fletcher, *Introduction to Philosophy*, Chapters XXXI-XXXII. K. Pearson, *Grammar of Science*, 3rd edition, Part I, Chapter VI.

² Newton's conception is as follows: "Absolute, true and mathematical time flows in virtue of its own nature uniformly and without reference to any external object." "Absolute space, by virtue of its own nature and without reference to any external object, always remains the same and is immovable." Quotations taken from Schlick, *Space and Time in Contemporary Physics* (translation by H. L. Brose), p. 2.

which the mind looks out on its environment. Were all human minds and all other minds similarly constructed (if there be any) blotted out, space and time would forthwith cease to be. They are not in things, but in the mind that experiences things. They are, to be sure, necessary forms of perception or experience, not idle fancies to be dispensed with at pleasure; but they are of the mind nevertheless.¹

A third view of space and time regards them as general notions or conceptions derived from particular experiences. On this view, space and time are abstract ideas and have significance only as such. Perhaps the clearest expression of this view is to be found in that admirable discussion of ideas by John Locke, the famous *Essay Concerning Human Understanding*, to which we have already had occasion several times to refer. Space, Locke tells us, is an idea that we get by contemplating either the distances between objects or their bare extension. When we think of the extension of objects (length, breadth, and thickness) without any reference to the objects themselves, or of the distance between objects when there is nothing in it, we are thinking of pure space. Time, in its turn, is nothing but duration broken into various lengths (hours, minutes, seconds, etc.); while duration means the distance between any parts of that succession of ideas which we experience as they come and go in our minds. Time, thus, is measured duration, and duration is an idea we get from the succession of our mental ex-

¹ Among classical philosophers Kant most vigorously advocates this view of space and time (see the division of the *Critique of Pure Reason* called "The Transcendental Aesthetic"). His thesis is: "Space is nothing at all, if its limitation to possible experience is ignored, and it is treated as a necessary condition of things in themselves"; and "in abstraction from the subjective conditions of sensible perception, time is simply nothing, and cannot be said either to subsist by itself, or to inhere in things that do so subsist" (Watson, *Selections from Kant*, pp. 29, 34). Pearson (*Grammar of Science*, 3rd edition, Part I, Chapter VI) advocates a view somewhat similar to Kant's, though he would apparently explain space and time in terms much more psychological than Kant would be willing to employ. For Pearson "Space and time are not realities of the phenomenal world, but the modes under which we perceive things apart" (*Grammar of Science*, p. 218).

periences. So, for Locke, space and time are the ideas we derive from the contemplation of distances between objects or different parts of objects on the one hand (space), and between ideas as they run their course in our minds on the other (time). And this account by Locke may be taken as a statement of the third view of space and time which we desire here to contrast with the other two views previously defined.¹

It is clear that the three views of space and time above outlined cannot all be accepted, since they are not consistent with each other. If space and time be absolute entities, then neither the second nor the third view is acceptable. Each of the views has an element of truth in it; but there is reason to hold that none of them is entirely satisfactory. (i) Taken as absolute entities, space and time force upon us those paradoxes about infinity which we have already noted; furthermore, recent investigation has disclosed that such a conception of space and time cannot explain certain important facts in the physical environment and it is consequently being abandoned by scientific thought as we shall see in the next section. (ii) If we think of space and time as mere forms of perception, ways in which the mind experiences objects as extended and changing, we cannot easily account for the fact that objects in the world about us and we ourselves behave so persistently as if space and time were somehow objective realities. (iii) And the explanation of space and time as general notions derived from special experiences which we have with distances of extension and duration seems no explanation at all; for "extension," "duration," and "succession" are themselves apparently only space and time under other names. So it would appear that neither of these three views is a wholly satisfactory description of these basal notions of our experience.

¹ Locke's full account of the matter will be found in the *Essay*, Book II, Chapters IV, XIII-XV. (The main passages are contained in *Locke: Selections*, edited by S. P. Lamprecht, pp. 139-148.)

§ 4. *The relativity of Space and Time*

Recent scientific developments, particularly in the fields of mathematics and physics, have led to a new conception of space and time which promises to overturn a good many assumptions that hitherto have seemed established. Apparently we are on the eve of a new theory which certainly has far-reaching implications. The technicalities involved in the formulation of this new view forbid any attempt here to outline its arguments, even in their more superficial aspects. Some mention of the view must be made, however, if only to call attention to its existence and to give some references in connection with it. The attempt will be made merely to state two of its theses.

The views discussed in the preceding section all alike assume that, whatever space and time may be, they are at least radically different from each other. The new theory holds, on the contrary, that, so far from being disparate, space and time are inseparably linked with each other as two sides or aspects of the same reality, namely, motion, and that the full consideration of the one necessitates a consideration of the other also. In short, it holds that space and time are connected in an intimate manner. Instead of speaking of space *and* time, as has been the custom hitherto, we should be much nearer the truth if we spoke only of space-time; they are in nature hyphenated.¹

¹ "The mutual structural relations between events are both spatial and temporal. If you think of them as merely spatial you are omitting the temporal element, and if you think of them as merely temporal you are omitting the spatial element. Thus when you think of space alone, or of time alone, you are dealing in abstractions, namely, you are leaving out an essential element in the life of nature as known to you in the experience of your senses" (Whitehead, *The Concept of Nature*, p. 168).

"The idea that there is an absolute framework of time and a quite independent absolute framework of space is not easy to avoid. For we have been schooled to it, and the idea works well for the purposes of everyday life on our globe. But if both space and time are stripped of what is unessential, and presented in their bare nakedness, they look different. If there were no succession in time, and everything appeared as at one instant, a

A second thesis of the new view, and the one which for us constitutes its chief importance, is that space and time are wholly relative to the motion of observers and the measuring systems they employ. The Newtonian conception of space and time as absolute entities existing everywhere the same as the framework of the world is given up; for the new view, space and time taken as absolute are wholly without meaning. They have meaning only when referred to moving systems of objects, and they vary with those systems. Suppose, for example, an observer on the earth and another observer on the sun to be watching the same event; the spatial and temporal relations of that event will be different for the two observers since they belong to two different systems of reference, one of which is moving and the other relatively at rest. "Big Ben [a London clock] strikes one and, an hour later, two. For me, sitting hard by in Queen Anne's Gate, the strokes appear to occur at the same place, and to be separated by an hour. This agrees, too, with what my own watch says. But an observer situated on the sun would consider that the strokes had occurred at different situations in space of Big Ben, for he would have seen that the earth had moved in the hour about 70,000 miles along its orbital track with respect to the sun, from which he is observing. In resolving the result of his observation into the space component of the position, he thus resolves it with a different result from mine, for whom, Big Ben being at rest for me, the space change is *nil*. If he resolves the space by a different standard of reference, he has also to resolve the time component differently, for space and time . . . involve each

little reflection shows that we could not apprehend the positions of points in space. Their reality depends for us on their separation, which itself depends on transition, and this on succession in time. On the other hand, if, in the absence of all separation in space, there were only one spatial point in which existence centered for us as time elapsed, it is equally clear that intervals of time would have no meaning. Duration would be immeasurable, for it is by spatialising, as on the dial of a watch, that we measure it. Space and time are really abstractions from a reality which includes both in mutual implication" (Viscount Haldane, *The Reign of Relativity*, p. 46).

other. The watch of the observer on the sun may be constructed on the same principles as my own, but the measurement of time by the units marked on the watch on the sun, though apparently analogous, will have a different meaning. Its apparent agreement with mine will not be real, for the spaces on its dial, to which reference has to be made for measurement in looking for the simultaneities belonging to correspondence in time as indicated on the dial spaces, will not be in reality corresponding spaces, the measurement being made on a different basis of reference. There will thus be two different local time systems, just as there are two different local space systems, and the observer in each will measure with reference only to the coördinates of his own system." ¹ Thus both space and time are entirely relative to the standards of measurement used by observers, and these standards will vary as the relative movement of the systems in which the measurements are made vary.² Simultaneity, succession, length, and such similar relations of space and time have, for the new view, no absolute meaning which is eternally and immutably the same everywhere in the universe; on the contrary, these change from system to system of reference.³ Time and space, in short, are wholly

¹ Haldane, *The Reign of Relativity*, p. 90. The chapter in which this passage occurs is a comparatively simple statement of the theory of relativity. Another formulation of the point of the above quotation, which is slightly more abstract, will be found in Schlick, *Space and Time in Contemporary Physics*, English translation, 1920, pp. 13-16.

² Compare spatial relations as they appear to an observer in a swiftly moving train with the same spatial relations as an observer standing by the track would experience them.

³ For example, at some inconceivable distance from us there are events co-present with us now and also co-present with the birth of Queen Victoria. If A and B are co-present there will be some systems in which A precedes B and some in which B precedes A. Also there can be no velocity quick enough to carry a material particle from A to B or from B to A. These different measure-systems with their divergencies of time-reckoning are puzzling, and to some extent affront our common sense. It is not the usual way in which we think of the Universe. We think of one necessary time-system and one necessary space. According to the new theory, there are an indefinite number of discordant time-series and an indefinite number of distinct spaces" (A. N. Whitehead, *The Concept of Nature*, pp. 177-178).

relative to the circumstances under which they are experienced.

This looks like a direct return to one of the views of time and space noted above, the view, namely, that they are nothing but forms of perception. In a sense this may be said to be true. At least it is closely connected with the facts upon which the older view was based, such as the varying sizes of objects when seen under different conditions, the peculiarities of moving objects according as the observer is moving or at rest relative to them, and the like. But the new theory differs from the old in at least one important respect: it holds that space and time are in some sense objective; that is, are real characteristics of the world of objects, and not merely forms of perception dependent exclusively upon the observer. The striking confirmation of the theory by the results obtained from observation of the total eclipse of the sun, May 29, 1919, seems clearly to show that it is in principle correct, and it is probably destined to play an important rôle in the immediate future of the physical sciences.¹

¹ The theory of relativity is associated primarily with the name of Albert Einstein (born 1874), who is chiefly responsible for its mathematical proof. His researches can, of course, be understood only by those who have a sufficient comprehension of the higher mathematics to follow his reasoning. There are relatively simple expositions of the theory, at least of its general conclusions, couched in fairly untechnical language. But no exposition of it is easy of comprehension, largely because of the intrinsic difficulty of the subject but partly because the theory runs so counter to our traditional views. One who wants to understand the theory, even as regards its conclusions, must first learn to unthink much of what seems to him obvious about space and time.

Some of the relatively simpler expositions are: Albert Einstein, *The Special and General Theory of Relativity*; H. A. Lorentz, *The Einstein Theory of Relativity*; H. L. Brose, *The Theory of Relativity*; Steinmetz, *Space and Relativity*; A. S. Eddington, *Space Time and Gravitation*; M. Schlick, *Space and Time in Contemporary Physics*; A. V. Vasiliev, *Space Time and Motion*.

The more philosophical bearings of the theory are discussed in the following books: H. W. Carr, *The General Principle of Relativity in its Philosophical and Historical Aspect*; Viscount Haldane, *The Reign of Relativity*, especially Chapters III-VI; A. N. Whitehead, *The Concept of Nature*, especially Chapters III, V, VIII; C. D. Broad, *Scientific Thought*, especially Chapters IV, VI, XII.

§ 5. *Concluding observations*

From the discussion of this chapter at least one conclusion should stand out clearly, namely, that space and time are very troublesome categories. They are unquestionably categories which are indicative of important aspects of the physical environment, but they stoutly resist any off-hand treatment. For both the physical scientist and the philosopher they present pressing problems—problems of which the philosopher has long been cognizant, but which the scientist has only comparatively recently recognized as of fundamental significance in his own special field. And it should be clear, also, that these problems are still far from complete solution. The theory of relativity has solved some of them, and has thrown a helpful light on others; but others still remain awaiting solution.

It is no part of the present undertaking to presume to survey the special problems falling within the field of the physical sciences. What deductions are to be made there and what difficulties remain are for the specialist to determine. But it is not amiss here to remark that the theory of relativity of space and time, if accepted, confronts the physical scientist with the task of re-stating some at least of his basic principles. The current formulation of these principles presupposes the Newtonian view of space and time, and the new theory is a direct denial of certain aspects of this traditional view. But into these matters we could not here presume to enter, even if they were relevant to our task.¹

What in the theory of relativity is perhaps of most interest to the philosopher is the bearing it has both on the nature of matter (the "essence" of physical objects) and on the

¹ Note, for example, the formulation of the law of gravitation, which rests upon the Newtonian tradition. Whitehead calls attention to the difficulty here involved, and suggests a reformulation (in *The Concept of Nature*, pp. 179 ff.). Compare A. S. Eddington, *The Nature of the Physical World*, Chapters VI-VII.

nature of knowing. Each of these references of the theory we must therefore, in conclusion, briefly note.

(a) It is clear from the beginning of our analysis that, whatever in the end they may turn out to be, space and time are characteristics of ordinary physical objects. Such objects appear to be as genuinely spatial and temporal as they are hot or colored; in other words, they appear to be as genuinely relational as they are qualified. And, as our analysis proceeds, their relational character tends to assume progressively more significance, as is exemplified by the distinction historically drawn in that analysis between primary and secondary qualities—the former being spatial and temporal qualities which are supposed to be more fundamental, because more persisting and neutral, characteristics of the objects themselves.¹

This demand of analysis is indicative of a fundamental fact, namely, that matter, space and time are categories which are mutually involved. Any view which one entertains about matter will reflect a certain view of space and time, and *vice versa*. If, for instance, one conceives matter as a hard bit of stuff having dimensions (size, shape, and the like), one must conceive space either as a quality of such bits of stuff or as a peculiar sort of relations among them; and in either case, one's view of space is essentially the same, namely, that of the older Newtonian physics. On the other side, if one conceives space as Newton's "absolute space" which "by virtue of its own nature and without reference to anything external, always remains the same and is immovable," one is thereby limited in respect of one's view of the essential nature of material objects, one of whose characteristics is to occupy space; that nature would certainly have to be in extension, and matter would therefore have to be

¹ Even Kant was forced to admit this in principle, despite his unwillingness to admit that "real" objects are so characterized: objects as known (*phenomena*), at least, he was compelled to say are essentially spatial and temporal.

closely linked in conception with the "extended substance" with which Descartes identified it. And the same, *mutatis mutandis*, holds in the case of matter and time. Nor is there any great difficulty in seeing why all of this is necessary. Matter, space and time are all alike derived through judgmental interpretation of those situations which constitute the physical order—merely psychological time, perhaps, being an exception. It is therefore inevitable that they should be mutually involved in conception: the determination of one is, in some measure at least, the determination of the others.

Thus it turns out that, when the classical concepts of absolute space and absolute time are replaced in physical science by a combined space-time, the classical conception of matter necessarily undergoes modification. For the conception of matter must then be changed from that which occupies space and time to that which occupies space-time, from that which *is* to that which *happens*, from an *atom* to an *event*. And it must be so changed, because matter must now be conceived as that which is at once and essentially spatial and temporal—that is, as Whitehead expresses it, a bit of matter "is as much an instant of time as it is a point of space."¹ Thus the eventual character of matter becomes emphasized as fundamental, and the conception of matter is thereby radically transformed. "The new element is the event, and the new underlying basis is the four-dimensional space-time continuum of events."²

¹ A. N. Whitehead, *The Concept of Nature*, p. 173. See his discussion of the general issue in Chapters VII-VIII of this book.

² G. D. Birkhoff, *The Origin, Nature, and Influence of Relativity*, p. 171. The "four-dimensional" character of the continuum here spoken of is derived by adding the dimension of time to the three dimensions of Euclidean space. This is made necessary because, if one is adequately to determine a given event, *four* pieces of information are demanded—three to fix its position in space, and one to fix its position in time. "This fact is expressed by saying that Nature is a four-dimensional manifold; and nothing further is expressed thereby" (C. D. Broad, *Scientific Thought*, p. 217). Note Broad's warning here against misconstruction of the phrase, not infrequently used; that "time is a fourth dimension of space." Compare S. Alexander's discus-

This mutual involvement of the categories of matter, space and time is inevitable on the basis of our theory of judgment as outlined in the preceding Part—if, that is, we are privileged to hold, as apparently we are, that matter, space and time are categories which indicate various aspects of essentially one and the same existential meaning-situation. For, according to our theory, such categories are the results of judgmental interpretation which, throughout, must be coherent. And the involvement certainly seems to be indicated by the historical development of recent physical science: in this analysis, the modification of the older conception of matter goes forward *pari passu* with the modification of the conceptions of space and time. Thus the historical development seems to lie in support of our theory of judgment.

(b) There is another side to the theory of relativity which bears upon the problem of the nature of knowing in general and upon our own view of knowing in particular. That side is its emphasis as indicated above in the preceding section, namely, its emphasis upon the rôle played by frames of reference in the determination of space and time. And to a brief consideration of this we now turn.

However in the end knowing is to be described, there are two characteristics of it which must not be overlooked. These are: its dependence upon, and variation with, points of view or perspectives; and its claim to disclose the structure, or what Spinoza called the essence, of things. All along, at least since the days of Protagoras, philosophers have been cognizant of these two characteristics of knowing, and have tried to harmonize them; indeed, this may be said to be one of the chief aims of a theory of knowledge. But to attain it is very difficult. How can knowing be relative to a point of view and yet disclose the structure of things? Some have answered the question by frankly admitting that,

sion of the point in *Space, Time, and Deity*, Vol. I, pp. 58 ff., and Vol. II, Book III, Chapter II, A. A simpler discussion is to be found in A. S. Edington, *The Nature of the Physical World*, Chapter III.

since knowing is relative to a point of view, it is concerned with appearances only; and, consequently, it is a mistake to suppose that knowledge of the structure of things is possible. Others, not wishing to make such an admission for fear of being thereby driven to deny the possibility that two minds can have the same knowledge, have chosen to deny the rôle of the point of view and have tried to describe knowing without reference to it. Others still, feeling compelled to admit honest differences of opinion among those who may equally claim knowledge but agreeing that knowledge of the structure of things is logically prior to community of knowledge, have maintained the thesis that the point of view from which any given act of knowing undoubtedly takes place is never such as to distort what is known.

Now it seems that the relativity theory of space and time can throw helpful light on the issues involved in this controversy. For it seems to suggest that, in this context at least, the process of knowing takes place within inescapable "frames of reference" or points of view and yet at the same time discloses the structure of things as spatio-temporal events. Of course, it might be interpreted as showing that the process fails to make such disclosure; and it has been so interpreted.¹ But such an interpretation is hardly inevitable. Nor, since it virtually denies in this instance an apparently universal claim of knowing, is it to be chosen in preference to another interpretation which admits that claim, if such an interpretation is available. And such an interpretation seems to be available. It is the interpretation according to which the theory simply indicates the structure of spatio-temporal events—a new definition of space and time and matter—as contrasted with the older traditional view. The fact that "frames of reference" are involved in the description signifies nothing more than that the new categories are demanded by the process of judging.

In any event, this interpretation would appear to fit well

¹ By Dewey in *The Quest for Certainty*, for example.

with the view of knowing which identifies it with judging in the sense outlined above in Part I. If knowing is judging meaning-situations, then it may well be the case that the meaning-situation within which spatio-temporal judgments function demand that space and time be judged precisely as the theory of relativity says they must be. And, if such be the case, then the categories of space and time as thus judged must be said to be true; and that is all we can possibly mean by calling them real. To ask whether they are real in any other sense is to ask an idle question. Whether they are to be judged as the theory of relativity says they must be is a further question which properly belongs to the field of the physical sciences.

CHAPTER IX

EVOLUTION

One of the basal characteristics both of ourselves and of our environment is change. Time, however in the end it is to be described in detail, is apparently universal in its scope; nothing escapes it; on the contrary, everything seems to be bitten by its tooth. And time is change. Nothing seems to be fixed and stable; we ourselves and all about us are in process of transformation. As the old Greek philosopher, Heraclitus, expressed it: "Everything flows."¹ And yet in the midst of this change order seems to prevail. Nothing changes from one state to another haphazardly; on the contrary, everything changes in an orderly or lawful manner. Orderly change—this seems to be the fundamental characteristic of the universe.

Confronted by this universal fact, thinkers have through centuries of reflection busied themselves with the problems involved in it. In explanation, the category of evolution has been developed. "Changing order, orderly change, and this is everywhere—in nature organic and inorganic, in individual and in social life—for this vast conception, now everywhere diffusing, often expressed, rarely as yet applied, we need some general term—and this is Evolution."² Though

¹ Heraclitus (flourished about 500 B.C.) was a native of the city of Ephesus and is said to have been descended from the line of the Ephesian kings. Because of his somber view of life, he is sometimes referred to as the weeping philosopher. He was fond of stating his view in paradoxes, and many of his observations are profound. He is chiefly noteworthy in the history of philosophical speculation because of his emphasis on the ultimate significance of change. Translations of fragments from his writings may conveniently be found in C. M. Bakewell's *Sourcebook in Ancient Philosophy*, or M. C. Nahm's *Selections from Early Greek Philosophy*.

² J. A. Thomson and P. Geddes, *Evolution*, p. ix.

still in process of description in details and though more clearly defined in some fields than in others, the category is everywhere one of the basal ones in contemporary scientific and philosophical thought. We are here to inquire into the general meaning and types of evolution and to note briefly some of the philosophical problems connected with it.

§ 1. *Meaning and types of Evolution*

Stated in general terms, the category or theory of evolution is the thesis that the various complex forms of the world as they at present exist have grown by gradual stages from much simpler and less complex beginnings, which growth can be traced, in general outline at least, by piecing together evidence that falls within the limits of our observation and so can be scientifically defined or described. Literally, to *evolve* means to *unroll*, being derived from the Latin verb *evolvere* which is compounded of the two words *e* or *ex* ("out") and *volvo* ("to roll"). Taken generally as applied to the world at large or the universe, then, evolution is the process of the world's unrolling. With reference to any special subdivision of the world (such, for example, as a planet or a species of animal or plant life) evolution is the unrolling of that particular eddy within the gigantic stream of the world's ongoing. And the theories of evolution (for, as we shall see, there are different types) are the stories of how this unrolling, whether of planets or plants, has taken place, told with as great precision and in as great detail as the scientist can command.

The notion that evolution is a fundamental feature of the world is practically as old as our Western science. The ancient Greek thinkers were all somewhat acquainted with it; and some of them, particularly Empedocles, Democritus, and Aristotle, developed fairly well-defined, though, from our present point of view, quite crude conceptions of it. In the fragments of the writings of Empedocles one may find

the modern doctrine of "natural selection" rather clearly hinted at, though of course vaguely and even absurdly conceived in detail. The general doctrine of the development of the universe out of the primitive elements or "atoms" is the fundamental thesis of the Democritean world-view. In the philosophy of Aristotle, likewise, the doctrine of the "unrolling" of things is of fundamental importance, and his special biological studies anticipate with considerable clarity some of the basal aspects of the modern evolutionary view of life. But the main work in connection with the theory of evolution has of course been done in the modern period, and more particularly in the last two centuries. Among the great names here may be mentioned: Kant, Herschel, Lamarck, Laplace, Lyell, Darwin, and Hugo de Vries. For the details concerning the work of these thinkers, and of numerous others who labored with them, the reader should consult the histories of the different sciences.¹

The general fact indicated by the category of evolution is many-sided—as many-sided, indeed, as is nature herself. Three are of special interest to us here, namely: the evolution of organic forms (commonly spoken of as the evolution of life), the evolution of human society, and the evolution of inorganic matter. A brief survey of each of these types may enable us to get a clearer view of the general category.

¹ Libby's *History of Science*, Dampier-Whetham's *A History of Science*, H. F. Osborn's *From the Greeks to Darwin*, Thomson and Geddes' *Evolution*, and Merz's *History of European Thought in the Nineteenth Century*, Vol. II, Chapter IX, contain much information in easily accessible form. The more important works of the thinkers named above with their dates are: Kant, *General Natural History and Theory of the Heavens* (1755); Herschel, *The Construction of the Heavens* (1787); Lamarck, *Natural History of Animals* (1816-1822); Laplace, *Exposition of the Solar System and Celestial Mechanics* (1825); Lyell, *Principles of Geology* (1830-1833); Darwin, *Origin of Species* (1859); Hugo de Vries, *The Mutation Theory* (1900).

Kant, Laplace, and Herschel were interested in the evolution of the stellar world primarily; and with their names is associated the beginning of the nebular hypothesis (see Berry, *Short History of Astronomy*). Lyell was chiefly concerned with the problem of the evolution of the earth. Lamarck, Darwin and Hugo de Vries devoted their attention primarily to the evolution of life on the earth.

(a) At present when evolution is mentioned one thinks immediately of biological evolution, or the evolution of life. This is probably due to two historical facts. The first is that Charles Darwin, who first convinced the scientific world and made the conception of evolution of even popular significance, was a biologist and interested in the evidence gathered primarily from experimental observation of living things. The other fact is that the biological sciences have been in the forefront since Darwin's day in support of evolution and have been able to present such evidence as is in the main readily intelligible to the lay mind. But however that may be, evolution at present primarily denotes biological or organic evolution. So we consider this type first.

As the name indicates, biological evolution means the unrolling of organisms, the orderly growth and transformation of organic forms from relatively simple beginnings through various stages of increasing complexity. Of this type of evolution, there are two subtypes which need to be distinguished, namely, *ontogenetic* and *phylogenetic*.

By ontogenetic evolution is meant evolution of individual organisms, or what is ordinarily called the "growth" of an organism. The chick, for example, grows from a simple beginning in the egg through various stages of increasing complexity to the mature individual with fully developed organs, muscles, and bones. The study of this growth of the chick is a study in ontogenetic evolution. This is the sort of evolution which the biologist studies in his laboratory, by taking individual organisms of the same species at different stages of their development and through a comparative study working out their life-history. With this sort of evolution we are all familiar through our casual observation of plants and animals; it is exemplified in the growth of every organism, including our own bodies.

Phylogenetic evolution is the name given to the evolution of species, as contrasted with particular organic forms. Like any individual organism, a given species, such as the horse

or the elephant, is supposed to have had its origin in relatively simple forms and to have developed through types of varying complexity until the form it now has was attained. The story of this development of a given species of animal or plant is a study in phylogenetic evolution. This is the type of evolution in which the comparative anatomist is primarily interested. The horse of to-day can thus be traced back through generations of different types to the relatively small quadruped (called the Eohippus) eleven inches in height and with several toes instead of a hoof. The study of phylogenetic evolution directs our attention to considerations farther removed from common-sense observation than those with which one is concerned in ontogeny; but they are, of course, not less important on that account.

As held by scientists of to-day, then, biological evolution means the development of organisms, considered both as individuals and as species, through various states of complexity from relatively simple beginnings. And the evidence that has been marshalled is sufficient to warrant the assertion that the category, in both its aspects, is amply grounded.¹

(b) Social evolution is evolution in which human beings participate and which includes their behavior among its factors. The development of moral customs, religious beliefs and practices, types of civic or governmental organization, industrial enterprises, systems of thought, cultural drifts, are examples of the sort of evolution here under consideration. It is, in short, the evolution exemplified in the social environment; and its story is what is commonly called history.

Social evolution, too, presents two aspects which need to be distinguished, namely, the evolution of *institutions* and the evolution of *convictions*. These two aspects are impor-

¹ A compact summary of the evidence is contained in the little volume, *Evolution*, by J. A. Thomson and P. Geddes. This volume gives a rather full bibliography.

tantly different, and together they may with fair accuracy be said to include the main phases of social evolution.

By institutions are here meant the more or less stable embodiments of various sorts of relations obtaining among human beings. In illustration may be mentioned, as particularly important, the family, the church, the state, industrial groups, and traditions of color or class or race. Such institutions are important features of the social environment; and they are continuously undergoing changes. The changes which they embody constitute that aspect of social evolution which we have called institutional.

The other side of the changing social order lies in developing convictions. And by convictions are here meant beliefs or opinions reflectively arrived at and accepted as true; in other words, they are reasoned judgments. This side of social development finds its chief expression, perhaps, in man's systems—artistic, theological, scientific, philosophical. All of these are in process of transformation, some more and others less rapidly, in respect of their superstructure and even, it may be, in respect of their foundations.¹ And the transformation thus exemplified is what is to be understood by the evolution of convictions.

It would be a serious error, if one were to suppose that institutions and convictions are sharply sundered from each other within the actual on-goings of the social order. And as a safeguard against that error a word of explicit warning is necessary. The two are distinguishable aspects of that order; and they need to be distinguished in order to make explicit two different forces at work in that order—the one being more or less non-reflective in the main, and the other being exclusively (or at least chiefly) reflective. But they are not separable in actual fact; on the contrary, their functions are mutually involved, each exercising influence on the other in a greater or less degree. In his institutional activity

¹ "Our little systems have their day,
They have their day and cease to be."

man, fortunately, is not wholly unreflective, though reflection is here not infrequently at a minimum; nor, on the other side, are man's convictions entirely free from the domination of the institutions into which he is born and within which his meanings must arise, though the dominance is, fortunately again, not necessarily that of complete mastery. Man's very complex behavior is both institutionalized and reflective and, depending on circumstances, now the one drive and now the other is in the saddle. Within his arts and sciences the reflective drive is uppermost; and, fortunately for the human race, it functions, though in a less conspicuous manner, deep within the current of the evolution of institutions.

Of the facts indicated by the category of social evolution there can presumably be no serious doubt. Human history is but the account of the two drives indicated. As Carlyle says in the fourth lecture of his *Heroes and Hero-Worship*: "No man whatever believes, or can believe, exactly what his grandfather believed: he enlarges somewhat by fresh discovery, his view of the Universe, and consequently his Theorem of the Universe. . . . It is the history of every man; and in the history of mankind we see it summed up into great historical amounts—revolutions, new epochs. . . . So with all beliefs whatsoever in this world—all Systems of Beliefs, and Systems of Practice that spring from these."

(c) Long ago the ancient Greeks were convinced that the inorganic world has its history of continuous change from stage to stage of complexity. And modern science has wonderfully justified their conviction. Worlds and suns as well as the tiniest elements of matter, we now know, have also evolved. Here, three types of evolution may be distinguished: *geological*, *astral*, and *atomic*.

Study of the little planet on which we human beings live reveals to the geologist the fact that it has by no means always been in the condition in which it now appears. Only through various stages of development has it finally come to be the solid ball from which we draw our means of life.

These stages have left their traces in ocean, soil, rocks, rivers, and mountains—traces which the geologist notes and pieces together to form the string of evidence upon which he bases his story of the earth's evolution through æons of time. And the process, he tells us, is still going on before our very eyes in the changes taking place all around us on the surface of our planet and below. This, the geologist informs us, can be doubted by no one who has eyes to see and an understanding to appreciate the significance of what is seen. This is geological evolution—the transformation of the earth's features through the instrumentality of forces working in ages gone and even now irrevocably at their unending task.

But terrestrial evolution, long as it has been, is apparently only a short chapter in the gigantic book of nature and her ways. The astronomer bids us look abroad into the starry heavens above and observe what is happening there. There, he assures us, evolution is exemplified on an infinitely larger scale. He tells us that our solar system has its evolutionary history, that our sun and his train of planets have grown through the ages and is but an example of a more universal evolution which includes within its scope other stars in their courses and, perhaps, the entire universe of matter. Through the use of spectroscope and telescope, aided by his scientific imagination, he discovers gaseous stars, metallic stars, and carbon stars; and in each he finds different chemical elements present. In the gaseous stars, the group with the highest temperature, he finds comparatively few chemical elements; but when he observes the stars with lower temperatures, the metallic and the carbon stars, he finds more elements, increasing in complexity of organization as he passes from the relatively high to the relatively low temperatures. Thus he concludes that stellar systems, those yonder in the azure deeps as well as the one to which our little planet belongs, have grown through change and that all alike are caught in the vast evolutionary whirl.

Nor is this the end of the story, wonderful as it seems. The physical scientist, intent upon analyzing matter into its elements, asks us to turn our gaze towards the infinitesimal and note what wonders nature there works. In the infinitely small, as in the infinitely large, the forces of change are busy. The very elements themselves, so long regarded as immutable, are, it now appears, touched by change; even upon them it is now known to cast its shadow. Some of them at least are known to be capable of transformation into other elements, nor does the result of the transmutation seem to be any more "ultimate" than the original element itself. Both uranium and thorium, we are informed, may be transmuted into new elements; and these, in their turn, may also change—as, for instance, the emanation from radium, with a wholly new spectrum, changes into helium. And if some of the elements change, why not all? Thus those bits of matter which even recent science supposed to be the unchanging foundation-stones of Bishop Berkeley's "mighty frame of the world" may represent nothing more permanent than stages in the turn of the evolutionary wheel. They too, there seems reason to suppose, are only momentary aspects of the kaleidoscopic panorama of the world's on-going.

Thus, throughout the material order nothing seems permanent. From atoms and molecules to whirling systems of suns, including the little theater of mankind's bustle and bluster, evolution holds sway. As in the realm of life and mind so in the realm of the inorganic, both macroscopic and microscopic, change is the rule. The old Greek turns out to have been correct in his guess: "Everything flows."

Considerations like those indicated in the preceding remarks seem to lead to the conclusion that evolution is a fundamental feature of ourselves and our world. Nothing seems to escape it, neither suns and systems of suns nor atoms nor human beings. What precisely are the details of the several stories scientific analysis alone may inform us;

upon such matters only the expert can speak with competency. But we are not here interested in the details; we are interested, rather, in the philosophical implications of the different types of evolution we have briefly surveyed. And to a discussion of some of these we must now turn.

§ 2. *Evolution and causality: problems*

Before passing on to a discussion of some of the philosophical problems which arise out of the category of evolution, we must pause first to inquire briefly why such problems should arise.

If our reflective experience forces us to say that the world and all there is in it are in process of evolution, why should we not simply say it and let the matter rest there? What difficulties are involved in so saying? Why need we raise further questions? The necessity for going further arises out of the fact that the category of evolution claims to be, not merely a description of how things happen, but also an explanation of why they should happen as they do. And we must now elaborate this statement.

As we have already noted, the category of evolution is indicative not only of change but also, and more significantly, of *orderly* change. Things as evolving, whether they be organisms or atoms or stellar systems, are supposed to exemplify continuity in the midst of their transformations; such continuity is an essential feature of their evolution. And this means that the category of evolution involves the assumption that whatever evolves is *ipso facto* an exemplification of a causal order, that an evolving system is a causal system. When the scientist says that a given system ~~is~~ marked by such and such changes, what he is virtually saying is that the system in question is a causal system and that its changes are causally conditioned. Having described a system as evolving, therefore, one has supposedly thereby explained it; for, as we have remarked in Chapter IV, sec-

tion 3, above, a statement of causal connections among existents is assumed to be an explanatory statement of them. Description of a process of evolution, in other words, is also taken as an explanation of the process.

▶ If the view of causation which we have outlined above is accepted, such an assumption is inevitable. It is involved in the judgmental interpretation of those existential situations which are characterized by change. Indeed, it is involved in the judgmental interpretation of any existential meaning-situation; for such interpretation claims to be a description and, in so far as it is adequate, it is also an explanation. There is, consequently, no problem involved in the assumption, other than the general problem of causation itself, which we have already considered.

But in certain instances of evolutionary processes, other problems do arise from the assumption. And these problems are of special interest to the philosopher. They concern what we have called biological evolution and its place in the general story. But in order to formulate them, we must first look at a distinction between two types of causation, namely, *mechanistic* and *teleological*, which we have hitherto failed to note.

It is a matter of common observation that a stone remains at rest always in the same place unless its state of rest be interfered with by conditions outside itself, and it always behaves in the same way under the same circumstances. A machine continues always in its same condition, except as worn by friction or disintegrated by external agencies, and its behavior is marked by a regular uniformity. The stone and the machine may be taken as typical examples of mechanical systems. In mechanical causation, thus, there is a rigid uniformity such that, given a certain set of conditions, the same consequences invariably follow. There is here no element of "spontaneity" within the system; there is, rather, precise uniformity of behavior in which each stage is determined by the preceding one.

In the case of living things, however, the situation seems to be different. The behavior of a plant or an animal, for example, apparently differs significantly from that of a stone or a machine. Unlike the stone or the machine, the plant or animal seems to be characterized by a sort of self-motivation, its own organization functioning as a causal factor in its behavior; in some important sense it acts for its own preservation and reproduction. This character of the organism is its teleological character and is the prime differentia between it and a purely mechanical system. In terms of it the organism exemplifies a teleological system, or is a system involving teleological causation.¹

With this distinction between the notions of mechanical and teleological causal systems before us, we are in position to formulate with fair precision and in brief compass the problems with which a philosophy of evolution is concerned. As we have suggested above, these problems center primarily around biological evolution; more specifically, they may be

¹ As commonly employed, the term *telology* (from the Greek *telos*, which means "end") includes the notion of *purpose* as one of its constituent elements. In this usage, a teleological system would be a *purposive* system. As we have used the term above, however, the notion of purpose is not necessarily involved, except in the sense in which one could significantly say, for example, that the plant purposes to seek light or the lion to seek its prey. There is here no reference to purpose in the sense in which it involves reference to an end or goal consciously entertained and more or less clearly outlined in respect of future behavior. Some organisms may, indeed, be teleological systems in this further sense; organisms with minds are commonly supposed to be such. But that question is not just here before us, and properly belongs to the context of our discussion of the category of mind. All that we are at present concerned to emphasize is that organisms, biologically considered, manifest an end-seeking activity in the sense in which they may be said to have a welfare and to "seek" it through their characteristic behavior; that, in other words, they are partially at least motivated from within. In this sense they are teleological systems. Whether there are some organisms which are teleological in the further sense in which their behavior is consciously purposive, that is, is motivated by conscious anticipation of ends, is a question which does not just now concern us. If there are such organisms, the fact would simply indicate that there are different types of teleological systems which perhaps need to be distinguished; it would not in the least prejudice the position taken in the text.

said to pertain to the origin and nature of life.¹ Conceived as one general problem, they may be stated in the form of a single question: Is the evolutionary system, within which what is called life is manifest, a system of mechanical causation, or is it a system of teleological causation? Otherwise expressed: In attempting to explain the evolution of life must we introduce into our explanation the notion of teleology, or can the process be explained mechanistically? Or, remembering that explanation is simply adequate description, we may put the question in still another way: Can the evolution of life be adequately described in terms of mechanistic causation, or does adequate description call for reference to teleological causation?

But this general question may be made more specific by dividing it into two. The evolutionary process within which life appears may be looked at from two distinct points of view: on the one side it is the process of growth characteristic of specific organic forms, and on the other it is the larger process within which specific organic forms have their origin and development. Thus we may break our general question into two by limiting its application successively to each of these points of view. Limiting it to the first, we are faced with the problem of the nature and function of organisms, the evolution of life as it rides to its expression in particular organic forms, or ontogenetic evolution. Taking it in its second application, we meet the problem of the origin of such forms, the evolution of life considered on a larger scale.

Since this division of the general problem makes for definiteness, we shall adopt it in the following discussion. And we begin with the first application and near at hand.

¹ There are, of course, problems arising out of social evolution with which the philosopher must also concern himself. These, however, will be considered in another context below (see Chapter XI). Here we are dealing with life in the meaning usually attached to it in biological science.

§ 3. *Evolution within organic forms : ontogeny*

Can biological evolution within particular organisms be adequately described in terms of mechanical causation, or must appeal be made to teleological causation? This is the question before us in the present section. The two main answers proposed by contemporary scientists and philosophers are those of *mechanism* (which lays emphasis exclusively on mechanical causation) and *vitalism* (which insists that teleological causation is involved). It is our purpose briefly to consider these answers.

The mechanist holds that the living organism is only a physical-chemical machine and that its behavior can be resolved by analysis into physico-chemical processes. For him there is no fundamental difference between organic and inorganic matter; the chief difference between them which he admits is that of complexity, the organic forms being much more complex in their structure than the inorganic. The vitalist objects to this position, and urges that the organism is not a physical-chemical machine differing from the inorganic only in complexity of structure. He insists, on the contrary, that organic forms are radically different in kind from inorganic forms, that there is in the organism something *new* which is not found in inorganic or non-living matter. We shall let each of these contestants speak in some detail concerning his thesis, and then we shall attempt to estimate the status of the debate.

(a) The evolution and activity of all organic forms, the mechanist contends, can be satisfactorily explained in terms of mechanical causation. The arguments which he advances in support of this thesis are in the main four.

(1) LIFE NOT MYSTERIOUS. It is a rather common assumption that life is something more than the ordinary processes of change and activity that take place in the living organism. Life, so it is sometimes supposed, is a mysterious entity which is radically different from these observable proc-

esses. Now the mechanist is unreservedly opposed to this assumption ; there is, he holds, no justification for it. It is only a superstition reminiscent of the primitive conception of life as separable from the body. The truth of the matter is that life actually and exclusively *is* precisely what life *does*. Study the behavior of the organism and you study its life ; its life is not something different from its activities and the processes going on within it. If these activities and processes can be explained in terms of mechanistic causation, then life can be so explained ; for life is identical with them.

(2) PROGRESS TOWARDS MECHANISTIC EXPLANATION OF PHENOMENA OF LIFE. It is a matter of history that the biological sciences have in recent years made considerable progress in explaining the activities of organisms mechanically. Many phenomena, such as movements of organisms in response to stimuli and the development of muscles and organs within the organism, have been partly at least explained in mechanistic terms, despite the fact that only a short while ago it was supposed to be impossible so to analyze them. And every advance made by these sciences results in analyses of this sort. There is, therefore, every reason to believe that all vital phenomena, even though many of them at present cannot be so analyzed, will sooner or later yield to such analysis ; the historical progress of the biological sciences warrants this belief.¹ This is a second line of argument that seems to support the mechanist's position.

(3) METHOD OF SCIENCE MECHANISTIC. A third line of argument the mechanist bases on the method of scientific explanation. The argument is as follows: The most exact inductive sciences that we have developed, namely, physics and chemistry, now formulate their explanations in terms of mechanistic causation. And the more any given science develops in precision and accuracy, the more mechanistic does

¹ For evidence in support of this argument the reader should consult such a detailed consideration as that of Jacques Loeb in *The Organism as a Whole and Forced Movements, Tropisms, and Animal Conduct*.

it become. When organic chemistry, for instance, found it possible to prepare organic compounds synthetically, the concept of a "vital principle" was discarded and mechanical principles substituted in its place. It is therefore natural to assume that the method of science is essentially mechanistic explanation in terms of mechanical causation is its ideal or goal. The more scientific the study of the phenomena of life becomes, therefore, the more will emphasis be placed upon mechanism as the correct interpretation of life. The inevitable goal of the biological sciences, as *sciences*, is a mechanistic view of the evolution of life.

(4) INTELLIGIBILITY SYNONYMOUS WITH MECHANISTIC EXPLANATION. Finally, the mechanist contends that in so far as we succeed in giving a mechanistic account of life we make it intelligible; and, contrariwise, in so far as we fail to give such an account we leave life mysterious and vague. Physical and chemical processes we know in our laboratories; we can make them objects of direct experimental observation. Consequently, in so far as we can reduce life *to* such processes we make it understandable; to the extent that life is anything more than such processes it is merely a question-mark. Digestion as vital, in the sense of a complex of chemical processes, we know; digestion as vital in any other sense is a mystery. Mechanism as a theory of life, therefore, looks in the direction of intelligibility.

This, then, is the case of the mechanist: Life is not something different from the activities and processes of living organisms; many of these phenomena of life can be mechanistically explained, more of them are constantly being so explained, and there is reason to believe that all can be; the more precise the biological sciences grow in their analysis, the more mechanistic they must inevitably tend to become, since precision in analysis is essentially synonymous with mechanistic explanation; causation as mechanistic is alone intelligible. As over against this brief of the case of the mechanist what has the vitalist to say?

(b) On his side of the debate the vitalist asks acceptance of his thesis for the following reasons:

(1) THE ORGANIZATION OF THE LIVING BEING. Every living object is an organized whole and as such it has characteristics which do not fall within the scope of the mechanist's explanation. For the organism behaves in a way in which the non-living object does not; its behavior is an *adjustment*, that is, an attempt to right itself with the environment so that its well-being is taken care of. The movement of the amoeba towards food or away from an injurious substance, for example, is in the service of the individual's life as a whole; its activity has some sort of reference to its future welfare. An engine, on the contrary, will as readily tear itself to pieces as preserve itself intact by its behavior. If the organism is to be called an engine, then, it must be remembered what sort of an engine it is: it is "a self-stoking, self-repairing, self-preservative, self-adjusting, self-increasing, self-reproducing engine."¹ It is, in short, a teleological engine, whose every activity in some sense serves, or is meant to serve, the "end" of the organized whole.

(2) INDETERMINATE ACTIVITY OF ORGANISMS. In the case of inorganic matter one can predict with precision what will happen under given circumstances, while there is a certain indeterminateness in the behavior of an organism which is unpredictable. A stone on the hillside if loosened will roll until it reaches the bottom or meets an obstacle that interferes with the motion of it; and if it does meet an obstacle which brings it to a stop, it makes no effort to proceed on its journey. Its motion is not of its own impulsion. But the organism is different. The ant or the bee or even the plant seems driven by some sort of inner compulsion which causes reaction to stimuli such that it cannot be accurately predicted. If the ant meets an obstacle in its journey, it goes around or under or over it; the bee disturbed will fly away, but in one of an infinite number of possible directions;

¹ J. A. Thomson: *The Bible of Nature*, p. 100.

and the plant tries one type of reaction or another according as its environment places one or another sort of demand upon it. The organism is indeterminate in its behavior, whereas the behavior of inorganic matter is fairly predictable.

(3) SOME VITAL PROCESSES CAN BE EXPLAINED ONLY TELEOLOGICALLY. Recent experimentation has shown that there are certain vital processes, such for example as that of breathing, which cannot be explained in terms of mechanical causation, but demand rather some sort of teleological causation. "The idea which gives unity and coherence to the whole of the physiology of respiration is that of the organic determination of the phenomena. The same idea has to a greater or less extent already given, or is in process of giving, unity and coherence to the phenomena of nutrition, secretion, and circulation. It is an idea which guides us at every turn in physiological work, and constantly suggests new lines of investigation. . . . By regarding the structure and activities of a living organism as the expression of organic unity we arm ourselves with a theory which is just as useful in biology as the idea of mass in chemistry."¹ The teleological view of life, thus, is necessarily involved in the actual experimental procedure of the biologist; the phenomena of life cannot be explained otherwise than through teleological causation.

(4) INCONCEIVABILITY OF BIOLOGICAL MECHANISM. Finally, the vitalist has at times been inclined to argue that it is inconceivable how life can be explained in purely mechanistic terms. From the insensible stone tumbling down the hillside to the complex and exceedingly varied behavior of

¹ J. S. Haldane, *Mechanism, Life and Personality*, p. 88. This book and the same author's *Organism and Environment* advocate a modified form of the vitalistic view of life and offer evidence in support of it. The position taken by Professor Haldane is in direct opposition to that taken by Professor Loeb in *The Organism as a Whole* and *The Mechanistic Conception of Life*. A comparison of these books will serve to introduce the reader to the scientific side of the controversy. References for further study are given in the bibliography of this chapter. See also the article by Jennings in *The American Naturalist*, Vol. XLVII, pp. 385 ff., and the papers by Lovejoy there referred to.

organisms, particularly the more highly developed organisms such as the vertebrate animals, is indeed a far cry. And to suppose that the behavior of these organisms can be explained in precisely the same way in which the course of the stone down the hillside can be accounted for is simply inconceivable. Biological mechanism, therefore, is absurd on the face of it; it undertakes to account for the phenomena of life in an inconceivable manner.

This, then, is the case of the vitalist: living beings are characterized by a unique sort of organization whose activity serves the welfare of the whole, and such a characteristic no machine possesses; the activity of organic forms is indeterminate and unpredictable, and so is markedly different from the behavior of non-living matter; the phenomena of life are by experimental observation shown to be such that a scientific attempt to explain them necessitates the use of teleological causation; and, finally, it is inconceivable that the complex behavior of organisms, particularly of the higher organisms, can be mechanically accounted for.

(c) The following remarks may be helpful by way of a critical estimate of the debate between the vitalist and the mechanist.

The first argument of the mechanist is indicative of a truth of great importance. Certainly life is not something different from the observable processes which we call vital; it is not a hidden and mysterious entity behind these processes, any more than the mind is a mysterious "substance" which thinks and wills and feels. But this truth is as compatible with the vitalist's view as it is with that of the mechanist. Life may be identical with the vital processes (digestion, contraction of muscles, circulation of the blood, etc.) and still the main contention of the vitalist be true. The real problem is: How explain those processes with which life is thus identified?

The second argument of the mechanist has considerable weight, if it is true in fact. That the biological sciences have,

with improvement in the technique of experimental observation, progressed steadily in the mechanical interpretation of life appears to be a strong reason for holding that mechanism is on the right track. However, not all biologists are agreed that progress in biological research shows progress in the mechanistic explanation of life. As we have seen above, Professor Haldane holds just the opposite view, and there are other investigators in the field who agree with him in principle. There is thus a question of fact at issue which must be settled by the actual procedure and accomplishments of the biological sciences. Generally speaking, this much seems to be fairly certain: if the phenomena of life (meaning thereby the particular vital processes such as digestion, reproduction and the like special processes as well as the activity of the organism as a whole) show themselves to be more and more amenable to mechanistic analysis as the technique of the biological sciences is refined, then the case of the mechanist is strengthened; if the reverse is true, then the claims of the vitalist are strengthened.

The last two arguments of the mechanist do not seem to have any great value. ✓ That physics and chemistry formulate their explanations in terms of mechanical causation is no reason for supposing that biology must do so, unless it can be positively shown that physics and chemistry in their procedure exemplify what is necessarily true of all sciences. This must be proved, not assumed. Until it is proved there still remains the possibility that the phenomena of life necessitate the conception of a different type of causation from that which is applicable to the phenomena with which physics and chemistry deal.¹ The last argument of the mechanist is really a restatement of the third in slightly different terms,

¹ "No one of the main sciences, be they the objective—physical, biological, social; or the subjective—ethic, psychologic, æsthetic—is intelligibly reducible into the concepts of any other, those of mechanics, physics, chemistry, despite their long exaggerated pretensions, as little as any..." (Geddes and Thomson, *Evolution*, p. 231). See the symposium referred to in the next footnote below.

and with different emphasis. And it is open to the same criticism. If it is *assumed* that there is only one type of intelligibility of *all* phenomena, namely, intelligibility in the sense of mechanical causation, and if this assumption is made the basis for an argument designed to show that the phenomena of life are only thus intelligible, then obviously the question in debate has been begged; the argument, that is to say, assumes what it is designed to prove.

The first two arguments of the vitalist have great weight in support of his position. ✓ The "organization" and "indeterminate activity" characteristic of living things are phenomena which present to the mechanistic theory quite formidable obstacles. That these are characteristic of life seems true; and to many minds they dispose of the mechanistic hypothesis as an adequate account of vital phenomena.

The third argument of the vitalist would seem to be crucial in the controversy. If there are some vital phenomena, such as breathing, nutrition, heredity, and the like, which cannot be explained except in terms of teleological causation, then the case of the vitalist is, it would seem, practically established. But, as indicated a few paragraphs above, there is not general agreement among biologists as regards the phenomena here in dispute. Further progress in biological research can alone, therefore, speak decisively.

✓ The last argument of the vitalist, if, indeed, it is seriously advanced, proves nothing at all. Many hypotheses which when first advanced have to many seemed inconceivable have, in the course of the later development of science, turned out to be not only not inconceivable but necessarily true. Thus, at one time it was held to be inconceivable that the earth should be round or should swing free in space and revolve around the sun; men have been burnt at the stake and otherwise persecuted for believing such "absurd" hypotheses. But these are matters of common-sense acceptance nowadays. An hypothesis, therefore, cannot be ruled out of consideration because of its "inconceivability"; too

many "inconceivable" hypotheses have been proven true. The simple truth is that an hypothesis, unless it is flatly self-contradictory, cannot be regarded as inconceivable apart from a detailed investigation of its claims and the testing of those claims with reference to the relevant facts. For after all, an hypothesis is a judgment tentatively entertained; and whether any given judgment is conceivable or not can be determined only by further analysis of the meaning-situation within which the judgment in question functions.

(d) In connection with any attempt finally to estimate the status of the debate between mechanist and vitalist, the four following general observations would seem to be pertinent:

(1) In last analysis, the debate turns on the question whether the type of organization characteristic of living things is in any fundamental feature different from the type of organization characteristic of non-living things, such as an internal combustion engine, a crystal, or the myriad bubbles in the frothy surface of a dish of soapsuds.¹ Does the organism behave in a manner radically different from the way in which an inorganic complex behaves, and does the internal structure of the organic possess any essential feature which the inorganic does not have? This is the basal question at issue in the debate.

(2) The main burden of proof appears to lie on the side of the mechanist, despite his disposition at times to assume that the reverse is the case. The vitalist is willing to admit that the explanation of the phenomena of life offered by the mechanist is at least partially adequate; it explains the mechanisms through which life functions. He contends,

¹ This illustration is borrowed from Professor Thompson, who emphasizes it in his paper published in the *Proceedings of the Aristotelian Society*, Vol. XVIII, as a contribution to the symposium held in London, 1918, on the subject: "Are Physical, Biological, and Psychological Categories Irreducible?" Other contributors to the symposium are Professors Haldane, Mitchell, and Hobhouse. This symposium furnishes a helpful survey of the whole problem.

however, that such an explanation is not completely adequate, that it, indeed, leaves out of account some of the basal characteristics of living things; and he can readily indicate apparent facts in support of his contention. But the mechanist, on his side, is not willing thus to compromise with the vitalist. On the contrary, he tends to maintain that the vitalist's account, where it differs in principle from his own, is wholly without justification and can lay no legitimate claim to scientific standing. And in so far as he does maintain this, the burden of proof seems definitely to lie on his side of the argument.

(3) But the vitalist is not without his logical burden. In so far as he urges that within organic forms he finds something which is not present in inorganic matter, he is open to the very legitimate question: What, precisely stated, is this novel "something" which you claim there to discover? And until he answers this question satisfactorily he must remain embarrassed by the accusation, not infrequently brought against him, that he is deluding himself with a vague and mystical abstraction which utterly lacks scientific precision, that, so far from explaining life scientifically, he is merely romancing. Nor is the question readily answered.¹

(4) It must be remembered, however, that the vitalist cannot legitimately be charged with vagueness and "romanticism" merely because he fails to describe his novel "something" in terms of bodily processes. If he were thus to describe it, he would stultify himself; for his fundamental thesis is that it cannot be so described. All that can be legitimately demanded of him is that he state and justify his description in terms appropriate to the structure and

¹ Vitalists, of course, are alive to the difficulty and try to meet it. The "something" in question is variously described. In his *Creative Evolution* Bergson calls it the "vital impulse" (*élan vital*); Driesch, in his *Science and Philosophy of the Organism*, commonly uses the term "entelechy" to denote it; while McDougall, in his *Body and Mind*, speaks of it as the "soul." Such variations in terminology, however, must not be mistaken for radical differences in respect of the facts they are aimed to describe.

function of living things. And his position must stand or fall according as he succeeds or fails in this task. For what terms adequately describe life must, in the end, be determined through judgmental interpretation of those systems commonly called organisms. If one is blinded to this principle by some pre-conception concerning the supposed demands of "scientific" method conceived abstractly, as if scientific method were other than the method of competent judging within meaning-situations, one thereby embraces an assumption which certainly needs explicit justification and which, if our previous analysis of judging is sound, can hardly be justified.

In this section we have concerned ourselves exclusively with mechanism and vitalism as special views of the structure and behavior of organisms. In other words, we have been concerned with the philosophical problem of evolution as it pertains to that particular type which, in the preceding section, we called ontogenetic evolution. But, as we there also noted, the evolution of life fetches a much broader compass. Particular organic forms have each its origin; species have developed; and life itself is but a chapter in cosmic evolution.

Taken in this larger setting, biological evolution presents yet another problem of interest to the philosopher. The principles involved are, indeed, essentially the same as those involved in the controversy between the mechanist and the vitalist as we have above outlined it: the fortunes of mechanical and teleological causation are still at stake. But the issues are cast on a much larger canvass, which we now turn to survey.

§ 4. *Evolution of organic forms: phylogeny*

Taken in its wider context, biological evolution gives rise to a two-fold problem. On one side, the problem pertains to phylogeny in the strict sense, that is, in the sense in which

it means the development of species of organic forms. On the other side, the problem pertains to the relation between organic and inorganic evolution. The first is the problem of the origin of species; the second is the problem of the origin of life.

(a) For detailed evidence in support of the theory of phylogenetic evolution, the reader must go to the biologist who alone can speak here with authority. In the present context it must suffice to say that such evidence is manifold, being drawn from embryological and anatomical studies and from discoveries made in regard to the ancestry of species, such as the horse and the elephant. And this evidence appears to be sufficiently ample to warrant acceptance of the theory.¹ It is perhaps as surely grounded as is any theory of the natural sciences.

But in its detailed formulation, the theory involves a statement of the agencies at work in the evolutionary process. These are of special interest to us, since they are said to furnish the explanation of the process. We must therefore note them somewhat carefully.

The full title of Charles Darwin's great work, which was published in 1859 and which perhaps more than any other single work aided in the establishment of the evolutionary view of life and made the world think in terms of evolution—the full title of that work is significant. It is: *The Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. The significance of the title lies in its emphasis on the "means" whereby species are brought into being and are preserved. It is these "means" which specially concern us here. As developed by Darwin in his volume, they turn out to be mainly three: struggle for existence, variation, and heredity. A remark on each may aid clarity.

¹ A summary survey of the evidence may be found in the first two chapters of the volume, *Evolution*, by P. Geddes and J. A. Thomson. For supplementary reading, the bibliography at the end of that volume should be consulted.

STRUGGLE FOR EXISTENCE. A fundamental characteristic of every living creature is the tendency manifested by it to take care of itself and, to the extent of its ability, to make use of its environment for the gratification of its own needs. This tendency drives the organism to strive both to continue in existence and to enlarge its sphere of influence. Self-preservation and self-development is its goal, towards which it is driven by its very nature as a living being. Thus there arises a struggle among living beings for existence; those that win in the struggle survive, while the losers perish. The struggle is one of "tooth and claw"; life is the prize at stake. Such in bald outline is Darwin's conception of the struggle for existence and the necessity for it.

VARIATION. In the struggle for existence, Darwin further maintained, some individual organisms have the advantage over others because they happen to possess characteristics favorable to the conflict which the others lack. Darwin explains these as chance variations; variations, that is, which occur in the course of the struggle but which cannot be explained in the light of our present knowledge of the structural organization of individual organisms. Such variations he regards as potent factors in the evolution of life.

HEREDITY. But, if those variations which happen to appear in the individual organism and prove advantageous to it in its struggles to exist are to prove advantageous to the species as well, they must obviously be transmitted from generation to generation of organisms. This transmission of characteristics from an individual organism to its offspring has been shown to be an actual fact, and to it is given the name of heredity.

These three factors constitute the fundamental elements within the general principle which Darwin named "natural selection." And it was upon this principle that he relied to account for life's evolution. This principle is obviously potent in the development of life as we observe it around us in forest and field; it is therefore reasonable to assume, he

argued, that it is operative in the evolution of life generally. And on the basis of this assumption he built his explanation of the origin of species. The details of these three factors within natural selection, particularly the factor of heredity, are very differently conceived to-day and many changes have been, and are being, made in Darwin's account. But the evolutionary factors themselves are still accepted by biologists generally as in principle correct.

The chief importance of this explanation lies in the fact that it gives an account of phylogenetic evolution couched wholly in naturalistic terms. No outside agencies are brought in to explain the development of life from type to type of organic forms, but the whole process is accounted for in terms of natural causes. The inheritance of variations which have proved useful in the struggle for existence is the mainspring of the process, according to the account, and the assumption is that there is no need of any other causal factor.

This naturalistic emphasis of the theory is the main reason, no doubt, why it was early attacked as essentially atheistic and anti-religious and is, even to-day, looked at with suspicion in certain quarters. For the theory drives us to acknowledge with Darwin, at the end of his *Descent of Man*, "that man, with all his noble qualities, with sympathy which feels for the most debased, with benevolence which extends not only to other men, but to the humblest living creature, with his God-like intellect which has penetrated into the movements and constitution of the solar system—with all these exalted powers—man still bears in his bodily frame the indelible stamp of his lowly origin." And such an acknowledgment has seemed to many a virtual denial of those characteristics of man which are the special concern of the religious sentiment.

But it is not necessarily so. One may acknowledge all that Darwin says the theory demands, and yet without inconsistency maintain an essentially religious attitude oneself

and accept the essential tenets of religious faith. I say one *may* do this; whether one does so depends on further considerations in respect of the demands of phylogenetic evolution on one side and of the nature and function of the God of religion on the other. If the demands of evolution are accepted in good faith, then God certainly is robbed of some of the functions traditionally attributed to Him by the orthodox creed of the Christian religion. But the conception of Deity is not necessarily rendered superfluous by the category of evolution, except on the assumption that phylogenetic development is a chapter in a more universal story and that the evolution of life is explicable in terms of the type of causation which seems to obtain in the evolution of inorganic matter.

And this assumption concerns evolution on a still larger canvass, which in conclusion we must briefly observe.

(b) As we have already noted, the physical sciences have their story of evolution also. The whole physical environment and the very elements of which it is composed, they tell us, are in process of development and presumably in accordance with causal factors which control. Within this larger context phylogenetic evolution takes place, since organisms have undoubtedly appeared within this environment and, it would seem, late in its history. Putting these two considerations together, we appear to have something like the following account: as a relatively insignificant episode in the story of evolving worlds, our solar system has slowly emerged; through various geological epochs the crust of one little planet within this system, namely, our earth, has gradually formed and upon it has appeared protoplasm endowed with those functions which we call by the name of life; in numerous gradations more and more complex forms of this protoplasmic material have evolved, the most complex of which is, so far as we have knowledge, the human organism which in its turn has sprung from lowly origins and developed through æons of slow, halting, and tragic effort.

In short, phylogenetic evolution is but a minor chapter in a larger story, and is presumably causally linked with the whole sweep of inorganic evolution.

Such an account seems to be solidly grounded in scientific observation and theory. Confronted by it and accepting it in principle, what conclusion must we draw? Is it one story, or many? And is life causally linked with the non-living?

(1) There are those who maintain that the story is one in principle, that there is one all-inclusive evolution of which phylogenetic and inorganic are merely different aspects or phases. Let us name this view *monism*, and those who maintain it let us call *monists*. Over against the view of monism stands another, according to which the several types of evolution are sharply sundered and are not definable as aspects of different stages of one type. This view we shall name *pluralism*, and those who maintain it we shall call *pluralists*. According to the monist, then, there is one and only one basal type of evolution, which is the world-order; according to the pluralist, on the other hand, there are different types of evolution, which taken together as an aggregate constitute the world-order.

The case of the monist rests on the assumption (which, of course, he thinks is established) that the so-called different types of evolution are causally connected and therefore together form one all-embracing causal order. Starting from ourselves and attempting to trace the changes out of which we have sprung, we are at last driven to the conclusion that our bodies are natural products of the same evolutionary process which manifests itself in the formation of the earth on which we live, the solar system of which our earth is a part, and whatever other similar systems there are out in the depths of space beyond our sun. And the same conclusion is forced upon us, if we start with any other organic forms besides our own bodies. ✓ "This animal kingdom cannot exist without the vegetable kingdom; this again cannot arise before the stony crust of the earth has been disinte-

grated into loose soil by physical and chemical influences. We must further presuppose that this soil is watered by rains from time to time. The rain can fall only on condition that the water has previously been absorbed by the air, that it has been carried to a higher stratum and then condensed by a change of temperature. The water, again, cannot rise unless the earth is heated by the sun's rays. Hence the smallest blade of grass really calls into play the entire planetary system with all its arrangements and movements, and all the laws of nature."¹ From such considerations as these the monist concludes that the entire universe of things, organic and inorganic, is one causal sequence; that there are not *evolutions*, but only *evolution*.

Against all of this, the pluralist enters a caveat. Many parts of the environment have no evident connection with other parts, he objects, and it is consequently easy to think of the universe, the totality of things and events, as different systems of evolution rather than as one inclusive system. Thus to think of the universe is not only easy, the pluralist maintains, but is actually demanded by observable facts. He reminds us that: "The world is full of partial stories that run parallel to one another, beginning and ending at odd times. They mutually interlace and interfere at points, but we cannot unify them completely in our minds. In following your life-history, I must temporarily turn my attention from my own. . . . It follows that whoever says that the whole world tells one story utters another of those monistic dogmas that a man believes at his risk. It is easy to see the world's history pluralistically, as a rope of which each fibre tells a separate tale; but to conceive of each cross-section of the rope as an absolutely single fact, and to sum the whole

¹ Quoted by Paulsen (*Introduction to Philosophy*, English translation, second edition, pp. 225-226) from K. E. von Baer's *Studien aus dem Gebiet der Naturwissenschaften* (1876). This book is, of course, now out of date in respect to the details of scientific knowledge; but the quotation from it presents essentially the sort of considerations upon which the monist still builds.

longitudinal series into one being living an undivided life, is harder. . . . The great world's ingredients, so far as they are beings, seem, like the rope's fibres, to be discontinuous, cross-wise, and to cohere only in the longitudinal direction. Followed in that direction they are many."¹ The pluralist is willing to admit that there are many points of contact among various types of evolution. But he is not willing to admit that these are merely different phases of one gigantic process of evolution; on the contrary, he insists that the evidence is against such an assumption and points, rather, in the direction of the view that there are many evolutions and not one only.

As the reader has doubtless observed, the issues here in debate between the monist and the pluralist are essentially the same as those considered above (Chapter IV, section 5) in the discussion of the controversy about plurality of causes. For what is here being said, on the one side, is that the total evolutionary process is one causal system and, on the other, that there are different evolutionary processes which are not involved in one inclusive causal system but each of which is itself a distinct causal system. The critical comments made above on the controversy are, therefore, applicable here. To repeat them here is superfluous, however, and we turn to an important difference of view within the ranks of the monists.

(2) Assuming that one is committed to the monistic theory and so holds that "the choir of heaven and furniture of the earth" have been brought into being by one and the same evolutionary process which may be described as a continuous story, one may conceive the process in either one of two ways. One may conceive it as a *repetitive* process, or one may conceive it as an *emergent* process. Historically, it has been conceived both ways, and there is evidence in sup-

¹ William James, *Pragmatism*, pp. 143-144; the chapter from which this quotation is taken is concerned with the general problem. The point of the quotation is elaborated in the same author's *A Pluralistic Universe*.

port of each interpretation. Before bringing our survey of the category of evolution to a close, then, we must briefly survey this difference.

The view of the evolutionary process as *repetitive* holds that nothing "new" ever appears in the course of the world's development, but that each stage is only a repetition in varying complexity of relationship of the same elements that have gone before. When in the evolutionary process matter passes from what we call the inorganic to what we call the organic level, there is, according to this view, no leap or jump, nothing corresponding to what is sometimes spoken of as "creation"; on the contrary, the transition is continuous and results in only another, but more complex, arrangement (called the organism) of precisely the same elements which in less complex arrangement were present from the beginning. Life is merely a different and more complex organization of inorganic matter, and inorganic matter (however ultimately to be described) is the basal fact.¹ In short, repetitive evolution is evolution conceived as a system of mechanical causation.

The view of the evolutionary process as *emergent*, on the other hand, holds that, at certain stages in the process at least, something novel appears, something which was not there before the stage in question was attained, and that consequently it is an error to say that such a stage is only a repetition, even though of greater complexity of organization, of the same elements that preceded it. According to this view, when living matter appears in the evolutionary process something new "emerges" in the world-order, a jump or leap is made in the process, something like "creation" has taken place. The process, consequently, is not merely repetitive of what was present from the beginning; on the contrary, it is creative and on occasion brings "emergents" into being. It cannot be described as a system of mechanical

¹ This view is commonly spoken of in philosophy as materialism.

causation ; teleological causation, rather, is exemplified in it at those crucial stages where "emergents" appear.¹

That there is a basal difference between these two views of the evolutionary process is, of course, clear. It is also clear that both views cannot be true ; the one excludes the other. Which is true? The full reply to this question calls for an analysis of the relevant facts which cannot be undertaken here. It is easy to see, however, what these relevant facts are: they are chiefly those of life and mind. If vital and mental phenomena can be adequately interpreted as merely more complex systems of precisely those elements which must be supposed to have antedated them in the order of cosmic evolution, then that evolution must be held to be repetitive. If, on the other hand, the facts of life and mind must be looked upon as in any degree novel, if they cannot be explained in physical and chemical terms by the principle of mechanical causation, if mind cannot be analyzed without remainder into biological processes and these in their turn into physical and chemical processes, then it would appear that—assuming monism—the conception of emergent evolution is alone tenable. What the verdict of the facts is only detailed analysis can show.

As a final word, it is interesting to note that the two views of evolution here under scrutiny are identical in principle with mechanism and vitalism, at least in the sense that a mechanist must be in sympathy with the conception of repetitive evolution while the vitalist must be against it and in sympathy with the conception of emergent evolution. For what mechanists and repetitive evolutionists alike are maintaining is that life is explicable in terms of those conceptions which lie primarily in the sphere of the physical sciences,

¹ Mind, as well as life, is commonly regarded as an emergent ; but mind is not just now of direct concern to us. For a somewhat detailed statement of the view, see the first lecture in C. Lloyd Morgan's *Emergent Evolution*. This volume of lectures also works out some of the implications of the view, with which should be compared the analysis given in *Space, Time, and Deity* by S. Alexander. See also H. Bergson, *Creative Evolution*.

that, in other words, biology is in principle a department of physics and chemistry; and it is precisely this contention which, on their side, vitalists and those who accept the notion of "emergents" most vigorously oppose. It is interesting to note, also, that the bearing of the category of evolution on religion varies decidedly according as one or the other of these two views is under examination. Religion certainly could find little consolation in repetitive evolution; it would find emergent evolution more congenial, though not adaptable to many tenets which sometimes are made fundamental in religious faith.

CHAPTER X

MIND

It is, of course, a false assumption to suppose that what one readily talks about is on that account clearly understood. Nevertheless, the tendency to make such an assumption is a persistent human trait: all along mankind has supposed that the mere fact of giving names somehow renders things intelligible, and the illusion still makes dupes of us all to a greater or less degree and more or less frequently. For this reason we must be constantly on guard against language if we would be intelligent, as Bacon long since warned us; despite the fact that it is the most common, and for most people the only, vehicle of thinking, language is treacherous and bears watching.

This is particularly true of the term *mind* and its sundry synonyms—I, you, self, soul, person, spirit. These terms are notoriously vague and, consequently, ambiguous; and they “wonderfully obstruct” our thinking. Ask among even intelligent persons for descriptive statements of what they think the terms mean, and you will probably discover: either that the words are used merely as convenient verbal symbols without reference to anything sufficiently definite to be described, or that the description given by one person is more or less sharply at variance with that given by any other. Those persons who are specially concerned with rigorous analysis of the *psyche*, namely, psychologists, are themselves by no means agreed as to what should be meant; on the contrary, their differences are so marked that there cannot be said to be any one commonly accepted psychological definition or description of it—a result which primarily furnishes

what justification there is for the statement, sometimes made, that there is no psychology but only psychologies.

Nevertheless, the term *mind* or some synonym of it is constantly on our lips. It is, indeed, essential to significant speech; no intelligent conversation, even with ourselves, can long be continued without using it directly or indirectly. This doubtless is indicative of the fact that it points to something quite basal in the life-history of each human being. And its very vagueness and ambiguity are traceable to this 'act'. The many traditional and uncritical associations linked with it, from which its vagueness and ambiguity are directly derived, are themselves not entirely groundless; all may be traced to some apparently factual basis within the wide domain to which the term refers, and it is consequently commonly supposed to mean so many things because there are so many things which it may mean.

What should it mean? What is the manner of thing indicated by it? This is the problem which concerns us in the present chapter. The answer, of course, so far as one is available, must be derived from analysis of the meaning-situation concerned.¹ But a survey of various answers which have been suggested may help us in our independent analysis, and we therefore turn first to some historical considerations.

§ 1. *The category of Mind : historical*

(a) As in the case of the category of matter, so in the case of the category of mind, there is what may be called a pre-scientific view. It would, of course, be unwarranted to suppose that primitive man persistently reflected on the problem of the nature of mind; the problem doubtless caused

¹ Throughout our discussion it is to be understood that the human mind alone is under consideration and that, unless expressly stated to the contrary, the normal human mind is meant. The vexed question of abnormal minds—exemplified in types of insanity, multiple personality, and the like—and also that of the mind of lower animals are left on one side as not manageable in the present introductory survey.

him no sleepless nights. But he did entertain certain beliefs about himself and his fellows; and these beliefs we may, with proper precaution, piece together as his view of mind. He seems to have imaged himself as of a two-fold nature. On the one hand, he naturally thought of himself as a physical body occupying space and suffering its limitations; on the other hand, he believed that there was within his body and inhabiting it a sort of shadowy duplicate of it. This shadowy duplicate of the body he thought of as independent of the body in the sense that it might be separated from it either temporarily or permanently, and also as untouched by those limitations to which his natural or physical body was subject. "The belief most widely current among the peoples of lower culture is that each man consists, not only of the body which is constantly present among his fellows, but also of a shadowy vapour-like duplicate of his body; this shadow-like image, the animating principle of the living organism, is thought to be capable of leaving the body, of transporting itself rapidly, if not instantaneously, from place to place, and of manifesting in those places all or most of the powers that it exerts in the body during waking life."¹ Sleep, it is supposed, is due to the temporary separation of this ghostly duplicate from the body, while death means its permanent separation. Primitive man's view of what we call mind, then, is that mind is a shadow-duplicate of the body which lives within it and animates it but is independent of, and separable from, it. This is his explanation, in so far as he may be said to have had any explanation, of himself as mental.

Language clearly shows the close connection which originally existed between mind and the shadow or breath of the body. In many languages words which now mean mind originally meant breath or shadow. And it is not difficult for us to understand this association. The body always has its accompanying shadow which in some vague fashion is a

¹ W. McDougall, *Body and Mind*, p. 1.

duplicate of it. When one lies down in sleep this shadow disappears from view, and in dreams one may have actual experience of its floating away from the body and roaming at will in other places. And the breath, which comes and goes through the mouth and nostrils while the body is a living thing, takes its permanent departure at the moment of death.

(b) Just as the early group of Greek thinkers discarded the primitive conception of matter and undertook to replace it by a more definite conception, so they set aside the primitive view of mind and sought in its place a less vague hypothesis. On the whole they were inclined to think of mind as a sort of attenuated matter. Perhaps it would be more accurate historically to say that they drew no sharp distinction between mind and matter; on the contrary, they were prone to think of matter as living and to explain mental phenomena by that same original stuff which they conceived to be basic in the material or physical order. "Anaximenes of Miletus . . . says that 'our soul, which is air, rules us' . . . Anaxagoras, who accounts for the ordering of elements into a system of things by referring to the activity of Mind or Reason, calls mind 'the finest of things.' and it seems clear that he did not conceive of it as very different in nature from the other elements which enter into the constitution of the world. Democritus . . . developed a materialistic doctrine that admits the existence of nothing save atoms and empty space. He conceived the soul to consist of fine, smooth, round atoms, which are also atoms of fire."¹ And the same holds true in principle of the other Greek "physicists." Each of them tended to identify mind with matter, explaining mind in terms of the primitive stuff, however conceived by him, out of which all things have supposedly come. This view is sometimes spoken of as animism.

When we come to the two major Greek thinkers, Plato

¹ Fullerton: *Introduction to Philosophy*, pp. 101-102.

and Aristotle, we find a different emphasis. Mind and matter are by them more or less sharply sundered from each other and described in different terms. But they are not in agreement as to the terms descriptive of mind.

According to Plato, the mind (or, as he called it, the soul) of the individual presents two sides, each of which calls for a different description. (i) On one side, the soul is a complex affair and may by analysis be resolved into three principles or elements. These are: the rational principle, the appetitive or desiderative principle, and the spirited principle. They broadly correspond to what, in modern psychology, have been called reason, feeling, and will respectively. These principles are not to be thought of as three distinct souls, but only as three functions of one and the same soul. Nevertheless, there is an important difference among them in respect of worth; the two last named are the baser principles, though very important in the earthly life of the soul, while the first is the "divine" principle and is characteristic of the soul's true being.¹ (ii) On the other side, the soul is eternal, underived and indestructible; the soul of each individual existed somewhere before it became attached at birth to the particular body it now inhabits, and at death it will depart from the body into another sphere of existence.² This is the soul's true being, which is quite independent of any connection with the body. This side of Plato's theory might be called metaphysical, in contrast with the other which is psychological.

Aristotle insists upon a closer and more vital connection between soul and body than did Plato, though he too in the

¹ For Plato's own analysis, the reader should consult *The Republic*, 434 ff. (*Plato: The Republic*, edited by C. M. Bakewell, pp. 161 ff.).

² This is the famous doctrine of the pre-existence and transmigration of souls. For Plato's account, see the myth of the charioteer in the *Phædrus*; the tale of Er, son of Armenius, in *The Republic*, Book X; and the arguments for the immortality of the soul as stated in the *Phædo*. Poetical expression is given this Platonic doctrine in Wordsworth's famous *Ode on the Intimations of Immortality*.

end seems to allow a sufficiently loose linkage between them to admit of their ultimate separation. For him the soul is the organization of the body. To use his own terminology, the soul is "form" to the body which is its "matter." If one interprets this statement as equivalent to saying that the soul is *the organization of the body*, as I have just done, one must not understand the term *organization* to mean merely physiological organization. If one does so, one thereby misinterprets Aristotle's meaning. He thinks, rather, of the soul as an entity which makes possible the organic whole that we know as body but which, partly at least, is separable from it. In other words, for him the soul is the organizing principle of the body but it is not identical with bodily organization; it is the non-bodily principle within the body, the *form* within the *matter*, which, though it constitutes the organization of the body and is its principle of unity, nevertheless may be said to "stand to it in the same separable relation as a sailor to his boat." Despite his quite explicit effort to bring mind and body into closer relation than Plato succeeded in doing, then, Aristotle is in principle in agreement with Plato concerning that relation; for each, mind is after all something so different from the body that it is separable and may be said to have an existence in its own right. And Aristotle agrees with Plato, further, that the true being of mind lies in its rational principle; for him, too, the reasoning element is a non-bodily, and presumably immortal, principle of the soul.

(c) The sharp separation between mind and body emphasized by Plato and accepted, at least in principle though with some hesitancy, by Aristotle became the dominant note of the theory of the soul advocated by the thinkers of the Middle Ages, largely because of their pre-occupation with the immortality of the soul and their conviction that its immortality logically demanded such a separation. In modern philosophy and psychology, the tradition received its classic

statement at the hands of Descartes, who made of the soul or mind an independent substance with characteristics which sharply sundered it from material substance. The latter, as we have seen, he defined as *extended* substance; but spiritual substance, he maintained, wholly lacks extension and is characterized only by *thinking*, which is wholly lacking in material substance. And this Cartesian dualism between mind and matter speedily became traditional in modern thought.

The reasons why Descartes maintained that mind is such a *thinking substance* are mainly two. In the first place, he was convinced that particular mental activities, such as feeling, willing, and thinking, could not take place in and of themselves; if there is an act of willing there must be something which wills, if there is feeling there must be something which feels, and if there is thinking there must be something which thinks. In the second place, he was convinced that this "something" of which these several acts are functions could not possibly be *extended substance*, which in and of itself is wholly passive. For these two reasons he thinks we must conclude that there is a non-material substance, an active something which expresses itself in these several ways of thinking and feeling and willing, in short a spiritual substance.

Locke agreed that the position of Descartes is in the main sound, and that the reasons advanced in support of it are convincing. The "operations of the mind" we conclude "not to subsist of themselves," nor can we apprehend "how they can belong to any body, or be produced by it"; therefore "we are apt to think these the actions of some other substance, which we call spirit." And, Locke admits, we have ample reason for such a conclusion. Nevertheless, his confidence is touched by scepticism. We have reason for supposing that there is "the substance of spirit"; but the fact still remains, he thinks, that we have and can have "no clear

and distinct idea" of its nature. And in this unsatisfactory state Locke chooses to leave the matter.¹

(d) Locke's hesitant scepticism on the matter was made militant and carried into a detailed statement by two later thinkers, one a fellow-countryman and the other a German. They are: David Hume (1711-1776), one of the subtlest thinkers Scotland has produced; and Immanuel Kant (1724-1804), a German thinker of Scottish ancestry and one of the greatest figures in modern philosophy.

Hume bases his criticism of the conception of mind as spiritual substance primarily upon the consideration that there is absolutely no evidence which one can discover in support of the conception. If such an entity or spiritual substance as the traditional view supposes the mind to be really exists, he urges, then one ought to be able to point to evidence of the fact. But, he submits, there is not the slightest evidence of the existence of such an entity. All that one can discover in any given moment of consciousness are numerous experiences—called by Hume "perceptions"—of pleasure, pain, sights, sounds, thought, desire, and the like. One cannot ever find there anything like this spiritual substance talked about in the traditional doctrine, nor can one observe any experiences upon which to rest an inference concerning its hypothetical existence. There is therefore no justification for supposing that it does exist. "For my part," Hume says, "when I enter most intimately into what I call *myself*, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I can never catch *myself* at any time without a perception, and never can observe anything but the perception. When my perceptions are removed for any time, as by sound sleep; so long am I insensible of *myself*, and may truly be said not to exist. And were all my perceptions

¹ For his full statement, see his volume, *An Essay Concerning Human Understanding*, Book II, Chapter XXIII. Selected passages may be found in *Locke: Selections*, edited by S. P. Lamprecht, pp. 176 ff.

removed by death, and could I neither think, nor feel, nor see, nor love, nor hate after the dissolution of my body, I should be entirely annihilated, nor do I conceive what is further requisite to make me a perfect non-entity."¹ Such are the chief reasons which Hume advances against the traditional theory of mind and in behalf of which he asks that it be discarded as not a genuinely scientific conception. All we can know within our consciousnesses are sundry experiences; these experiences are constantly changing and hence cannot be identified with that spiritual substance which is supposed to continue the same from day to day, whether connected with or separated from particular experiences, whether sleeping or waking; such a spiritual substance is, therefore, not directly observable, nor is there any evidence that it exists, and so it must be given up as a mythological conception. To what extent this reasoning is conclusive we shall inquire in the further course of our survey.

Kant's method of attack against the traditional view of mind is different from Hume's, but in the end it leads to essentially the same conclusion. Instead of pointing out, as Hume does, that for the existence of mind as a spiritual substance no direct evidence is available, Kant argues that the traditional view is self-contradictory. For this view holds in effect that each individual knows his *self* as he knows other objects, that he can make his *self* a direct object of knowledge. Now this is impossible, Kant maintains, since it is always the self or mind that does the knowing; the mind is always subject of knowledge and cannot be made object of knowledge. I cannot know *I* but only *me*; myself as *subject* I cannot know, but only myself as *object*. But myself as object is precisely my various experiences that come and go with passing moments. Thus Kant comes around to Hume's position: all we can know directly are

¹ *Treatise of Human Nature*, Book I, Part IV, section vi. Selby-Bigge edition, p. 252 (*Selections*, edited by C. W. Hendel, p. 84). By a "perception" in this quotation Hume means an "experience" in the usual sense.

our experiences, hence there is no justification for supposing that the mind as traditionally conceived exists. To suppose that the mind is known as a spiritual substance is not only unjustifiable, but involves a manifest contradiction.

Having denied the validity of the traditional view of the mind, both Hume and Kant proceed to suggest new hypotheses which they contend are more scientific and intelligible. The two hypotheses are in important respects different from each other, and a study of them will open the way for our survey of contemporary theories.

Hume's fundamental thesis is that any individual's mind is exclusively and wholly the sum-total of experiences that fill that individual's life. The joys and sorrows, pleasures and pains, sounds and sights, ideas and deeds that fill the individual's life from day to day—these, and these alone, constitute his mind. In Hume's own words: "The mind is a kind of theatre, where several perceptions successively make their appearance; pass, re-pass, glide away, and mingle in an infinite variety of postures and situations. There is properly no *simplicity* in it at one time, nor *identity* in different; whatever natural propension we may have to imagine that simplicity and identity. The comparison of the theatre must not mislead us. } They are the successive perceptions only, that constitute the mind. . . ." ¹ Hume admits, as he must of course, that these "perceptions" or experiences, in spite of their wide diversities, constitute *one set*, since they all belong to the same individual. Your various experiences of sights, sounds, sorrows, and the like are all *yours*, however unlike each other they may be and however quickly they may come and go. Each individual mind is, in Hume's phraseology, "a bundle or collection of different

¹ *Treatise of Human Nature*, Book I, Part IV, section vi, Selby-Bigge edition, p. 253. The student must bear in mind that Hume uses the term "perceptions" in this quotation and elsewhere in his book as synonymous with the term *experience* as we ordinarily use it.

perceptions, which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement. . . ." But the question inevitably arises: Why should these rapidly changing experiences constitute a "collection"? What is the "string" that ties them into a "bundle"? Why, in plain language, should numberless rapidly passing and radically different experiences hang together as the experiences of one and the same individual mind? This question is of basal importance in any theory of mind. Its justice Hume himself recognizes, and he attempts to answer it. Briefly stated, his answer is this: these various "perceptions" that constitute the "bundle" which we call the mind of a given individual are bound together by the laws of association. As Hume understands them, these laws are mainly three: the law of contiguity or nearness in space, the law of succession or nearness in time, and the law of resemblance or likeness. Experiences that are contiguous to each other in space, or are successive in time, or resemble each other, if they are thus joined with each other constantly, tend to become linked together and the one is associated with the other. To illustrate these three types of association: if the dog and its master are seen frequently together, the two are finally associated and the sight of either alone tends to bring the other to mind (association by contiguity); the flash of lightning is always immediately succeeded by the noise of the thunder, and so when we see the flash we expect to hear the noise even before it is actually heard (association by succession); the resemblance which the face of a stranger now before me bears to the face of my absent friend tends to bring to mind an image of the friend (association by resemblance). In these several ways, thus, experiences are linked together and constitute one mind. So the "string" that binds the manifold experiences of the individual into one "bundle" is woven out of the laws of association. This, then, is Hume's answer to the problem of mind: The mind

is a multitude of different experiences connected with each other by means of the laws of association.

The solution of the problem of the nature of mind proffered by Hume is not acceptable to Kant. And it is not acceptable to him largely because he thinks that Hume failed to probe to the bottom of the question concerning the mind's unity. Kant is willing to admit that the laws of association are operative within experiences, and so far he agrees with Hume. But he insists that these laws themselves would be impossible unless the mind were something more than a mere haphazard bundle of experiences. For these laws of association presuppose memory; contiguous, successive, and resembling experiences are not ordinarily associated unless they are repeated several times, and repetition is identical with memory. Because I see the master and dog together once is no reason why they should become associated in my mind except under very unusual circumstances; ordinarily, I have to see them together several times before the associative link between them is formed. But this means that I must remember having seen them together several times before any association takes place. Memory, thus, is presupposed by association. Now, Kant contends, memory is impossible unless there is some sort of agent to do the remembering. Thus Kant is forced to the conclusion that Hume's view of mind as a collection of experiences tied together by the laws of association does not go to the heart of the matter; there is more of unity within mind, he insists, than Hume admits. This unity he calls by the somewhat formidable appellation of "synthetic unity of apperception," nor is it quite clear what he means by this. He sometimes speaks of it as thought or intelligence—the "I think" which accompanies all our experiences. But, fortunately for our present purpose, it is not necessary for us here to inquire what precisely Kant means by his "unity of apperception." He at least means by it some sort of capacity within the mind to organize different experiences into meaningful

wholes either by way of memory and association or by way of inference. For Kant, then, mind is not a "bundle" of experiences; it is rather an "organization" of experiences made possible by an actually existent principle or agent of organization. In other words, mind for him is a multiplicity of experiences brought together into meaningful wholes or groups by the activity of an organizing agency, probably conceived by Kant as judgment. Two points in this view need emphasis to distinguish it from the preceding views: the first is the insistence upon the necessary existence of some definite principle of unity among experiences—a necessity which Hume denies; and the second is the conception of this principle as an active, organizing agency, over against the traditional Platonic-Aristotelian view of it as a static and changeless entity or thing.

(e) In recent psychological literature three main views of the nature of mind have been expressed. These we shall now attempt to state in general outline.

On the one hand, there is the view of mind which follows, not historically but logically and with variations in detail of course, the line of thought suggested and defended by Hume. Perhaps one of the clearest expressions of this view is that by Professor Titchener: "Mind is the sum-total of human experience considered as dependent upon the experiencing person . . . the phrase 'experiencing person' means the living body, the organized individual . . . for psychological purposes, the living body may be reduced to the nervous system and its attachments. Mind thus becomes the sum-total of human experience considered as dependent upon a nervous system. And since human experience is always process, occurrence, and the dependent aspect of human experience is its mental aspect, we may say, more shortly, that mind is the sum-total of mental processes."¹ This view of mind is essentially Hume's conception dressed

¹ E. B. Titchener, *Text-Book of Psychology*, 1910, p. 16.

in the terminology of contemporary physiology and psychology. Professor Pillsbury states practically the same view in his definition of mind as "the entire series of conscious states of an individual from birth to death."¹ This is the view of an important school of contemporary psychologists.

There is another important group among contemporary psychologists who maintain (agreeing in principle with Kant) that human experiences cannot be made intelligible apart from the assumption that there exists among the experiences some ground of unity other than and different from both the experiences themselves and the central nervous system. For this group mind is a manifold of experiences linked together by a unifying agency which is non-bodily in nature. Professor Stratton has expressed this point of view in the following vigorous passage: "Sensations and judgments and memories, and all things else in our mental life, are to be conceived, not as self-complete and relatively independent things, but as acts of a living being. . . . The mind can no more be constructed out of small pieces of ideas than the living body can be conceived as resulting from a gradual assembling of scattered heart-beats, with, later, a stray digestion and the rest. . . . The mind is the deeper and more permanent reality, and mental phenomena are its ways of behavior. It has power and activity from within. It is not a mere creature of circumstances—not a mere eddy in the endless stream of sensations,—it is an agent, a person, facing the world, and acting upon it with will and intelligence."² And this view Professor Stratton

¹ W. B. Pillsbury, *Essentials of Psychology*, 1911, p. 6.

² G. M. Stratton, *Experimental Psychology and Culture*, 1903, p. 305. Other interesting expressions of the same point of view are the following:

"The facts of our conscious life, especially the fact of psychical individuality, the fact of the unity of consciousness correlated with the physical manifold of brain-processes, cannot be rendered intelligible without the postulation of some ground of unity other than the brain or material organism" (McDougall, *Body and Mind*, p. 356).

"The scientific study of conscious experience leads to a concept of unity and self-consciousness, which is the most fundamental and comprehensive

presents as the "ascendant view" of modern psychology.

Within recent years, particularly since Professor Stratton's book above quoted was written, there has grown up in psychology another view of mind which, though in some respects novel, bears striking similarity to one aspect of Aristotle's view of mind as "form" of the body. This view has gained considerable strength during the last decade and is at present a strong contender in the field of psychological theories of the nature of mind. The view is that all experiences are nothing more than bodily reactions to the environment, and that the bodily organism—the nervous system and its attachments—is the only ground of unity among these experiences. Thus, Dr. Watson tells us that "personality" means nothing but "an individual's total assets (actual and potential) and liabilities (actual and potential) on the reaction side . . . assets are that part of the individual's equipment which make for his adjustment and balance in his present environment and for readjustment if the environment changes. By liabilities we mean similarly that part of the individual's equipment which does not work in the present environment and the potential or possible factors which would prevent his rising to meet a changed environment."¹ By "equipment" here Dr. Watson means exclusively biological aptitudes such as instincts, impulses, habits, and the like. Mind, thus, is virtually identified with instincts, impulses,

concept which can be formulated in experience" (C. H. Judd, *Psychology*, 1907, p. 316).

"Psychology may be defined provisionally as science of consciousness—of perception, memory, emotion, and the like. Many psychologists find this definition sufficient as it stands, but . . . it does not go far enough. For consciousness does not occur impersonally. Consciousness, on the contrary, always is a somebody-being-conscious. There is never perception without a somebody who perceives, and there never is thinking unless some one thinks. Bearing this fact in mind, we may define psychology more exactly by naming it science of the self as conscious" (M. C. Calkins, *A First Book in Psychology*, 1910, p. 1).

¹ J. B. Watson, *Psychology from the Standpoint of the Behaviorist*, 1919, p. 397.

and habits as types of response to the environment; it is the body in action. Experiences are organic responses to the environment, and the unifying ground of them is the organism itself.¹

(f) This brief historical survey is perhaps sufficient to suggest with fair accuracy some of the more important views of mind held during the course of European thought on the problem. For purposes of a summary statement of these views, we may omit divergent details and reduce them to four main types.

The first type is what is commonly referred to as the *spiritual-substance* theory. According to this view, mind is a non-bodily entity which is always identical with itself and which acts as the unifying bond of momentary conscious experiences, such as acts of thinking and willing and feeling, by "having" them as functions of itself; it is the permanent "substratum" to which these experiences belong, in which they inhere, and which thus unifies them into one system. This view is associated particularly with the names of Plato among the ancients and Descartes among the moderns.

The second type of theory is that which conceives mind as identical with the organization of conscious experiences, as the time-transcending yet time-including unity of such experiences. According to this view, mind is not a spiritual substance which stands over against particular conscious experiences as different from them; it is, rather, precisely such experiences organized into meaningful wholes. This view springs in principle from Kant; but it was modified in

¹ The group of "new realists"—an important group of contemporary philosophers—generally hold in principle to the behavioristic view of mind. R. B. Perry's *Present Philosophical Tendencies*, Chapter XII, and Holt's *Concept of Consciousness* are representative books of this group. Professor Dewey is quite sympathetic to the point of view as is indicated by his book, *Human Nature and Conduct*. The discussion of that book is based on the belief, as expressed in the preface to it, that "Mind can be understood in the concrete only as a system of beliefs, desires, and purposes which are formed in the interaction of biological aptitudes with a social environment."

more or less significant ways by Hegel and his followers, who changed Kant's formal statement of it. It is known by different names, three of the most common being "transcendental," "organic," and "personalistic." We shall speak of it henceforward as the *organic* theory of mind.

The third type is the view of mind as an aggregate or collection of experiences, non-bodily in nature and connected only by certain laws of association. According to this view, there is no spiritual bond of unity among conscious experiences, whether conceived as a spiritual substance or as an inclusive unity of them; on the contrary, there are only sundry experiences haphazardly joined by habit and custom. If you could exhaustively enumerate all of the experiences of a given individual from birth to death in their various more or less accidental arrangements relatively to each other, you would then have compassed the totality and adequately described his mind as conceived by this theory. *Actualism* is the name sometimes attached to this theory, and we shall refer to it by that name which is perhaps as convenient as any. In the history of philosophy the theory is, of course, chiefly represented by Hume.

Finally, there is the general type of theory which denies that there are any conscious experiences at all, or at least in anything more than a Pickwickian sense. According to this theory, all experiences of willing, feeling, thinking are merely bodily responses to environmental conditions; and the unity among such experiences, their organizational structure, is completely explicable in terms of the neuromuscular system. For it, mind is behavior and the principle of unity is the behaving organism. This view is sometimes supposed to be of recent origin, and is called *behaviorism*; in principle, however, it is of ancient lineage, some of its tenets at least finding advocacy in the atomism of Democritus.

From the survey of these four types of theory, two points stand out fairly clearly. The first is that the problem of

mind as thus debated concerns some mechanism of unity among particular experiences. The second point is that it concerns some sort of relation between this mechanism and the bodily organism. These, then, are the two main issues which we shall consider in our attempt to estimate the claims of the several views. For clarity of discussion we shall treat them separately, beginning with the first.

§ 2. *Mind and unity among experiences*

Among the four types of theory outlined in the preceding section, there seems to be a consensus of opinion that the mind of an individual is a complex whole of sundry experiences somehow interconnected. But important differences arise in connection with the description of the relationship. The spiritual-substance theory posits an entity (substance) which is supposed to bind the experiences together by somehow "owning" them; the organic theory seeks the unity within the structural organization of the experiences themselves; the actualist theory virtually denies all unity, save what is explicable as occasional groupings through habit or other similar "laws" of association; while the behaviorist theory posits the neuro-muscular system as the only ground of unity, any appeal to a non-bodily principle of organization being derided as both superfluous and mythological. What, we now ask, are the relative merits of these claims?

(a) Both the spiritual-substance and the actualist theories, it would appear, must be set aside as incompetent. The criticisms of the former by Hume and of the latter by Kant still obtain and seem fatal to their respective claims. Let us briefly resume the case against each.

So far as the traditional spiritual-substance theory is concerned, the defects in it which Hume with great penetration disclosed still vitiate it; and they are open to anyone who will stop seriously to consider the matter. These defects may, for summary statement here and without special ref-

ference to Hume's exposition of them, be reduced to two. (i) One never observes within experiences such a spiritual substance as this theory assumes to exist; therefore the only reason that can be given for the assumption is that it is the most satisfactory hypothesis that can be advanced in explanation of the unity within the mental life whose explanation we are seeking. (ii) But a little reflection discloses that, so far from being the most satisfactory hypothesis, it does not in the slightest degree render intelligible the unity that obtains among experiences. For, be it remembered, this spiritual substance is by hypothesis a changeless static entity which is the same yesterday, to-day, and (presumably) forever. How, then, it could possibly link itself on to the evanescent and constantly changing experiences in such a way as to bind them together into one whole such that a given experience, which may belong to the distant past (as, hearing a ghost yarn in childhood), bears a causal relation to a much later experience (as, fear of a cemetery in later life)—how this is possible the theory offers no intelligible solution. It merely asserts that this spiritual substance, this "ego," somehow in its purity "owns" or "supports" or "has" the various experiences of hope and fear, pleasure and pain, joy and sorrow, remembering and aspiring, observing and thinking, which make up the content of the individual's life; what is to be understood by the relation of "owning" or "supporting" or "having" is not stated, and apparently cannot possibly be stated, with sufficient precision to make this very important relation intelligible. In short, the theory is so vague as to have no rational value, and its vagueness cannot be removed since it is inherent in the fundamental concept ("spiritual substance") which the theory postulates. As a rational solution of the problem of mind, therefore, the theory is useless; its abstractness and consequent vagueness is its ruin.

Modern psychologists who seemingly accept the actualistic view of the nature of mind generally accept it as a point

of view convenient for the purposes of the psychologist. That is, when they define mind as the sum-total of mental experiences they are thinking of it as something which the science of psychology is interested in analyzing. Now if the psychologist finds actualism a convenient point of view in his work, no one may presume to call him to account for making use of it; that is his privilege. And if actualism be taken simply as a convenient point of departure for the studies of the psychologist, nothing can be said against it. For purposes of psychological observation mind is largely identical with experiences; the business of the psychologist is to find out what these experiences are and to describe them with precision. But taken as a completely adequate account of the nature of mind the view of the actualist is open to serious criticism. The criticism of it which Kant advanced would seem to be fatal. Stated in terms more familiar to us than those employed by Kant in his formulation of it, the criticism amounts to the accusation that this view cannot account for such knowledge as we human beings actually do possess. This knowledge would be impossible if mind were only an aggregation or "collection" of haphazard experiences. If our minds were nothing more than such a collection, we could not possibly make universal judgments. That "every event must have a cause," that "the sum of the interior angles of a triangle is equal to one hundred and eighty degrees of a circle," or that "the presence of friction implies heat" could never be known from separate and sharply sundered experiences. The fact that such judgments exist and are typical of mind is sufficient proof that mind is not alone a mere collection of experiences. In Kant's own words: "If consciousness were broken up into a number of mutually repellent states, each isolated and separated from the rest, knowledge would never arise in us at all, for knowledge is a whole of related and connected elements." "If each feeling were limited to a single moment, it would be an absolutely individual unit. In order

that the various determinations of a perception, as, for instance, the parts of a line, should form a unity, it is necessary that they should be run over and held together by the mind." "If, in counting, I should forget that the units lying before my mind had been added by me one after the other, I should not be aware that a sum was being produced or generated in the successive addition of unit to unit; and as the conception of the sum is simply the consciousness of this unity of synthesis, I should have no knowledge of the number."¹ In other words, Kant is urging here that both reasoning and memory would be impossible if mind were nothing more than a collection of experiences; to make these possible mind must be a unity in a sense in which an aggregation or collection is not a unity. And it must be admitted that Kant's criticism of the actualistic theory is justified. Mind is in some sense an organized whole; any theory which leaves this out of account finds itself in the end, as Kant insists, unable to account for judgment and memory. So we may leave the actualist's theory on one side as an inadequate description of the totality of mind.²

Having discarded the spiritual-substance and the actualistic views of mind as unsatisfactory because of the difficulties that attach to them—difficulties exposed long ago, particularly by Hume in connection with the spiritual-substance theory and by Kant in connection with actualism,—we are left with two other theories to consider. So we pass on to a study of the claims of the behavioristic and organic views.

(b) Before proceeding to a critical study of these two theories, however, it is very necessary that we have clearly

¹ The above quotations are taken from J. Watson's translation of the *Critique of Pure Reason* and are to be found in his *Selections from Kant* on pages 56, 57, and 60 respectively. Compare *Kant: Selections*, edited by T. M. Greene, pp. 74, 75, 76.

² Even Hume seemed to recognize its inadequacy. In an appendix added to his *Treatise of Human Nature*, he says: "Having thus loosen'd all our particular perceptions, when I proceed to explain the principle of connexion, which binds them together, and makes us attribute to them a real simplicity and identity; I am sensible that my account is very defective. . . ."

before us the more important characteristics of mind which any theory of the nature of mind, if satisfactory, must make intelligible. These characteristics are, first, the fact of consciousness or awareness, and, secondly, those special activities of mind which exemplify in an emphatic manner the interconnection, or dovetailing, of experiences.

By consciousness is meant awareness of something. One may be aware that one's tooth is uneasy, that an important engagement is pressing, or that the book which one desires is absent from its accustomed place and one is irritated in consequence. This awareness of experiences is consciousness, and it is at least an apparent characteristic of mind that must be explained by any theory of the mind's nature.

In the second place, there are several activities of mind which exemplify the functional interrelation of experiences; they are simply different ways in which experiences are linked together as complex units or wholes. And these activities must be explained by any adequate theory of the nature of mind. The more important of these activities are the following:

HABIT. Past experiences of the individual are constantly functioning in the present. For example, if my tooth-brush hangs in a certain place for a number of weeks, my repeated experiences of reaching for it there result in a tendency on my part to continue to seek it in the old place even long after I have moved it to another place in the room. Walking, talking, manipulating machinery, playing games like tennis and baseball, and the doing of a thousand and one similar things are all illustrations of the same sort of activity. In this activity experiences that belong to the past continue to function in the present. To the activity is given the name of habit.

PERCEPTION. By perception is here meant the apprehension of objects as present to the senses of vision, audition, taste, etc. This is a very common type of experience and at first seems to be quite simple. Analysis discloses, however

that it always involves the linking of present with past experiences. Take, in illustration, one's perception of a friend approaching in the distance. Besides the experience directly present in consciousness, namely, the visual appearance of an object approaching, there are involved in the total experience called *the perception of a friend* a number of recollections (sound of the friend's voice, the color of his eyes, his personal characteristics of jollity, sympathy, and the like) which cluster about the visual appearance of the friend's body as seen from the distance and which are re-instatements of experiences that belong to the past. And, be it noted, these recollections are essential elements within the perception of the friend, since without them such a perception would be wholly impossible. And this is true of every act of perceiving: while possessing a core of present experiences connected with the activity of the sense-organs, it is constituted largely of reverberations from past experiences hanging over in the present and functioning there. Thus perception like habit, to which it is in some respects closely allied, is a type of mental activity in which the inter-relation of experiences is fundamental; in it present is linked with past.

EMOTION. The activity known as an emotion, such as fright, joy, anger, or sorrow, is exceedingly complex. It, too, is a functional interweaving of manifold experiences. Suppose you are driving a car on a dangerously narrow and precipitous mountain road and suddenly you discover that the car is gaining momentum in spite of the application of the brake. Your terror is much more complex than your immediate experiences with the racing car. Besides the perceptual complex, the emotion involves numberless reactions growing out of past experiences plus more or less vague forebodings as to the possible outcome of the impending catastrophe. And this is in general true of every emotion; it is a complex of experiences built around a perceptual nucleus.

and, like habit and perception, it reaches back into past experiences.

RECOLLECTION. Another important activity of mind is the recall of past experiences by explicitly re-instating them in present experiences through imagery. This is recollection—memory in the narrow meaning. Thus, one may re-instate in consciousness where one was yesterday, the sights one saw during last summer's vacation, the melody one heard sung long ago, and the verse committed in childhood. The essence of this activity is the reproduction in present consciousness of that which actually constituted the content of another consciousness more or less remote in time.

THINKING OR REASONING. Thinking or reasoning is reading the meaning or significance of some content of consciousness and (making inferences on the basis of it) in short, judging. Illustrations are numberless. The farmer regards the glow at sunrise and predicts rain for the morrow; the juror hears the evidence and reaches a conclusion concerning the guilt or innocence of the accused; the mathematician infers that, the nature of the triangle being what it is, the sum of its interior angles must equal 180 degrees; by observation of the process going on in the test-tube before him the chemist learns that certain elements are active there; and so on indefinitely. Obviously here we have a very complex activity. It is the linking together of multitudinous experiences in meaningful relations.

We have thus six activities in the light of which the theories of mind we are yet to consider must be tested. Did the mind—as the actualist supposes—consist solely of fading experiences which are discontinuous and so sharply sundered from each other that no one left a trace of its existence upon any other, then neither consciousness nor habit nor perception nor emotion nor recollection nor judging would be possible. But these activities belong to mind and, indeed, constitute its basal features. Mind, therefore, must be said to be a unity of complexes; and if we are to secure

a scientific conception of its nature, this unity must be made intelligible. We turn now from this preliminary analysis to an estimate of the two theories of the nature of mind remaining for our consideration.

(c) Behaviorism undertakes to explain all the activities of mind enumerated above—in so far, that is, as they are admitted to be genuine types of activity—in terms of the central nervous system and its attachments.¹ A fundamental characteristic of the neuro-muscular system is what is known as “integration.” By integration is meant the tendency of the nervous system to function as a whole and not as a collection of independent and detached elements. In other words, the nervous system is made up of millions of elements called “neurons”; these neurons are bound together in an intricate network of relations and are functionally connected so that they tend to act together—when one neuron is excited its activity is transmitted to other neurons in such a way that they tend thereafter to function in connection with it; this interfunctioning of neurons ramifies throughout the nervous system, and to this interfunctioning is given the name of “integration.” Now it is the contention of behaviorism that all the activities of the mind can be satisfactorily explained in terms of integration.² Let us at-

¹ Of course, various exponents of behaviorism differ in the details of their theory. No account can here be taken of these differences. Furthermore, like actualism, behaviorism as a psychological point of view is legitimate; and as such is not open to all of the criticisms developed below in the text. What follows must therefore be understood by the reader to be an attempt to state what seems to be the logical drift of behaviorism taken, not as a provisional psychological point of view, but as a complete and exhaustive account of the nature of mind. For three distinct formulations of behaviorism, see the opening pages of the article by Lashley, “Behaviorism and Consciousness,” *Psychological Review*, Vol. 30, pp. 237 ff. For a frank statement of behaviorism as a philosophy of mind, see A. P. Weiss, *A Theoretical Basis of Human Behavior*.

² If the reader is not familiar with the general structure of the neuro-muscular system and of its element, the neuron, he will find information in the psychological texts sufficiently detailed for the present discussion. If he wishes an exhaustive analysis, he must go to the books on neurology.

tempt to follow his explanation of the activities above enumerated.

To the extreme behaviorist consciousness is a word without an intelligible meaning. He may not deny outright that there is some meaning to be attached to it, but he does insist that to say there is is to make an assumption for which no tangible evidence can be given. The various activities of mind, he thinks, can be satisfactorily and adequately explained without the use of the term consciousness, and he therefore denies that any obligation to explain the nature of consciousness rests upon him. He excludes it from his scientific vocabulary as a useless and superfluous term; and, doing so, he by implication at least denies that consciousness has any real existence.¹

Habit he explains in terms of the interfunctioning of neurons. My practice of reaching for my tooth-brush, for example, has repeatedly excited conjointly the same set of neurons; as a result a circuit² is formed among the neurons so that when one acts the others act with it in the same manner in which they have acted with it before. Hence, when I desire my tooth-brush, certain neurons are stimulated which communicate their activity to their fellows in the circuit and the movement of my arm in the direction of the old location of the tooth-brush results. Now one such circuit or "reflex arc" may itself become a part of a larger circuit; so we have systems of reflexes. Habit can be defined, then, "as a complex system of reflexes which functions in a serial order when the child or adult is confronted by the appropriate stimulus. . . ."³ Habit, in short, is the neuro-muscular system active in specific situations.

Perception, likewise, finds its sufficient explanation, the behaviorist thinks, in precisely the same terminology. Take the case of the child learning to perceive an orange. Sup-

¹ See A. P. Weiss, *A Theoretical Basis of Human Behavior*, Chapter XI.

² The technical name for this circuit is "reflex arc."

³ Watson, *Psychology from the Standpoint of the Behaviorist*, p. 273.

pose that the orange at first means to the child nothing more than what it sees; *then* the act of perceiving will consist in the activity of a certain set of neurons involved in the act of seeing. But let the child have the experiences of taste, odor, and feel in conjunction with his visual experience of the orange, and let this conjoint experience be repeated frequently enough to establish an integration among the various neurons involved in these different experiences, eventually the color of the orange will call up its odor, taste, and feel even when the orange is seen merely and not tasted and smelt and touched. Thus the full-blown percept of the orange as a complex of qualities is born; it is simply an integration of neurons. Perception, thus, is a type of habit.

Emotion is explained by the behaviorist as a complex of nervous processes connected with the perception of a definite situation through the reflex arcs or circuits concerned. Your fright in the case of the run-a-way car, for example, consists of violent bodily changes caused by integrations initiated by the situation that confronts you but reaching far back into your hereditary past. Or more technically: "An emotion is an hereditary 'pattern-reaction' involving profound changes of the bodily mechanism as a whole, but particularly of the visceral and glandular systems."¹

Recollection, the behaviorist insists, is nothing but a type of habit, and so can be explained in the same way that all habits are accounted for. It is true that there is a common assumption to the effect that recollection involves mental imagery and so is different from ordinary habits. When we recollect what we had this morning for breakfast we ordinarily suppose that we have in consciousness images of various articles of food. But mental images do not exist, according to the behaviorist's account; what are usually called

¹ Watson, *ibid.*, p. 195. "By pattern-reaction we mean that the separate details of response appear with some constancy, with some regularity and in approximately the same sequential order each time the exciting stimulus is presented."

images are nothing but "implicit language or word habits." Consequently there is no difference between recollection, recall of past experiences, and habit; the explanation of the one is the explanation of the other.

Thinking, as the behaviorist views it, is also a language habit. "It is not different in essence from tennis-playing, swimming or any other overt activity except that it is hidden from ordinary observation and is more complex and at the same time more abbreviated so far as its parts are concerned than even the bravest of us could dream of. . . . when we study implicit bodily processes we are studying *thought*; just as when we study the way a golfer stands in addressing his ball and swinging his club we are studying *golf*."¹ The activity of thinking, in other words, is simply nervous integration; we think literally with our neuro-muscular system.

(d) According to the organic theory of mind, it is logically impossible to explain these activities exclusively in terms of the neuro-muscular system, as behaviorism undertakes to do. Of course, this system is involved in them, but it is not a sufficient ground of them. In addition, this theory holds, we must posit a non-bodily principle of organization (the "subject" or "self"—Kant's "transcendental unity of apperception") which is basically involved in them. Before inquiring how this theory would explain these activities, however, let us note certain questions of fact on which it joins issue with behaviorism.

These are chiefly three: the existence of consciousness, the existence of images, and the nature of thinking.

As regards consciousness, behaviorism denies that it exists as an observable character of experiences and consequently urges that no factual description of it is possible. The organic theory, on the other hand, finds direct evidence in immediate experience of consciousness, the awareness of par-

¹ Watson, *op. cit.*, pp. 325-326.

ticular experiences; introspection discloses that consciousness or awareness exists as a character of at least some experiences, and is therefore amenable to factual description—though, of course, not in terms of the neuro-muscular system.

In the case of images, the organic theory affirms once more what behaviorism denies. The flash of lightning seen and the flash imagined or recalled are two distinct types of experiences as common sense assumes they are; a mental image belongs to the latter and constitutes its essential feature. Here the advocate of the organic theory agrees, rather, with Hume, who urges that “impressions” (experiences in present consciousness) and “ideas” (experiences imagined or recalled) “are in general so very different, that no one can make a scruple to rank them under distinct heads, and assign to each a peculiar name to mark the difference.”¹

Thinking, once more, is differently conceived by the two theories. For behaviorism, as we have seen, thinking in all its forms is identical with the sort of processes involved in learning to play golf or to use a typewriter. For the advocate of the organic theory, on the other hand, there is an essential difference between this sort of activity and the sort of thinking which is exemplified, for instance, in the solution of a scientific problem. For him there are two kinds of activity sometimes called knowing, namely, knowing *how* and knowing *about*—knowing how to play tennis, for example, and knowing about the technique of the game. Only the latter is knowing in the strict sense, the former being a set of muscular movements; they are so different that they cannot be identified, as behaviorism assumes they can be.

Posting these differences from the behaviorist as indicative of facts overlooked by him, the advocate of the organic theory proceeds to his own explanation of the activities

¹ Hume, *A Treatise of Human Nature*, Book I, Part I, section 1 (*Hume: Selections*, edited by C. W. Hendel, p. 10).

listed in (b) above. They can be adequately explained, he thinks, only by reference to a conscious subject or self.

In the first place, consciousness, recollection as involving images, and thinking in the sense of learning *about* something—all alike involve such a reference. Consciousness itself is precisely a relation between a subject and the particular experience of which it is aware; it is the relation "being-conscious-of," and this relation involves the subject on one side and some experience on the other. Recollection, likewise, involves this reference; it is simply the reinstatement of past experiences through the medium of images now present to a conscious subject—the recollection of yesterday's picnic, for example, is the presentation *through* images to a conscious subject of yesterday's experiences. And, finally, thinking in the sense of interpreting meanings can be explained only as the unique activity of some conscious subject whereby the connections (implicative or causal), among things are apprehended. In sum, consciousness is the subject's awareness of experiences; recollection is the subject's picturing or imaging past experiences as if present; and thinking or judging is the subject's apprehension and interpretation of meanings within meaning-situations.

And the same holds in principle of habit, perception, and emotion. In the formation of habits, there is always an element of choice which is potent in the process and which is the act of some conscious subject; if such an element of choice be denied, then habitual activity can hardly be distinguished from purely instinctive behavior which, everyone admits, is in important respects different. Again, in perception, that is, the act of perceiving something, conscious subject is involved; there must be a perceiver for which the present experience of the color of the orange, for example, is linked significantly with former experiences of smell and feel and taste, and such a perceiver must "see" that these radically different experiences are in this instance in some sense one—in the sense, namely, of belonging to or

of indicating the same object. Finally, emotions, though doubtless integrations of "pattern-reactions," are also experiences of some conscious subject; for emotions always involve some sort of appreciation of, some longing or foreboding in respect of, the situation which gives rise to such pattern-reactions, and this dramatization of the situation can only be staged by some conscious subject. In sum: habit is the result of the subject's choice of alternatives; perception is the subject's linkage of discreet experiences into meaningful wholes; and emotion is the subject's dramatization of peculiar situations.

(e) The conflict between behaviorism and the organic theory of mind is, thus, sharply drawn. The former would dispense with any reference to "mentalist" features, which it regards as mythological and "metaphysical," and would explain mind wholly in terms of the neuro-muscular system. The latter, while admitting that such a description is acceptable if taken as a description of merely one side of those activities that fall within the domain of mind, goes on to urge that an adequate description necessitates reference to a conscious subject; for apart from such reference the unity of experiences, which is mind, is left unexplained and the plain demands both of direct inspection and indirect inference are ignored.

With reference to the controversy, the following observations are pertinent:

(1) Is introspection to be allowed as a scientific method of observation of mental phenomena? Upon the answer to this question largely turns the answer to the further question about the existence of consciousness and mental imagery. Only by introspection is it possible to discern such phenomena. If, then, introspection is denied the status of a trustworthy method of observation, as the behaviorist urges it should be, no basis is left for the contention that such phenomena exist. But if this status is denied it, what method is to be substituted for it? There is serious doubt

whether it can be escaped: even the behaviorist finds it necessary to appeal to "verbal reports" by his subjects, and such reports one must suspect are introspective in origin.

(2) Is the activity of thinking exactly on a par with such activities as those involved in learning games and acquiring skill? If not, the case of behaviorism is decidedly weakened, since the apparent success of its explanation of this very important mental function rests everywhere on the assumption that they are identical. And the *prima facie* evidence at least lies against the assumption. For it is at least apparently true that some thinking takes place without reference to practical application; and that, though language of some sort is commonly the vehicle of thinking, talking and thinking are (fortunately or unfortunately) not identical. The same question may legitimately be raised with reference to all of the other mental processes (perception, recollection, emotion) mentioned above; and the same remarks, *mutatis mutandis*, apply.

(3) What, concretely, is the nature of that "unity" upon which the organic theory of mind insists? This question points to one of the chief weaknesses of that theory. The unity advocated by behaviorism is at least intelligible: the structure of the neuro-muscular system we know in part, and when we speak of "integration" within it we can understand, at least in a general way, what is meant. But the "conscious subject" of the organic theory is a vague notion, and there is some difficulty in understanding how it makes intelligible the unity of those experiences whose unity it is invoked to explain. Can it be given a definite description, and can its function be rendered intelligible? But the observation made above in connection with a similar question about the vitalistic view of life is pertinent here: it is the main tenet of the organic theory that the unity of experiences, which mind is, cannot be adequately described in bodily terms and the advocate of the theory would, consequently, stultify himself if he undertook so to describe it. The as-

sumption that, unless he does so describe it, his conception of unity remains subjective, metaphysical, and unintelligible is equivalent to assuming that the behavioristic description is the only intelligible one—which, of course, is precisely the point at issue in the controversy.

§ 3. *Mind and body*

For any theory of mind which undertakes to describe it exclusively in bodily terms there is, of course, no problem of its relation to body. The two are identical in essence, the difference between them being merely the difference between two levels of organization of the same material. For any theory which admits an essential difference between mind and body, however, the problem of their relation is an inescapable and very important one. The solution of this problem is bound up with the solution of the problem discussed in the preceding section, in the sense that how one conceives the relation between body and mind depends on how one conceives the nature and function of mind, and *vice versa*. But for purposes of clarity of discussion the two are here separated; and we turn now to the mind-body problem. Throughout, the assumption is that there is some essential difference between mind and body—otherwise, of course, the whole section loses its point.

(a) Whatever may be the final solution of the problem concerning the mind-body relation, it is evident from the first that the relation is a very close and intimate one. Facts which cannot be denied seem unmistakably to show this.

In the first place, there are many facts of everyday occurrence which prove that mind and body are intimately bound up with each other. A blow on the head or an application of ether or chloroform removes temporarily at least all traces of conscious experiences. One's general physical condition affects one's mental outlook; and, on the other side, prolonged mental effort shows its traces in a tired body.

Fear is accompanied by a palpitating heart and quaking limbs, anger by clenched fists and set teeth, while laughter usually goes with joy and tears with grief. To such a list the student will have no difficulty in adding at will.

More subtle facts experimentally determined reveal the same intimate connection. It has been experimentally observed, for example, that the blood-pressure both in the forearm and in the brain perceptibly changes from the normal when one is doing mental work, such as multiplying one number by another, or is laboring under slight emotional excitement, such as embarrassment or chagrin. The effects of certain drugs (cocaine, opium, etc.) are correlated with characteristic changes in consciousness. The result of these experiments and others of the kind "is to bring about the conviction that body and mind are in most intimate connection, and that the intercourse of the two is not occasional, but is constant. . . . it is now generally accepted that the body reflects every shade of psychic operation; that in all manner of mental action there is some physical expression. 'All consciousness is motor' is the brief statement of this important truth; every mental state somehow runs over into a corresponding bodily state."¹

The facts of anatomy point to the same truth. A disease of the brain affects the mental life. Various types of mental experience are now known to be localized in different parts of the brain, visual experience in the occipital lobe, auditory experience in the auditory center, olfactory experience in still a different region, and so forth; and if a given part of the brain is diseased or seriously injured, the mental experiences connected with that part are seriously interfered with if not eliminated entirely. Furthermore, comparative anatomy conclusively shows that mind grows in capacity as the nervous system grows in complexity from the lower to the higher levels of organic forms. Thus, for example, the mind

¹ G. M. Stratton, *Experimental Psychology and Culture*, pp. 268-269.

of the horse or dog is less capable than is the mind of man, and the nervous system—particularly the brain structure—of the lower forms is much less complex than is that of the higher. Development in nervous systems runs concomitantly with the development of minds.

The preceding observations seem to indicate that mind and body are intimately bound up with each other; such an intimate connection seems proved by the facts of common-sense and scientific observation and by inferences based upon the results of anatomical study. Can this connection between the two be further described? Several theories have been advanced in answer to this question. We shall consider in some detail two of the main ones, namely, parallelism and interactionism; the more important variations of these basal views together with a more recent theory we shall make note of in the final remarks of this section.¹

(b) The interaction theory of the relation between mind and body was advocated in a rather crude form by Descartes.² As we have seen in our historical survey of the various views of mind, Descartes accepted the traditional conception of mind as a unique substance; and he gave it a definite location in the pineal gland of the brain at which point it was supposed to exert an influence upon the body and, in turn, to be affected by bodily processes. Since Descartes, the theory has been re-stated in more subtle terminology, but it has remained in principle the same. Our present purpose is to understand the general nature of the theory without reference to any individual thinker's statement of it, and to note some objections that lie against it.

The main thesis of the interaction theory is that the relation obtaining between mind and body is a causal relation.

¹ The reader who is interested in going into the matter more fully should consult R. W. Sellars, *The Essentials of Philosophy*, Chapters XX-XXII; Fullerton, *Introduction to Philosophy*, Chapter IX; F. Paulsen, *Introduction to Philosophy*, pp. 74-111; and J. B. Pratt, *Matter and Spirit*.

² See his *Passions of the Soul*, XXXIV (*Descartes: Selections*, edited by R. M. Eaton, p. 374).

Bodily processes are at times supposed to cause mental experiences, such as perception or feeling, and at times to be caused by them. Thus, according to the theory, the nervous processes in the visual center of the brain are the cause of my perception of a light; and, on the other side, my desire to acquaint myself with the contents of a book is the cause of the contraction of muscles involved in my walking across the room to the table on which the book is lying. In short, there is a direct interaction between bodily processes and mental experiences, that is, the mind-body relation is a causal relation.

Despite the fact that most of our commonplace observations seem to justify the view of interactionism, the theory is not without its difficulties. Two of the most weighty of these we shall here set down.

INCONCEIVABILITY. The first objection is that, as understood by the interactionist, mind and body are so utterly different it is wholly inconceivable how a causal relation could possibly exist between them. We can fairly readily comprehend how the activity of brain cells can stand in a causal relation to the contraction of muscles; that is, we can understand a causal connection between one bodily process and another. And we can also understand how a desire for food might cause the appearance within mind of an image of the food that will satisfy this desire; that is, we can make intelligible a causal relation between one mental experience and another. But how a nervous process in the brain could cause a mental experience, or *vice versa*, is beyond our powers of comprehension. It is much as if we were asked to comprehend how an image of fire could set the coal on the hearth burning. The two terms, body and mind, are so utterly different that they stare vacantly at each other and refuse to link themselves causally. A causal relation between body and mind is inconceivable—such is the first objection to the interaction theory.

VIOLATION OF THE LAW OF CONSERVATION OF ENERGY. We find that material objects are capable of doing work; thus, coal is capable of converting water into steam, a storage battery is capable of propelling a car through the streets, and so forth. This capacity for doing work is called in physics "energy." The work actually done by an object is "kinetic energy"; while the power to do work is "potential energy". The energy of a storage battery which is inactive is its potential energy; the energy of the same battery expended in driving the motor is kinetic energy. Now it is a general assumption of the physical sciences that the total amount of energy in the universe as a whole, both potential and kinetic, is constant. In the many transformations of energy that take place within the world energy is neither created nor destroyed; potential energy may be changed into kinetic, or *vice versa*, but the total amount of energy remains constant. Thus, when fire changes water into steam and thereby heats buildings or drives machinery, all that happens is that potential energy is transformed into kinetic energy; no energy is produced, nor is any destroyed. And the same is true of the universe at large: whatever transformations of energy may take place there, the total amount of energy remains constant. This principle is known in the physical sciences as the law or principle of *the conservation of energy*.

Now the objection is raised against the interaction theory of the mind-body relation, that it violates the principle of the conservation of energy. If the interaction theory were true, so the objection runs, and an act of volition, say, caused me to strike with my hand, then there would happen in the physical environment an event—namely, the contraction of muscles in my arm and the consequent movement of my arm through space—for, which there is no compensatory transformation of energy, and so there would be added to the physical order a certain amount of energy. Or, on the other hand, if a light wave sets going certain chemical changes in

the retina of my eye which are transmitted by means of the optic nerve to the visual center of the brain where the energy terminates in the activity of certain neurons which, in turn, cause a mental experience—namely, my seeing or perceiving the light,—then a physical process ends in mental activity, and so a certain amount of physical energy is apparently lost from the physical order. The hypotheses of the causal relation between mind and body is thus apparently in conflict with one of the fundamental principles of the physical sciences and therefore, according to the objection, must be surrendered.

(c) The parallelistic theory of the mind-body relation is associated among classical philosophers chiefly with the names of Spinoza and Leibnitz.¹ In one form or another the theory has been held even down to our own day.

The parallelist denies that there is any causal connection between mind and body. He admits that every mental experience has its corresponding bodily activity, or, as it has been expressed, every psychosis (mental process or experience) has its neurosis (corresponding bodily or nervous process). But he insists that the bodily and the mental series are not causally connected; they always happen together in a constant order, visual experiences being accompanied by nervous activity in the visual center of the brain, auditory experiences being always accompanied by nervous activity in the auditory center of the brain, and so forth, but neither is the cause or the effect of the other. They are causally

¹ Spinoza's statement of the theory is found in his famous work, *Ethics*. The essence of his view is contained in the two following propositions from that work: "The order and connection of ideas is the same as the order and connection of things," Part II, Proposition VII; and "Even as thoughts and the ideas of things are arranged and associated in the mind, so are the modifications of the body or the images of things precisely in the same way arranged and associated in the body," Part V, Proposition I. For Leibnitz, "bodies act as if there were no souls, and souls act as if there were no bodies; and yet both act as though the one influenced the other" (*Monadology*, paragraph 81—a translation of this work by Leibnitz may be conveniently found in Rand, *Modern Classical Philosophers*, pp. 199 ff.).

independent of each other, though always and necessarily parallel. Professor Paulsen, a recent advocate of the theory of parallelism, explains it very interestingly as follows: "Let us imagine with Leibnitz the skull of an animal or man to be as large as a mill. Suppose one could walk around in it and observe the processes in the brain as one can observe the movements of the machinery and the cogging of the wheels in the mill. What brain-processes would the observer expect to see? . . . The adherent of the parallelistic theory must evidently expect the following. The physical processes in the brain form a closed causal nexus. There is no member that is not physical in its nature. One would see as little of psychical processes, of ideas and thoughts, as in the movements of the mill. A man crosses the street. Suddenly his name is called; he turns around and walks toward the person who called him. The omniscient physiologist would explain the whole process in a purely mechanical way. He would show how the physical effect of the sound-waves upon the organ of hearing excited a definite nervous process in the auditory nerve, how this process was conducted to the central organ, how it released certain physical processes there which finally led to the innervation of certain groups of motor nerves, the ultimate result of which was the turning and movement of the body in the direction of the sound-waves. All these occurrences together combine into an unbroken chain of physical processes. Alongside of this, another process occurred of which the physiologist as such sees nothing and needs to know nothing, with which, however, he is acquainted as a thinking being who interprets his percepts; there are auditory sensations, which aroused ideas and feelings. The person called heard his name; he turned around in order to discover who called him and why he was addressed; he perceived an old acquaintance and went to greet him. These occurrences accompany the physical series without interfering with it; perception and presentation

are not members of the physical causal series."¹ For the parallelist, then, mental experiences are causally connected with mental experiences, and bodily processes are causally connected with bodily processes; but there is no causal connection between the two systems. The two series are parallel, but causally independent of each other.

Among the facts that tend to support the parallelist's view of the mind-body relation are the following: reflex acts like jerking the finger away from a hot object or dodging when a swiftly moving object directly approaches the face; habitual acts, such as walking, talking, etc.; reveries or day-dreams; long trains of continuous reflection; and the facts connected with certain more or less abnormal types such as talking in one's sleep, hypnotism, and the like. Such facts may, apparently, be accounted for on the assumption of parallelism that causal connections exist only among mental states, on the one side, or among bodily processes, on the other. However, there are important objections to the theory that have from time to time been advanced against the acceptance of it. Three of the more weighty of these we may note.

SUDDEN EXPERIENCES. Suppose one is suddenly awakened from a revery or deep concentration on a problem by the slamming of a door or a clap of thunder. Such an occurrence the parallelistic theory finds difficult to explain. The only explanation of the perception of the sound which it could offer from the mental side would have to refer it to previous experiences, since mental experiences are causally connected only with other experiences. But in this particular case, there seems nothing in the previous experiences that could in any justifiable sense be said to be the cause of the interruption, by this particular sound, of that which up to its appearance was going on in the mind; and for the reason that it is an *interruption*. Taken by itself the train of ex-

¹ Paulsen, *Introduction to Philosophy*, English translation, 1907, p. 84.

periences within the reverie or the series of judgments bearing upon the problem in hand could not be responsible for the disturbing noise; the noise is an interloper. How then account for it? Before such a question the parallelistic theory seems to be brought to a sharp stop. Sudden and irrelevant experiences stand decidedly in its way. This is the first objection to it.

MAKES MIND USELESS IN BIOLOGICAL EVOLUTION. One of the basal principles in the theory of organic evolution is that whatever survives in the struggle for existence must be of some service in the struggle, that its survival is guaranteed only by its utility. If the theory of parallelism were true, however, mind would seem to be of no use in the development of life. For, by hypothesis, it could exert no determining influence upon bodily conduct and therefore could have no efficient contact with the appearance and development of bodily characteristics. It is, therefore, difficult to understand why, on the basis of the parallelistic theory of the mind-body relation, the continued existence, to say nothing of the increasing importance, of mind in the development of organic forms can be explained. Mind, as parallelism conceives it, seems to be biologically useless. This is the second objection.

PARALLELISM IMPLIES PANPSYCHISM. The third objection to the parallelistic hypothesis is that, if it be true, then we are logically driven to the conclusion that mind is present wherever there is bodily activity, whether this activity be in organic forms or in inorganic compounds. If every psychosis has its neurosis, if, that is, every mental experience has its corresponding bodily process, then where are we to stop? Has digestion, for example, its corresponding experience? If not, why not? Digestion certainly is a bodily process, and is intimately connected with those other bodily processes that are known to be accompanied by parallel mental processes. And when once we start on this road, so the objection runs, there is no stopping-place short of the general

conclusion that all physical processes, organic and inorganic alike, have their parallel mental processes. And so we are driven to the amazing inference that mind is spread out everywhere in the universe parallel with all types of material change and activity; that not only the human body has its experiences, but all bodies, including "the choir of heaven and the furniture of the earth," have theirs. This is the view generally known as panpsychism—"mind everywhere." But this view is absurd. Hence the parallelistic theory of the mind-body relation is absurd and must be given up. This is the third objection to the theory.

(d) What shall we say by way of estimating the value of these conflicting views of the mind-body relation? Let us briefly note some points pertinent to the question.

(1) The theory of interactionism has *prima facie* evidence in its favor to the extent that it appears to harmonize with what we seem to know most directly concerning the mind-body relation. Mind and body do seem to be causally connected with each other, though, of course, it is still possible that this "seeming" is an appearance only and not reality. But the objections raised against the interactionist's view do not appear to be wholly convincing, as the following considerations may serve to indicate.

INCONCEIVABILITY. So far as the objection that a causal relation between body and mind is inconceivable is concerned, three points may be noted. In the first place, to say that an hypothesis is inconceivable is to say nothing serious against it, unless it can be shown to be inconceivable in at least one of the following meanings: lacking contact with the main body of human knowledge and, so, arbitrary; or, of such a nature that the affirmation of it involves a greater contradiction of the main body of human knowledge than does its denial; or, finally, such that it is self-contradictory. And the hypothesis of interactionism is inconceivable in neither of these three meanings. In the second place, the assumption upon which the objection rests ap-

appears to be that there cannot possibly exist a causal relation between a nervous process and a mental experience; but this is precisely the point at issue and cannot logically be assumed. Finally, there is *prima facie* no greater mystery or unintelligibility in a causal nexus between a nervous process and a mental experience than there is in a causal nexus between, let us say, a purely physical process such as the movement of a light-wave and a neurological process in the optic nerve or the retina—a causal nexus that is admitted by all as a fact.

CONSERVATION OF ENERGY. In connection with the objection to interactionism based upon the principle of the conservation of energy and the supposed conflict with it, three points are of importance. The first is the consideration that, when two objects are causally connected, there is not necessarily a transference of energy between them. As we have already seen¹ in our discussion above of the nature of the causal nexus, two things are causally connected when they are in some sense necessarily dependent upon each other; transference of energy from one to the other is not at all necessarily involved in their causal conjunction. Hence, in so far as this objection to interactionism assumes that every causal nexus involves a transference of energy, it would appear to rest upon a false assumption. The second point to be noted is that the possibility of transformation of energy is not excluded in the mind-body relation. It is still conceivable that when a nervous process is the cause of a mental experience—as, for example, when the activity of the neurons in the visual center of the brain causes a visual perception of an object—there is a transformation of energy rather than a destruction of it, just as there is when the energy of a light-wave is transformed into the energy of a chemical process in the retina and a nervous process in the optic nerve. If this were the case, then there would be no violation of the principle of the conservation of energy

¹ Above, Chapter IV, section 3.

in the mind-body relation.¹ The final point to be noticed is that the principle of the conservation of energy is a hypothesis of the physical sciences and has been formulated without any reference to mind. It is supposed to be expressive of what is true only of *physical systems* of energy, and has no obvious reference to those systems—if there be such—which are not wholly physical in nature. And it is conceivable at least that the mind-body is precisely such a system.

(2) We turn now to the objections raised against the parallelistic view of the mind-body relation and ask concerning their significance. Are they sufficient to make the theory untenable, or may the parallelist satisfactorily reply to them?

☉ **SUDDEN EXPERIENCES.** At first glance, the objection based upon the undoubted occurrence of sudden perceptions in the flow of experiences, as when the sound of a bell interrupts our meditation, is a formidable one for the parallelist. How account for the mental experience of hearing the bell? It cannot be caused by the experiences into which it unexpectedly comes; it follows upon any sort of experience whatever, and bears no known causal connection to the experiences upon which it does follow. The only way out of this difficulty left open to the parallelist is to say that the occurrence of the perception is caused by psychical processes unknown to the observer. As Professor Paulsen puts it: "The movements which proceed from the bell have as their sole effects nervous excitations and brain states. Sensation, on the other hand, is the effect of the inner processes accompanying these vibrations. . . . Processes which are un-

¹ This interpretation of the mind-body relation, it should be noted, would imply that mind and body are not so sharply sundered as many statements of the interaction theory would seem to suppose. For the implication of such an interpretation would appear to be that what we here call bodily processes on the one hand, and mental experiences on the other, are in point of fact, like "kinetic" and "potential" physical energy, only two forms of one and the same reality—as Leibnitz long ago supposed.

known to us, but whose physical equivalents are physical or chemical processes, are the causes of these psychological states."¹ Such an answer, however, is unsatisfactory for two reasons: it explains a fairly definite situation within our experience in terms of processes that are unknown, and apparently unknowable; and it assumes that every bodily process has its accompanying mental experience. To explain the known in terms of the unknown is never justifiable if a simpler explanation, that is, one involving less appeal to the imagination, is logically tenable. The assumption involved in this explanation is in principle identical with panpsychism, which we will consider below.

THE OBJECTION THAT PARALLELISM MAKES MIND USELESS IN ORGANIC EVOLUTION. There does seem to be evidence that mind plays an important rôle in the development of life to the extent that it may be said to exert a determining influence upon the organism's reaction to its environment. The parallelist would have to deny that mind exerts any such influence, and so he is compelled to take issue with apparent facts. To this objection, however, he may reply that the facts are only apparent, that there is no justification for supposing that mind is influential in organic development. And in support of this contention he can point to recent advances in our scientific knowledge of the way in which life develops, the emphasis being placed upon the cellular structure of the body as the chief factor in organic evolution rather than upon mind.² This reply, however, raises an issue of fundamental importance, the issue, namely, which is in debate between the mechanist and the vitalist.³ And until this issue is settled, neither the parallelist nor his critic can,

¹ Paulsen, *Introduction to Philosophy*, p. 91.

² For a general survey of the material relevant here the student should consult the articles on evolution in the encyclopædias and the following books: Thomson and Geddes, *Evolution*, and Moore, B., *The Origin and Nature of Life*. See, also, the preceding chapter.

³ See the third section of the preceding chapter.

on the point here under consideration, with assurance be deemed correct in his position.

PARALLELISM AS INVOLVING PANPSYCHISM. This objection rests upon two theses: that parallelism does logically involve panpsychism, and that panpsychism is necessarily absurd. The first thesis seems true; at least it is true unless one stops short at some point and arbitrarily says that beyond this point mind is not found; if some bodily processes are necessarily accompanied by experiences, why not all? The second thesis, however, is not obviously true. Our prejudices, to be sure, run counter to the panpsychist view of the world. We are not in the habit of thinking that all bodily processes, inorganic as well as organic, are accompanied by mental processes, that all bodies have "souls"; and we are prejudiced against thinking in this fashion. But our prejudice needs to be justified before we discard the panpsychist view as absurd. So the parallelist may here reply to his critic by simply asking him to show that panpsychism is an absurd view of the world and by calling his attention to many considerations that may be advanced in support of it.¹

Neither interactionism nor parallelism is free from difficulties. On the whole, however, it would seem that of the two theories interactionism is the simpler hypothesis and involves fewer difficulties. The most weighty objection to parallelism is that it seems to involve us in a world-view which is at least questionable, namely, panpsychism, and it leaves unanswered the question why there should be that invariable concomitance between bodily processes and mental experiences which it posits.

(e) Many thinkers have been so impressed by the difficulties confronting the interaction and parallelistic theories

¹ This is precisely what Professor Paulsen does in his discussion of the matter, *Introduction to Philosophy*, pp. 87-111, which should be read in its entirety. While what is there said is not convincing, it is at least suggestive and provocative of thought.

that they are convinced neither view can be accepted. They have, therefore, sought for other explanations. Some of these other views must at least be mentioned in conclusion.

Two of the older views which have been developed as ways of escape from the difficulties of the general theories of parallelism and interactionism are: the double-aspect theory, and epiphenomenalism. The *double-aspect* theory, which is in fact a type of parallelism, holds that both mind and body are only two sides of the same reality, just as the concave and convex sides of a piece of curved glass are two sides of the one object. Mind and body, then, are in a sense identical—they are faces of an identical thing, the inner and outer surfaces of it, so to speak. Mind and body “constitute one single process, observable in two ways”; they are, as it were, the same thing “said in two languages.” According to *epiphenomenalism* there is a causal relation between mind and body, but it holds only in one direction; mind is an off-shoot of brain activity, and so in a sense may be said to be caused by it, but mental processes cannot function as causes in relation to brain processes. Mind is an *epi*-phenomenon—a phenomenon, that is, which is of secondary importance only. It is produced by the brain, a halo dancing above the brain cells as Bergson poetically puts it; but it is incapable of acting upon the brain in any causal manner. It is not difficult to show that these two theories are only variations of the two theories above considered, and that they do not carry any greater conviction than that which attaches to either parallelism or interactionism. They are, however, historically at least, important variations.¹

¹ R. W. Sellars, *The Essentials of Philosophy*, Chapter XXII, gives an elementary account of them with some criticism. J. B. Pratt, *Matter and Spirit*, Lectures I-IV, presents a spirited discussion and a vigorous criticism of the whole problem. A more advanced survey will be found in W. McDougall, *Body and Mind*, and C. A. Strong, *Why the Mind Has a Body*. This last book contains a very valuable, though for the beginner not easy, criticism of views.

In quite recent discussion another point of view has been suggested which, it is supposed, promises to put the mind-body problem in a somewhat different light. This is the theory of *emergence*. Its main thesis is that the mind "emerges" out of brain-organization, much as water "emerges" out of H_2O . The fundamental term to be defined here is, of course, *emergence*. What precisely is meant by it? It means the appearance in the evolutionary process of something "new," something which could not be called the "resultant" of the elements through whose combination or organization it arises. To illustrate: "When carbon having certain properties combines with sulphur having other properties there is formed, not a mere mixture, but a new compound, some of the properties of which are quite different from those of either component." Now the unique properties of this new compound, that is, the qualities of the carbon bisulphide, which differ from the qualities possessed either by the carbon taken alone or by the sulphur taken alone, are "emergents" from the combination of the two substances. These qualities are "new" and could not have been predicted in detail before the carbon and the sulphur were combined; in this respect they are different, for example, from the weight of the new compound, which could be calculated simply by adding the weights of the components. The weight of the new compound, thus, is not an "emergent," it is rather what is called a "resultant," of the combination of the two substances. A "resultant" is that which is predictable on the basis of the nature of the components. An "emergent," on the other hand, is unpredictable before the combination takes place and is different from any of the qualities possessed by the separate elements that enter into the combination. The "emergence" of mind from bodily organization means, then, that mind arises out of bodily organization, but is nevertheless something new or unique; it grows on, or out of, brain states; but it is something added to the brain states in the course of the progres-

sive organization of matter. The mind is not identical with body, nor is it causally connected or parallel with bodily processes as something fundamentally different and sundered from them. Mind rather "emerges" in the course of biological evolution; the mind-body relation is definable in terms of emergence. Some are convinced that this new conception at least points the direction in which is to be found a satisfactory and final solution of the vexed problem of the mind-body relation.¹

¹ See the article by G. T. W. Patrick, "The Emergent Theory of Mind," *The Journal of Philosophy*, 1922, Vol. XIX, No. 26. The general meaning and significance of the notion of emergence is discussed at length by C. Lloyd Morgan in his *Emergent Evolution*, from which (p. 3) the above quotation is taken. See the discussion of emergent evolution in the preceding chapter, section 4 (b).

CHAPTER XI

SOCIETY

In our discussion of mind hitherto we have proceeded as if each individual mind were a self-contained entity which can be adequately described without reference to any other mind. But we know that this is not the case. Every mind exists in relation to other minds, and this relation is partly at least determinative of its own nature. Language, customs, traditional beliefs and points of view—these enter largely into the making of the individual mind, they constitute the “climate of opinion” which is an essential part of its nature, and they spring from that order which is constituted by the inter-functioning of individual minds. This order we call the social order or, simply, society. Society, thus, is the category which is of primary concern to the social sciences.

§ 1. *The category of Society: historical*

(a) It was formerly supposed by historians of society that primitive man lived in a state of isolation from, and independence of, his fellows, each individual being a law unto himself with his interests limited exclusively to his own immediate concerns. But it is now known that this is a mistake and that the truth is exactly the opposite. While there is much still uncertain concerning primitive folkways and manners, one fundamental feature of primitive society, namely its “group” character, stands out clearly and unmistakably. Recent historical and anthropological investigations have shown beyond question that the life of primitive man is a group-life, that the individual in primitive society

derives both his rights and his obligations from membership within the group. Let us notice briefly some of the outstanding characteristics of this primitive organization.

The unit, of course, is not the isolated and self-centered individual, but the group and apparently the kinship group. This is a group of persons who think of themselves as having descended from a common ancestor. In some cases the ancestor is believed to be an animal, as in the instances of the North American Indians, of certain African and Australian tribes, and perhaps of the early Semites. In other cases the common ancestor is supposed to be some hero or even a god. But in any event, whether the group ancestor be thought of as animal, man, or god, the assumption on the part of the members of the group is the same, namely, that they are all of one common stock and one blood circulates in them all. There are other types of groups, such as the household or family group in the narrower meaning; but the kinship group is historically the most important type.

One of the main features of the early group is its feeling of solidarity. Bound together by ties of blood, as they supposed themselves to be, the individuals composing the primitive group thought of themselves only in terms of the group to which they belonged; when one suffered all suffered, when one was injured all felt the wrong and were anxious to avenge it. "The members of one kindred looked on themselves as one living whole, a single animated mass of blood, flesh, and bones, of which no member could be touched without all the members suffering. . . . In a case of homicide Arabian tribesmen . . . say 'Our blood has been spilt.'" ¹ This sense of solidarity of the group in primitive social organization is much stronger than the feeling of family ties in civilized communities. Speaking of clanship among the Kafirs, Dudley Kidd says: "The sense of solidarity of the

¹ W. R. Smith, *The Religion of the Semites*, 2nd ed., p. 274.

family in Europe is thin and feeble compared to the full-blooded sense of corporate union of the Kafir clan.”¹ And this is true generally of primitive peoples; everywhere the group is the unit, and each individual within the group regards himself as bound by inescapable ties to all other members of his group.

Nor must it be imagined that the individual desired to escape these ties. On the contrary, he could not think of himself as existing apart from them; outside of the group into which he is born the individual becomes an outcast, an outlaw in fact as well as in name. The *natural* condition of the individual is to be within and a part of such a group; to exist within it is not a hardship but a privilege. “The striking thing about this unity of the clan is that it was not a thought-out plan imposed from without by legislation on an unwilling people, but it was a *felt-out* plan which arose spontaneously along the line of least resistance. If one member of the clan suffered, all the members suffered, not in sentimental phraseology, but in real fact.”²

Whatever rights may belong to the individual among primitive peoples belong to him by virtue of his membership within a group. Generally speaking, the primitive group was communistic in the possession of property, and the individual could be said to own property only as a member of the group. “The land belonged to the clan, and the clan was settled upon the land. A man was thus not a member of the clan, because he lived upon, or even owned, the land; but he lived upon the land, and had interests in it, because he was a member of the clan.”³ His rights, too, whatever rights he has, are determined by his membership within the group. “Justice is a privilege which falls to a man as belonging to some group—not otherwise. The mem-

¹ *Savage Childhood* (1906), p. 74.

² Dudley Kidd, *op. cit.*

³ Hearn, *The Aryan Household*, p. 212. Quoted by Dewey and Tufts, *Ethics*, revised edition, p. 22.

ber of the clan or the household or the village community has a claim, but the stranger has no standing. He may be treated kindly, as a guest, but he cannot demand 'justice' at the hands of any group but his own."¹ The man without a clan or group has no rights. "In primitive society the exclusion of a man from his kinsfolk means that he is delivered over to the first comer absolutely without protection."² In short, primitive man is an individual only in so far as he is a member of the group; apart from the group he is as a beast of the field with absolutely no claims upon his fellows. Whatever rights he has belong to him by virtue of his membership within the group. The outcast is the outlaw.

Another characteristic of early group-life is that of collective responsibility. The group as a whole is held responsible for the acts of its members when such acts concern any member or members of another group; and the group as a whole holds itself responsible for the avenging of any injury done to one of its own members. Responsibility is of the group rather than of the individual. Survivals of this principle at higher levels are evident in "blood-feuds" within certain communities and in the dealings of modern states with each other and with savage tribes.³ But the sense of solidarity attaching to primitive group organization causes

¹ Dewey and Tufts, *Ethics*, revised edition, p. 25.

² Hobhouse, *Morals in Evolution*, Vol. I, p. 90. Compare the story of Cain, the murderer of his brother, Abel. Jehovah punished Cain for his deed by separating him from his group and making of him a "fugitive and vagabond" in the earth. "And Cain said unto Jehovah, My punishment is greater than I can bear. Behold, thou hast driven me out this day from the face of the earth; and from thy face shall I be hid; and I shall be a fugitive and a vagabond in the earth; and it shall come to pass, that every one that findeth me shall slay me" (*Genesis*, Chapter IV, verses 13, 14).

³ "If some member of a savage tribe assaults a citizen of one of the civilized nations, the injured party invokes the help of his government. A demand is usually made that the guilty party be delivered up for trial and punishment. If he is not forthcoming a 'punitive expedition' is organized against the whole tribe; guilty and innocent suffer alike. Or in lieu of exterminating the offending tribe, in part or completely, the nation of the injured man may accept an indemnity in money or land from the offender's tribe" (Dewey and Tufts, *Ethics*, revised edition, p. 26).

this feeling of collective responsibility to be very much more intense among primitive groups than among modern nations.

Primitive man looks upon himself as a member of a group bound together by ties of blood. The group is largely communistic in the possession of property, and it is membership within the group which gives to the individual whatever rights are his; apart from the group the individual is an outlaw in fact as well as in name. A sense of solidarity, born of the conviction that each member of the group is of the same blood as every other, makes of the group the unit, in a literal sense, of primitive social organization. Competition is between group and group rather than between individual and individual, since responsibility attaches to the group and not to the individual as such. This group-life is not imposed upon primitive man by some external authority; it is a natural and inevitable expression of the line of least resistance in man's social evolution. Man by nature is a social animal: group-life is the flowering of his nature.

(b) In the course of man's social development the primitive groups have been transformed into the larger groups of civilized society known as nations or states. From the numberless small groups of primitive society there have grown through the centuries of human history a relatively few larger groups, the process culminating in the greater nations of the modern era. There are two important characteristics of this development which need to be specially noted.

In the first place, the development is marked, not only by an expansion of the groups numerically, but also by an ever-increasing complexity of organization. The primitive groups are small, varying in size from tens to a few hundreds of persons; social evolution gradually expands the circle of the groups until the great nations with their millions of citizens are brought into being. Now with this increase of numbers within the groups there has taken place concur-

rently an increasing complexity of their internal organization. The early group was simply organized; a relatively few and simple customs and traditions, handed down from father to son, sufficed for the control of its corporate life. But the expansion into the larger groups has been accompanied by an ever-increasing intricacy of internal organization manifested in multiform institutions which are exceedingly complex and, in the greater nations of the modern period, all but defy analysis. The structure of the primitive group is relatively simple; that of the modern state is tremendously intricate.

In the second place, the development is marked by an intensification of individuality, a progressive emphasis on the individual within the group. In the primitive group, as we have noted above, the individual hardly counts; the group is the social (economic, political, moral, religious) unit, and it is only by virtue of his membership in the group that the individual owns property or has caste or possesses rights and privileges or has allegiance with the gods. Apart from the group, in short, the individual is of little or no significance. But in the course of social evolution the individual becomes more and more important, owns property in his right, claims rights and assumes responsibilities as an individual, worships whatever gods please him or none at all. In short, the individual progressively assumes, and is granted, importance and intrinsic worth.

Nor must it be forgotten that these are simply two sides or aspects of one and the same process—the process, namely, of social growth. As the group to which the individual belongs expands in numbers and becomes more intricate in organization, the individual on his side becomes more important in his own right, arrogates a greater degree of initiative, demands for himself further privileges and consequently involves himself in more varied obligations. Or, looked at from the other side, the process is an intensification of in-

dividuality; and as the individual breaks away from the bondage imposed upon him by membership in the primitive group and assumes greater privileges and responsibilities in his own right as a person, the group to which he belongs concomitantly widens in scope and deepens in complexity of structure—its binding solidarity is loosened, but the number and variety of its obligations are multiplied. In short, the development of “personality” in the individual member of the group, his progress towards individualism in the sense of possessing both the desire and the capacity to assume responsibilities and to arrogate rights, is paralleled by an increasing complexity and intricacy in the individual’s social relations, and *vice versa*. The one is an aspect of the other, and the two constitute one causal situation: social evolution happens through enlarging groups of increasingly self-centred and self-assertive individuals.

The agencies historically involved in this development, are, of course, numerous and varied in character. But they all spring from one source, namely, the conflict between what we above (Chapter IX, section 1, sub-section b) called *institutions* and *convictions*. It is because “no man believes, or can believe, exactly what his grandfather believed” that social evolution is inevitable. Any agency in this evolution, therefore, is one which manifests in one form or another this conflict between the traditional and the results of individual reflection and judgment. Such agencies, as we have remarked, are varied. Three are specially important for our present analysis and may be noted.

WORK. The necessity that the human race finds forced upon it to make provisions for its continuance in existence, to supply itself with food and shelter, makes thinking in its turn a necessity. In the primitive forms of occupation, hunting and fishing, alertness is of great importance; mere brute force and physical prowess do not here guarantee success, cunning is also essential. In the later forms of occupation, agriculture and commerce, mental alertness is in-

dispensable. Work, thus, necessitates thought and so is a potent factor in social evolution.¹

CONFLICTS OF INTERESTS. Conflicting interests constitute another important factor in social evolution, since thinking is absolutely necessary to resolve them. Mental alertness, inventiveness, the capacity to guess another's plans or to understand another's point of view—these are essential if one mind is to meet another mind and gain the victory at stake. And this is true whether the conflict is purely mental, as in a business transaction or a difference of belief, or physical, as in battle. "Not to the strong is the battle, nor to the swift is the race"—at least, not always. Strategy is an element of no mean importance. And, of course, in mental conflicts, strategy alone is important.

THE OUTSTANDING INDIVIDUAL. Perhaps the most powerful single factor in social evolution is the outstanding individual, the individual who thinks beyond his fellows and by so doing becomes a marked individual within the group. The great warrior or hunter at the earlier levels of society shapes to a very large extent the outlook of his group and determines its practices; even if he does not wholly transform the institutions of his group by breaking with tradition, he necessarily leaves his mark upon them and they cannot be precisely as of old. At the later levels the prophets, poets, statesmen, philosophers, and scientists, in short, the *thinkers*, largely dig the channels in which future social

¹ It is true that since the modern industrial revolution which has resulted in very great specialization of labor many of the workers have little to do but watch machinery and see that it does the work properly; and thus small demand is made of the worker that he *think*. He threatens to become little more than a machine himself. Two points here, however, are to be noted: this reduction by modern industrial organization of many laborers to mere watchers of machinery constitutes one pressing social problem for the present generation; and, secondly, the more complex industrial organization becomes the more thought is required on the part of somebody. Specialized work has not eliminated the necessity of thought, it has rather emphasized it; but it has placed the necessity upon the shoulders of a few—the managers and planners—and threatens to convert the majority of workers into mere tools.

change is to run. To ask what would have been the condition of society without its great religious and moral reformers, its leading soldiers and statesmen, its poets and painters and sculptors, its inventors and captains of industry, or its lovers of truth—to ask such a question is, of course, to ask a question that cannot possibly be answered. But the question may serve to emphasize the indispensable function performed by these exceptional individuals in that transformation of institutions and beliefs which we call social evolution. And they are thus powerful because in them reflection, the dynamo of social change, grows incarnate.¹

(c) This conflict between institutions and convictions within the social order seems to be ineradicable, an essential characteristic of that order. At any rate, it has always characterized it, and still does so; nor is there any reason to suppose that it will ever cease to characterize it, since it is embedded in its structure. And out of it certain pressing problems arise. What is the significance of the conflict, and on which side does the weight of authority lie? Where one or the other must give way, which should it be? Are institutions superior in their claims, or convictions? How far has the individual a right to assert himself against the institutional order? Should the institutional be permitted to stand against individual conviction? Or may both stand together? Are both "useful" to society, and are both essential to "progress"?

These several questions are merely different expressions of one basal problem, namely, the problem of the relation between society and the individual. On further analysis, this problem resolves itself into three special ones. The first concerns the rights of the individual in respect of his

¹ The importance of the outstanding individual here emphasized is minimized by a certain interpretation of history to which we shall recur in the following section. For an interesting discussion of the point and in general support of the position above indicated, see W. James, *The Will to Believe*, essays on "Great Men and Their Environment" and "The Importance of Individuals."

own convictions, his intellectual rights; it is what is commonly called the problem of freedom of thought and expression. The second concerns the rights of the individual in respect of his property and conduct, his economic and political rights; this is the problem of sovereignty, and the individual's relation to it. The third concerns the status of society in respect of the individual, and *vice versa*; this may be called the problem of the group-mind and its relation to the minds of the several individuals that compose the membership of the group.

The first of these problems we have already considered at some length in another context;¹ in the present context we need only direct the reader's attention to the fact that discussion of it is discussion of one fundamental feature of social evolution and that, consequently, its solution is of profound practical import. The other two problems remain to be considered here; and we shall begin with the one last mentioned, since it involves considerations which are logically prior to those involved in the other.

§ 2. *Society and the individual: the group-mind*

(a) There are two contrasting views of the relation between society and the individual which we first need to note. On the one side, it has been maintained that society is a sort of entity existing independently of individuals and in a real sense of superior worth. Something at least approximating this view is maintained, for example, by Fichte and Hegel,² in their conception of the social order as a concrete embodiment of the *Weltgeist*. On the other side, it

¹ At the end of our analysis of judgment. See above, Chapter VI.

² See Fichte's famous *Addresses to the German Nation* and his popular volume, *The Vocation of Man*; and Hegel's volumes, *Philosophy of Mind*, *Philosophy of Right*, and *Philosophy of History*. Compare: B. Bosanquet, *The Philosophical Theory of the State*; and F. H. Bradley, *Ethical Studies*, Essay V. For criticism of the general view, see: J. Dewey, *German Philosophy and Politics*; and L. T. Hobhouse, *The Metaphysical Theory of the State*.

has been maintained that society is nothing more significant than a name for a group of individuals, who alone are of significance and whose interests are alone basal in the social order. Such a view, in principle at least, is defended by Locke, for whom individuals are by nature "all free, equal, and independent," each being "absolute lord of his own person and possessions, equal to the greatest and subject to nobody," though, driven by inescapable need of security, "he seeks out and is willing to join in society with others."¹ According to the one view, society is something apart from individuals, a sort of super-individual spirit; according to the other, society is simply "the people" who make up its membership.

In its extreme statement, doubtless, neither of these views of society is acceptable. "It is surely a fact that there is nothing called society over and above John Smith, Susan Jones, and other individual persons. Society as something apart from individuals is a pure fiction."² But it is surely a fact, also, that an individual who by nature is "absolute lord of his own person and possessions, equal to the greatest and subject to nobody" is no less a pure fiction. The truth lies somewhere between the extremes: society exists in social beings, and, as Aristotle long since observed, the individual by nature is a social animal.

Society in the individual, the individual in society—this, then, would seem to be the true state of affairs. Perhaps we can understand it more clearly, if we resolve society into what seems to be its equivalent in the present context, namely, the group-mind.

(b) Every group has its customs and traditions, its beliefs and institutions, its practices and professions. In other words, the group, like the individual, has its ways of think-

¹ For Locke's views, see his *Two Treatises of Government*. Compare: Hobbes, *Leviathan*; and Rousseau, *The Social Contract*. See also Max Nordau, *The Interpretation of History*, Chapter V.

² Dewey and Tufts, *Ethics*, second edition, pp. 357-358.

ing and acting. It is these ways of thinking and acting, adopted and adhered to by the group, which constitute the group-mind. The manners of speech and dress, the moral and religious and economic and political customs and traditions, the scientific and artistic convictions and conventions, which any group *as a group* entertains—these constitute the mind of that group.

Now, such customs and traditions and beliefs and practices and convictions cannot be attributed to any individual mind or to any combination of individual minds. No biography and no series of biographies can adequately account for them. They constitute the “climate of opinion” into which the individual is born; they antedate and outlive him. They belong to what the Germans love to call the *Zeitgeist*. They are integral to the social order. They are society in the only meaning in which society can be said to be super-individual.

But, taken in this sense, society certainly cannot be said to exist apart from individual minds. It is true, indeed, that the group-mind as here conceived is in a sense independent of individual minds—in the sense, namely, that it is not identical with any isolated individual mind or with any aggregation of individual minds. But neither does it exist aloft by itself, without connection or contact with such minds. On the contrary, it is precisely the result of the *interpenetration* of the minds that compose the group. Let us take in illustration some science, say physics: it does not exist in any individual mind or in any combination of individual minds, since no individual mind and no combination of individual minds entertain, or can entertain, the body of knowledge which the science is; and yet it is nothing more than a product of a relatively few individual minds interpenetrating, since it has been created in the course of the centuries by different minds each working upon, modifying, rejecting, correcting, adding to the results achieved by the others. And this appears to be true, in principle but not in

detail of course, of all customs and traditions, all institutions and social practices which constitute the group-mind. The group-mind, then, is either the interconnection of individual minds, their interfunctioning and interpenetration, or it is the body of beliefs and practices (institutions) created and sustained by this; it is, in short, separate individual minds acting or functioning conjointly, and the fruits thereof. And this, it appears, is all the term *society* can legitimately mean.¹ On the basis of such an interpretation, the statement "society in the individual, the individual in society" becomes more definite in meaning. It means, simply, that society is the traditional aspect of the social order created and sustained through the co-operative endeavor of individual minds; and, on the other side, that the individual mind, the biographical mind, flourishes only within those perspectives furnished by the traditions surrounding it. Society and the individual are not separate entities; they are only distinguishable sides of the same ultimate fact, namely, the social order.

(c) If it be granted that this is the true description of the state of affairs, certain important conclusions follow as corollaries. Two of these we may pause to note before passing on. The first concerns the so-called conflict between society and the individual; and the second concerns the causal character of the social order.

(1) The conflict between society and the individual must not be conceived as a conflict between two distinct entities, one of which is *society* and the other of which is *the individual*. So to conceive the problem is to mis-conceive it; such supposed entities are pure abstractions. The conflict must be conceived, rather, as obtaining between *traditions*

¹ I have elsewhere made further comments on the point (*Five Lectures on the Problem of Mind*, Lecture V). Compare Dewey and Tufts, *Ethics*, second edition, Chapter XVI, particularly sections 2 and 3. For a more exhaustive study, see: the literature referred to at the end of the chapter in Dewey and Tufts, *Ethics*; and B. Bosanquet, *The Philosophical Theory of the State*, Chapters IV-VI, and the references there cited.

and *convictions*, between what is commonly accepted in profession or practice by a group and what is accepted in profession or practice by a person. Such a conflict is both genuine and of profound practical importance; it is deeply embedded in the social order, and it is expressive of what must be said to be the main feature of social evolution and change—whether “progressive” or the reverse. Both its genuineness and its practical significance is evidenced, sometimes tragically, by the fate of protestants and martyrs throughout history.¹

(2) The question whether the social order is a teleological order, and if so in what sense, is a question which has been much debated by those interested in what is sometimes called the philosophy of history. Our preceding analysis has a direct bearing on this question, and we now ask what that bearing is.

In the first place, it indicates that there is no justification for the view held by some thinkers that the social order is teleological in the sense that it manifests supra-human purposes in the course of its evolution. ✓ As Nordau says: “Nothing in history justifies the assertion that any higher intelligence is pursuing plans in whose accomplishment unsuspecting humanity is a passive instrument. Nowhere is there revealed any transcendent Finality.”² And to this statement we may add that such teleology is not supported by analysis of the social order; on the contrary, analysis indicates that the structure of that order renders this type of teleology otiose, since the order itself is nothing over and above the institutions which spring from humanity. The

¹ “There can be no conflict between *the* individual and *the* social. For both of these terms refer to pure abstractions. What do exist are conflicts between *some* individuals and *some* arrangements in social life; between groups and classes of individuals; between nations and races; between old traditions imbedded in institutions and new ways of thinking and acting which spring from those few individuals who depart from and who attack what is socially accepted” (Dewey and Tufts, *op. cit.*, pp. 358-359).

² Max Nordau, *The Interpretation of History* (trans. by M. A. Hamilton), p. 397.

view of the social order as teleological in this sense is based upon nothing more secure than an inadequate description of the "social" character of that order.

But to deny the teleological character of the social in this special sense is not equivalent to denying it utterly, if our previous account of teleological causation is to stand.¹ The possibility still remains that the order may exemplify teleology in another sense—in the sense, namely, in which human purposes and ideas (judgmental activity) function causally within it. And, if our preceding analysis of the order is essentially sound, this possibility must be held to be an actuality. For according to that analysis, the order embodies in its institutional character the convictions which spring from the activity of individual minds, particularly those minds which are sufficiently powerful to form clear-cut convictions and express them effectively. It is doubtless true there is no reason for supposing the social order to be teleological in the sense that it is the embodiment of what Nordau calls a "transcendent Finality;" but there is reason for supposing that it embodies immanent finality, human purposes and plans, and in this sense to be a teleological order.

But some would deny that it is teleological even in this limited sense. Nordau, for example, explicitly denies it: "Every act carried through by men can be referred to a cause that is, as a rule, known, or, if unconscious, can easily be discovered. Causality, not teleology, is the law of history. . . ." Here, the assumption clearly is that causality and teleology are logically incompatible, that if a thing is caused it *ipso facto* is not teleological and, presumably, *vice versa*—an assumption which denies the possibility of teleological causation and which should be supported by something more substantial than mere assertion. But, more importantly, the analysis of the historical process which Nor-

¹ See above, Chapter IX, section 2.

dau himself gives lies in support of the view that the process is in fact teleological. "Every historical event, without any exception," he assures us, "can be referred to a need—that is, in the last resort, to a feeling of pain."¹ Surely such a cause is quite different from the type exemplified in a purely mechanical system; it is essentially teleological in character, involving as it does the function of an "end"—namely, the removal of pain. The same remarks apply in principle to that interpretation of history which would reduce the causal factors involved wholly to "economic facts"—an interpretation commonly called the *economic* or *materialistic* interpretation and primarily connected with the name of Karl Marx.² For, after all, "economic facts" are not "facts" at all, or they are teleological: the *necessities* of life, and the conditions of the physical environment as causally affecting them, surely embody human plans and purposes.³

What such thinkers are chiefly concerned to maintain is not that the social order is a non-teleological, in the sense of being a purely mechanical, system of causation. They are concerned to maintain, rather, that within the order the causal factors are primarily the unconscious needs of life as contrasted with clearly thought-out plans and purposes. And, no doubt, there is much to be said in support of this interpretation; such blind forces are beyond question powerful agencies within the order. But it must never be forgotten that they are not blind as the so-called forces of physical nature are blind; nor must it be forgotten that within the order and integral to its structure there appear occasional outstanding individuals who, like Karl Marx himself, for example, more or less clearly envisage what they

¹ Max Nordau, *op. cit.*, p. 399; see the entire concluding chapter on "The Meaning of History."

² See Karl Marx, *Manifesto of the Communist Party* (with F. Engels), and *Capital*.

³ Note the comments on the point by B. Bosanquet, *The Philosophical Theory of the State*, pp. 27 ff.

take to be a "better" order and proceed to utilize such "blind" agencies to the end of molding the *status quo* more nearly to their hearts' desires. This is precisely what every revolutionist undertakes to do, whatever be the nature of the end his revolution is designed to serve. No theorist who overlooks such considerations can be said to have noted the unique feature of social change; and any theorist who, observing such matters, fails to see their essentially teleological character seems open to the accusation that he has not gone very far in his analysis of "economic facts" and the rôle they play in human history.

This rôle is undoubtedly a powerful one, and any view of social change which minimizes it is on that account inadequate. But there are other agencies also functioning in the social order, namely, those agencies which we sometimes speak of as ideals—particularly moral and religious ideals. There is, indeed, a tendency in some quarters to regard emphasis upon such agencies as idealistic in the bad sense of the word—that is, as vitiating what is really present and functioning in the social order. This tendency, however, may be nothing more than the expression of a prejudice; and it is nothing more, if moral and religious convictions and beliefs, for example, are potent factors in social change. In that case, the descriptive account which takes them into the reckoning is alone "realistic" and the account which overlooks them is "idealistic" in the bad sense. And there seems to be ample reason for maintaining that they are factors in social change: every revolutionist who pretends to seek a better order (and all so pretend) at least renders them lip-service, and in the calmer drifts and back eddies of the ordinary course of human affairs they seem unquestionably to function powerfully. What is commonly envisaged as "progress" is measured largely in terms of them, its several formulations being but variations on the general theme which Francis Bacon set as the goal of the

organization of human society—"the glory of God and the relief of man's estate."¹

§ 3. *Society and the individual: sovereignty*

A second problem arising from the society of minds, a problem that has been much debated in the development of political philosophy, is the problem of sovereignty, to a consideration of which we now turn.

(a) Instead of speaking of the society of minds it would be much nearer historical fact if we should speak of societies of minds. For in the historical development of the social environment there have always been numerous groups, more or less sharply sundered from each other and each regarding itself as having complete and final authority over its own affairs. At the primitive level the groups are small and very numerous. Driven by the agencies inherent in human nature these groups were in constant conflict with each other. Out of this conflict came amalgamation and expansion of groups into fewer and larger ones, until through the course of the centuries the many small groups have been supplanted by few large ones; the kinship groups have grown into the great national states which now cover the face of the earth and divide its surface and resources among themselves. Throughout this development the groups have never ceased to look upon themselves as wholly independent of each other. Each group insists upon its right to manage its internal affairs without interference or suggestion from other groups. So all along in the course of history there has been group isolation. It was so in the beginning, as is evidenced by the perpetual conflicts that mark man's early history; it is so at present, as the tragic

¹ For further discussion, the following references should be consulted: W. R. Inge, *The Idea of Progress* (the Romanes Lecture, 1920); B. Russell, *Mysticism and Logic*, Chapter III; P. V. N. Myers, *History as Past Ethics*; J. B. Bury, *The Idea of Progress*; the series of lectures published under the title, *Progress and History*, edited by F. S. Marvin.

testimony of the latest and most destructive of international wars with its aftermath bears witness. And it has ever been so. Might is right was the old slogan; and that meant that any group had the right to assert its authority as far as it could by the sword expediently extend it. Self-determination among the nations now seems to be the watchword of the hour; and by self-determination is usually meant the right of each group to do as it pleases, to determine for itself what shall be its internal organization and foreign policies, so long as its procedure does not contravene the similar rights of other groups.

Now this division of humanity into several isolated and sovereign groups, though natural and apparently inevitable, gives rise to certain perplexing problems that grow more perplexing and insistent as, with advancing civilization and the inventions incident to it which affect communication and travel, the groups become larger and more vitally touch each the activities of the others. Of these problems, the one which has generally been regarded as of fundamental importance and which in modern thought has caused much discussion is the problem of sovereignty: What is meant by sovereignty within the group, and is each group's sovereignty absolute and indefeasible or limited by some higher authority? The persistent discussion centering around this problem is indicative of its basal nature; it concerns something of profound importance in human social organization.

For convenience in our consideration of the problem here we shall break it into the two questions that arise according as attention is fixed upon the internal organization of the group or upon the interrelations of groups. The first of these questions concerns sovereignty within the group and may be formulated thus: What is meant by sovereignty within the group and where does it reside? The second question concerns the outward relations of the group and may be put thus: Is there any sovereignty outside of the group to which its own sovereignty is subject, or is its own

sovereignty absolute with reference to itself? Looking upon the government of a group as the visible expression or manifestation of sovereignty, these two questions may perhaps be formulated in more familiar terminology as follows: To whom within the group is the government responsible? and Is the government of one group wholly independent of the governments of all other groups? To a consideration of these two specific questions we now turn, beginning with the first.¹

(b) In discussing the problem of sovereignty within the group there are two main points to be noted. The first is the nature of sovereignty, and the second is the locus of sovereignty. The second problem is, from the standpoint of political philosophy, the more important; but the first is logically prior to the second, since vagueness with reference to it must inevitably introduce confusion into the whole debate.

By sovereignty is meant the supreme power within the group. In so far as the group has control over its own affairs it is said to be a sovereign group, and its sovereignty lies in this control. Modern discussion of the problem of sovereignty has emphasized two points upon which the reader should be clear.

INDIVISIBILITY. There has been repeated emphasis upon the indivisibility of sovereignty within the group. "Modern constitutionalism has rated highly the utility of a division of governmental powers, but it has not tended to show that the sovereignty itself is capable of such a division. The legislative, administrative and judicial functions are not regarded as militating against the essential and ultimate unity of the principle from which they emanate. Not even in the haziness that has obscured the Federal State has the principle

¹ An interesting and exhaustive survey of different theories of sovereignty since Rousseau may be found in an essay by C. E. Merriam published in *Studies in History, Economics and Public Law* (edited by the faculty of Political Science of Columbia University), Vol. XII, Number 4. This essay was published in the year 1900.

of a divided sovereignty been able to maintain the ground it won, but it has been driven out and replaced by the conception of the one and indivisible sovereignty resident in the State."¹ Sovereignty, then, is one and indivisible: this seems to be the main emphasis of modern theory and practice.

This monistic view of sovereignty is opposed by a group of thinkers known as pluralists, who insist that every state is really made up of more or less distinct subordinate groups, such as different churches and various economic and professional associations, among which the sovereignty of the state is in fact divided. The pluralists are not willing to accept without qualification the view that sovereignty is indivisible. But it is perhaps true to say that their position as yet lacks convincing formulation; in any event, it is in opposition to the generally accepted doctrine that, from the standpoint of its sovereignty, the state is one.² So despite the advocates of pluralism the statement still holds that there is general recognition, in practice at least, of the indivisibility of sovereignty within the group.

LEGAL AND POLITICAL SOVEREIGNTY. Modern discussion has brought out a distinction that is of considerable importance in connection with the general problem of sovereignty. That is the distinction between the legal sovereign and the political sovereign. By the legal sovereign is meant the supreme power in so far as the interpretation and administration of the laws of the group are concerned; it is the sovereign to which the lawyer, in his capacity as lawyer, appeals and beyond which he does not go. By political sovereignty is meant the supreme power within the state

¹ C. E. Merriam, *History of the Theory of Sovereignty Since Rousseau* (1900), p. 223. This is the essay referred to in the preceding footnote.

² A vigorous presentation of the pluralist's claims may be found in H. Laski's *Studies in the Problem of Sovereignty*. See also Graham Wallas, *The Great Society*; and Duguit, "The Law and the State," *Harvard Law Review*, November, 1907. On the distinction between the monistic and pluralistic views of sovereignty, see Haines and Haines, *Principles and Problems of Government*, pp. 53-57.

which is the ultimate and final source of all authority, legal or otherwise; it is the authority from whose verdict there can be no appeal. "The legal sovereign is the final and determining power, so far as the legal order or system goes; the political sovereign is that body in the community, the will of which is ultimately obeyed; one is characterized as the lawyer's sovereign, the other that of the layman."¹

Of these two types of sovereignty the political is the more basal. In the United States, for example, a law is a good law so long as it is constitutional; beyond the constitutionality of the law the lawyer as such does not inquire, its constitutionality is its authority. But the Constitution itself is not beyond question, and when public opinion so dictates it may be amended. Thus legal sovereignty in the United States—and the same is true of all states—is subordinate to political sovereignty; the latter may dictate revision and even radical transformation in the former. "Behind the sovereign which the lawyer recognizes there is another sovereign to whom the legal sovereign must bow."² This more basal sovereign is the political sovereign. The problem of political sovereignty is, therefore, the one in which the political philosopher is interested, and that is the problem with which we shall be concerned henceforth in our discussion.

Where, then, in the group is political sovereignty located? What is the warrant for it?

There are two main theories of the locus of sovereignty within the group. These we may for purposes of our discussion call the absolutistic and the democratic theories. By the absolutistic theory of sovereignty is meant the theory which holds that sovereignty within the group resides exclusively in a few—one or several—privileged members. In the actual practice of group organization this theory has expressed itself in three types of government. They are:

¹ C. E. Marriam, *op. cit.*, pp. 218-219.

² D. G. Ritchie, "On the Conception of Sovereignty," *Annals of the American Academy of Political and Social Science*, Vol. I, p. 392.

absolute monarchy—based upon the conception that sovereignty inheres within one individual as the special and unique representative of an hereditary line which for various reasons, in last analysis because of divine appointment, is supposed to have exclusive claim upon this prerogative. autocracy—based upon the assumption that sovereignty belongs to a privileged few in whom it is vested because of certain perquisites of birth or wealth or intellectual ability; tyranny—an application of the doctrine that might is the determinant of sovereignty. Over against the absolutistic view the practice of groups has set another theory which is the antithesis of it. This is the democratic theory which holds that sovereignty is vested in the general will of all the individuals composing the group, or at least of all who can efficiently participate in the generation of such a will. In practice this theory has assumed two forms: limited or constitutional monarchy—the monarch being merely representative of the general will wherein sovereignty is vested and which places upon the monarch whatever limitations it deems best; republic—an explicit recognition that government is of the people and by the people, all law-makers being directly accountable to public opinion and exclusively representative in their capacity.¹

In undertaking to evaluate the absolutistic and the democratic theories of sovereignty the following points should be noted. (i) There is no evident reason why sovereignty within the group should be vested in any individual or any minority of individuals as an absolute and indefeasible right, nor can any reason readily be given. (ii) Those forms of

¹ Some of the more important exponents of these several theories in modern thought are the following: Niccolò Machiavelli, *The Prince*, 1515; Hugo Grotius, *The Law of War and Peace*, 1625; Thomas Hobbes, *Leviathan*, 1651; John Locke, *Two Treatises on Government*, 1690; J. J. Rousseau, *Social Contract*, 1762; Jeremy Bentham, *A Fragment on Government*, 1776; G. W. F. Hegel, *Philosophy of Right*, 1821; John Austin, *Lectures on Jurisprudence*, 1832; J. K. Bluntschli, *The Theory of the State*, 1852; B. Bosanquet, *The Philosophical Theory of the State*, 1899; H. Krabbe, *The Modern Idea of the State*, 1915.

absolutism that have not made for the welfare of the group as a whole have been universally condemned, even by the supporters of the absolutistic theory. And this means that the group welfare is generally recognized as in some fundamental sense the determinant of sovereignty within the group. (iii) The democratic ideal is more and more applied as humanity develops. (iv) The group is nothing but the interpenetration of minds that make up its membership. Each mind, therefore, is an integral element within the whole, at least in so far as it participates in the organization of the group. It appears, consequently, that the real sovereignty of the group should, and does, lie precisely in this interfunctioning of minds, that is, in the group as a whole, in the "general will," and not in any individual or any minority of individuals. The democratic theory seems logically preferable.

The application of the democratic ideal of sovereignty, however, is beset by certain dangers and difficulties that should not be overlooked. One very real danger arises from the fact that in a democracy the tyranny of an unenlightened majority may be substituted for the tyranny of an enlightened minority. This objection to the democratic ideal has been emphasized by many theorists, particularly by Plato among the Greeks and Nietzsche among the moderns.¹ The only way in which this danger may be averted is for the group to take pains that no majority be permitted to play the rôle of tyrant; and this can be done by keeping the acts and policies of the majority open to criticism and review by the opposing minority.² One of the most serious difficulties

¹ Plato's views on the subject are expressed in his *Republic*. Nietzsche's views are scattered throughout his writings; in locating them invaluable assistance may be had from the index volume added to the English translation of his works under the editorship of A. Tille.

² "A majority is tyrannical when it decides without hearing the minority, when it suppresses fair and temperate criticism on its own acts, when it insists on restraining men in matters where restraint is not required by the common interest, when it forces men to contribute money to objects which they disapprove, and which the common interest does not demand" (Bryce, *The American Commonwealth*, 3rd edition, Chapter 84).

confronting any democratic group is the difficulty of formulating and giving efficient expression to the general will of the group. The method generally practiced is the method of counting ballots. It is difficult to believe, however, that this method alone gives expression of the real will of the whole; ballots should not only be counted, they should if possible also be weighed and evaluated. But there is no practical method at hand for doing this, though if it could be done the application of the democratic ideal would be much more surely guaranteed.¹

Sovereignty means the supreme power within the group. Political sovereignty differs from legal sovereignty and is basal. Both the absolutistic and the democratic views of the locus of sovereignty have been practiced by groups in their historical development. The absolutistic ideal, however, seems largely arbitrary and has been more and more discarded in practice. The democratic ideal, which seems the logically justifiable conception of sovereignty, makes the "general will" sovereign within the group. The chief difficulty confronting the practice of democracy is the determination and efficient application of this "general will." The great danger involved in the practice of democracy is that the tyranny of the majority will be substituted for the tyranny of the minority; to prevent this, free discussion and open criticism by the minority of the majority's acts and policies are essential."²

(c) The second general question arising from the problem of sovereignty concerns the relation that each group bears to others. Is each group its absolute sovereign?

To this question two answers have been suggested by the growth of man's social experience. The first is the answer

¹ A criticism of the ineffectiveness and failure of "ballot-box democracy" and suggestions looking toward a method of giving expression to the real "general will" of the group may be found in M. P. Follett, *The New State*.

² Note the fortunes of the democratic ideal in Europe since the World War.

of the *nationalist*, which is to the effect that each group is its own absolute sovereign and beyond it there is no sovereign to which it owes the slightest allegiance. The second answer is that of the *internationalist* who, in opposition to the position of the nationalist, holds that over and beyond the individual group there always stands the ideal group of humanity, the great society of minds, to which all subordinate groups alike owe allegiance and with reference to which their separate authorities are limited. In the actual practice of groups nationalism has been dominant, and still is. Internationalism, in theory, is as old as Stoicism and Christianity; but it has always been an ideal generally regarded as either impractical or undesirable or both. In recent years, however, internationalism has gained considerable strength in theory, and in the Hague Tribunal and the more recent League of Nations it has even seriously threatened to enter directly into practice.

In debating the claims of these two answers to our question two possible misconceptions may cause confusion and should be cleared up. In the first place, it is frequently assumed that the internationalist's ideal, if put into practice, would involve the destruction of individual groups and, consequently, the feeling of patriotism and the virtues that spring from it. A little reflection should be sufficient to show that there is not the slightest justification for such an assumption. It is perfectly conceivable that states might be organized in such a way that no existing state would be destroyed by such organization. If individuals can live together in groups and still retain their individuality, if the state does not destroy the family, the church, or such smaller groups falling within its scope, if a nation may be composed of independent and more or less sovereign states, why may not nations organize themselves into one large group without losing their individual characteristics or negating the allegiance of their citizens? Nations might continue to exist as more or less independent political units within an inter-

national grouping; whether or not this would be the case would depend altogether upon the sort of internationalism practiced. The point here is simply that internationalism need not necessarily involve the destruction of national states. The second misconception which offers a difficulty to clear thinking on the subject is the reverse side of the preceding one. It is the assumption that internationalism is indissolubly connected with certain theories of government and social organization on the order of extreme socialism. It may be true that internationalists are frequently found to be socialists and even communists at home; but, if true, it does not prove that socialism and internationalism are synonymous terms. There may be, and there are, internationalists who are far from the socialist's camp. The assumption to the contrary is merely another illustration of the fact that, in popular thinking, false associations are constantly leading into erroneous by-paths. Whether or not socialism and its kindred "isms" are dangerous doctrines has absolutely nothing to do with the debate as to the value of the internationalist's views concerning inter-group relations. Internationalism and socialism are two very different theories, neither being in any way logically connected with the other. Internationalism, then, does not necessarily involve the destruction of national states, nor has it any logical relation to any form of socialism. This being clear, one is in a better position to face the real issues involved in the nationalist-international controversy.

The following points would seem to be relevant to the debate. They are set down here, not as an exhaustive list of relevant points, but merely as suggestions which may be of assistance to the reader in his efforts to reach some conclusions on his own account concerning the merits of the controversy.

(1) The history of mankind's social development shows, as we have already seen, that the many small and weak groups of primitive society have in the course of the cen-

turies grown into a relatively few large groups latterly called states or nations. As the centuries pass and civilization advances the interrelations of the groups become more and more marked and their interdependence emphasized. At present every group is vitally affected by the fortunes, good or ill, of every other group, as was unmistakably evidenced by the last war. This has given rise to the League of Nations, mankind's latest experiment in social organization. Now this historical development would seem to have an important bearing on the problem at issue, and a fairly strong case may be based upon it for the thesis that the drive of human history is toward a one general and all-inclusive society of minds.

(2) Closely connected with the above historical development is the further consideration that any theory of man's group-life which stops short with a few separate and distinct groups regarded as absolutely independent of each other seems arbitrary. History shows no such stopping-place, and no theoretical justification for such a division among groups can be easily advanced. The question always remains, Why should each group have this indefeasible authority over itself? And until this question is answered the theory cannot be accepted as complete. The burden of proof here seems to rest on the nationalist.

(3) But the internationalist also has his difficulties. The wide diversities of moral, religious, political, and economic traditions that obtain among the various groups of humanity as at present existing undoubtedly throw numerous difficulties in the way of carrying into practice the internationalist's ideal. Not only is he confronted by political boundaries; he is also confronted by the boundaries that divide religions and civilizations, and these are infinitely more difficult to cross. Many and great are the practical difficulties that stand in the way of his scheme. But there seems no good reason to hold that these difficulties are insurmountable.

(4) The nationalist's position with reference to group

sovereignty is in principle closely allied to the absolutist's position with reference to sovereignty within the group; while the position of the internationalist is an extension of the democratic ideal to states and nations. And, if this be so, then whatever considerations are relevant to the controversy between the absolutist and the democrat with reference to intra-group organization would seem to be relevant, *mutatis mutandis*, to the controversy between the nationalist and the internationalist with reference to inter-group organization: the latter would then appear to be the former in a different application.

Such are some of the points that have a bearing upon the very fundamental problem of the organization of mankind. There are, of course, many others both theoretical and practical; but those mentioned above seem to touch upon the basal aspects of the problem and may serve to start the reader upon a further course of reflection.¹

¹ Helpful suggestions concerning issues may be found in J. S. Mackenzie, *Outlines of Social Philosophy*, Book III, Chapter I. For historical details, see J. H. Rose, *Nationality in Modern History*.

PART III

THE INTELLECTUAL ENTERPRISE: VALUATION

CHAPTER XII

VALUATION, VALUE, AND VALUES

Thus far in our study we have been concerned exclusively with those problems that center around the intellectual enterprise taken as noetic or cognitive merely. What, we have been asking, is the nature of the process of knowing, and what are the problems that arise out of it? But, as we noted at the beginning of the survey, there is another side of the intellectual enterprise, namely, its valuative function; and we promised to take this side into account later in our discussion. The time has now come to fulfil that promise. We therefore turn, in this Part of our study, to a consideration of some of the problems connected with human valuation.

The first of these problems is the general one of the nature of valuation and value, to a brief analysis of which the present chapter will be devoted. At the end two other, and more special, problems will be indicated to be taken up in the chapters following.

§ 1. *Valuation : judgments of value*

It is clear from the beginning, of course, that valuation and value are intimately linked with each other. The process of valuing (whatever it may be) must concern itself with value (however to be described); and, on the other side, value is disclosed through valuation. Nevertheless, the two may be separated in discussion, and this is necessary for clarity. We shall therefore separate them, and we begin with valuation.

In common usage, the verb "to value" means either to *like* (prize, hold dear) or to *appraise* (esteem, hold to be of worth). Thus, for example, we ordinarily speak indifferently of valuing a worthless trinket which is reminiscent of a loved one, of valuing a bank-account, of valuing the character of a friend, and of valuing a work of art. And it is clear that these two sorts of activity are quite different from each other.

Despite the differences, however, each has been affirmed as the correct meaning of the phrase, "I value." Some thinkers have insisted that the identification of valuing with liking or prizing or having an interest in is justified by analysis.¹ Others deny this in principle, and maintain on the contrary that "to value" rightly means to appraise; according to this position, the phrase "I value" is properly to be equated with "I hold to be of worth."²

As has been remarked above, it seems that the two sorts of activity here in question are quite different. Certainly it is true that one may like what has little or no worth, as in the case of the trivial keep-sake; but one appraises or estimates only that which at least is supposed to have worth. What one likes one may deem practically worthless, and what one estimates as worthwhile one may or may not like—except, of course, in the Pickwickian sense in which one may be said to "like" what is painful but worth while, such

¹ "Value is precisely the term applied in common usage to objects which stand at the outer end of the relation called liking, the inner end of which is a human mind that likes" (D. W. Prall, *University of California Publications in Philosophy*, Vol. IV, p. 84). Compare: "That which is an object of interest is *eo ipso* invested with value. Any object, whatever it be, acquires value when any interest, whatever it be, is taken in it; just as anything whatsoever becomes a target when anyone whosoever aims at it" (R. B. Perry, *General Theory of Value*, pp. 115-116).

² "To say that something is enjoyed is to make a statement about a fact . . . ; it is not to judge the value of the fact. There is no difference between such a proposition and one which says that something is sweet or sour, red or black. It is just correct or incorrect and that is the end of the matter. But to call an object a value is to assert that it satisfies or

as a needful operation or any other disagreeable means to an appraised end.

The chief point of difference seems to be this: liking is an attitude which seems to be primarily sentimental or emotional, whereas appraising is an attitude which is primarily judgmental. 'To like, one need do nothing more than manifest a sentimental attachment to something; to appraise, however, one must estimate or judge something. Liking may be largely unreflective; appraising, on the other hand, is essentially reflective.

This distinction, however, must not be too sharply drawn. Except perhaps in the very blindest instances, liking or disliking is not unenlightened by some degree of reflection; nor, on the other side, is appraisal without its feeling-tone. Everywhere liking seems to involve some reflection, and appraisal of worth has its appeal; certainly this is true in every instance of liking where anything in the nature of value can be said to be present, and in every instance of appraisal where what is appraised is even of remote concernment. If what is liked must also in any sense be called valuable, it is *ipso facto* reflectively entertained and estimated; and whatever is appraised or held to be of worth must be entertained with at least some measure of a glow of feeling.

If the remarks of the preceding paragraph are admitted fulfills certain conditions. . . . To say that something satisfies is to report something as an isolated finality. To assert that it is *satisfactory* is to define it in its connections and interactions. The fact that it pleases or is immediately congenial poses a problem to judgment. How shall the satisfaction be rated? Is it a value or is it not? Is it something to be prized and cherished, *to be enjoyed*? . . . That it is satisfying is the content of a proposition of fact; that it is satisfactory is a judgment, an estimate, an appraisal" (J. Dewey, *The Quest for Certainty*, pp. 260-261). "Values (to sum up) may be connected inherently with liking, and yet not with every liking but only with those that judgment has approved, after examination of the relation upon which the object liked depends" (Dewey, *loc. cit.*, p. 264). Compare the view of S. Alexander (*Space, Time, and Deity*, Vol. II, Book III, Chapter IX.A; *Beauty and other Forms of Value*. Chapter I).

as sound in principle,¹ it seems to follow that valuing, in both of its popular usages, is essentially judgmental in character and function. Presumably there is no question with reference to appraisal or estimation of worth; this sort of activity, it seems generally agreed, is judgmental. With reference to *liking*, Dewey's position would seem in principle correct: value is not inherently linked "with every liking but only with those that judgment has approved, after examination of the relation upon which the object liked depends." And with reference to *interest*, it would appear that Perry is not only under obligation to admit, as he does, that interest "may be said to be a product, derivative or *function* of cognition, in the sense that its satisfaction varies with the truth of the cognition which mediates it,"² but also to insist upon and emphasize the fact that interest is *cognitively mediated*—is, in other words, essentially judgmental.

Let us say, then, that valuing is judging and that there are judgments of value. Are such judgments in principle identical with those judgments which we have called cognitive and which we analyzed in some detail in the first Part of our survey? It seems that we can hardly say this. On the contrary, there appears to be an important difference between them, and this difference we must now note.

In our previous analysis of cognitive judgments, it was pointed out that their function lies in the apprehension and interpretation of meaning-situations. Let us shortly designate this function as that of description, and speak of such judgments as descriptive judgments. Now, judgments of

¹ Apparently they would not be so admitted by Prall in respect of *liking* (for his comments on the point, see his two essays: "A Study in the Theory of Value," *University of California Publications in Philosophy*, Vol. III, No. 2; and "The Present Status of the Theory of Value," *ibid.*, Vol. IV). Perry speaks somewhat more hesitantly in respect of *interest*, which he admits "cannot exist without cognition" (*General Theory of Value*, p. 358; for his extended comments on the point, see the Index to this volume).

² R. B. Perry, *General Theory of Value*, p. 357.

value are not merely descriptive ; in addition, they express approval (or disapproval) of the situation judged. If one judges that there is a red flower before one's eyes, that yonder in the distance is a rainbow and that it is formed by the refraction of the sun's light through the medium of raindrops, or that there is a man who is performing such-and-such a deed—if one so judges, one merely describes certain experiences. But if one judges that the flower or the rainbow is beautiful or that the deed is generous or selfish, kind or cruel, just or unjust—if one so judges, one goes beyond the mere description characteristic of the previous judgments. One now adds approval (or disapproval), attributes (or withholds) worth or value. The difference between the two sorts of judging, then, is the difference between merely describing a situation and approving (or disapproving) the situation. In judgments of value there is present, as essential, a function which is alien to the descriptive judgment—the function, namely, of approving (or disapproving) the situation judged.¹

What has just been said may be expressed in another way by saying that a judgment of value regards the situation as *satisfactory* (or the opposite). The situation is judged to be satisfactory when it is approved, unsatisfactory when it is disapproved. The judgment of value, thus, accepts the situation as in some sense final ; or, if the judgment is negative, the finality of the situation is explicitly called in question and denied. The judgment that the deed is just or that the flower is beautiful or that the proposition is true attributes a satisfactory character to what is judged in each instance ; if the judgment is that the deed is unjust or the

¹In this connection, it is important to bear in mind the distinction between judgments *within* situations which are approved, and judgments *about* such situations. Only the former are judgments of value ; the latter are merely descriptive. If I judge that John Smith approves a situation, my judgment is descriptive merely and is not a judgment of value ; it is John Smith's judgment which is the judgment of value. If, however, I approve or disapprove of John Smith's approval, my judgment is also a judgment of value.

flower ugly or the proposition false, the attribution of a satisfactory character is withheld from the object in each instance and it is judged to be unsatisfactory. And both emphases are alien to the merely descriptive judgment.

The judgment of value, then, explicitly asserts that the situation judged is satisfactory or the reverse; and in this it differs from the descriptive judgment. Accepting this statement as in principle sound, let us pass on to inquire what bearing it has on the problem of the nature of value in general.

§ 2. *The nature of value*

Clearly, the problem focuses around the notion of satisfactoriness, which therefore calls for further analysis. Satisfactory to whom or what, and in respect of what? The nature of value, it seems, must be sought in the answer to this question. And the answer here to be defended is this: Anything is valuable (that is, possesses value) which, because of its intrinsic nature, satisfies some judger of it—in other words, whatever is satisfactory is such that it satisfies someone who judges it, and its value is this character of satisfactoriness. Let us turn, now, to a brief analysis in support of this answer.

The first observation concerns the method of analysis. And it is to this effect: the only method available for answering, or even intelligently discussing, the question of the nature of value is through analysis of value-situations; and a value-situation is exemplified in anything (a natural event, a piece of property, a proposition, a symphony, a deed) which is judged to be valuable or to have value. For value is precisely that which is common to value-situations and in respect of which they are severally valuable.

Following this method, we must begin with judgments of value and note specifically those characteristics which have

a direct bearing on the question at issue. Among these, three seem to be important. (i) Every judgment of value presents a claim to be in some sense necessary, and not merely arbitrary. Whenever we deem an object satisfactory and consequently attribute value to it, we feel (rightly or wrongly) that there is something in the nature of the object itself which grounds the judgment and makes it necessary—the piece of property has a “real” value, the symphony is such that it must be regarded as beautiful, the deed is in its own right generous or the reverse, and so on. (ii) Closely connected with this claim and perhaps only the other side of it, is the claim of judgments of value to have compulsion over all minds and consequently to be teachable as well as amenable to critical evaluation. Two judgments of value may be contradictory, and one must be preferable to the other. Furthermore, a judgment of value may be mistaken and consequently should be revised. And, finally, one may learn, by experience or tutelage, to judge values rightly, to “develop one’s taste” as we say; indeed, this is one of life’s most important lessons and, though very difficult,¹ it is fortunately not wholly impossible to master. But (iii) one must not overlook what seems to be another, and opposing, characteristic of all judgments of value, namely, that they are in an important sense grounded in the preferences of the judger. When the deed is judged to be just or the symphony beautiful or the proposition true, preference on the part of the judger functions significantly. What is satisfactory is so, partly at least, because it satisfies; the object judged is looked upon and found good or satisfying. This seems to be a feature of every judgment of value; everywhere the rôle of preference is important, and the judgment essentially a preference-judgment. Here at least, the judgment reveals the sort of person the judger is.

¹ As Chaucer well knew:

“The lyf so short, the craft so long to lerne.”
(*The Parlement of Foules*)

If these three features of judgments of value be admitted into the analysis as essential, and not merely illusory, they have an important bearing on the question concerning the nature of value. And that bearing we must now consider.

There is one type of theory—sometimes called the “subjective” type—which identifies satisfactoriness with the satisfaction of the subject or judge in the value-situation; according to this type of theory, that which actually satisfies the subject is on that account satisfactory (valuable). Clearly, the third of the features of judgments of value above indicated lies in support of this type of theory; but the first two lie against it and can hardly be accounted for in terms of it. It so emphasizes the function of preference in judgments of value that they are robbed of any ground for their claim to be necessary and amenable to tutelage or critical evaluation and become wholly arbitrary and relative to individual predilection.

Opposed to this type of theory is another—sometimes called the “objective” type—which would identify satisfactoriness (value) with some property of the intrinsic nature of the object judged, without reference to any actual satisfaction of the subject or judge; according to this type of theory, the object itself is satisfactory whether it satisfies any subject or not. In respect of this type, it is clear that the first two of the features of judgments of value above indicated lie in support of it, while the third lies against it; if it be accepted, the rôle of preferences in judgments of value should not be different from their rôle in descriptive judgments—that is, preferences should not function at all.

A theory combining these two emphases seems to be demanded, if all three of the features of judgments of value here in question are to be adequately provided for. According to this theory, judgments of value would have to be given a descriptive function as well as a preference function, and their satisfactoriness would have to be defined in

terms of the two functions combined. They would, then, have to be said to find, or at least to seek, their satisfaction in the intrinsic nature of the object judged—the proposition, the symphony, the deed. Herein would lie whatever necessity and teachability may characterize them; and herein, also, would be found the linkage between their satisfaction and their satisfactoriness. In so far as they are necessary, we should then have to say, they are so because they are grounded in the nature of the object; and being thus necessary, they are amenable to critical treatment. Hence, the preferences functioning within them are not merely prejudices; they are, rather, “points of view” which, being explicitly considered as grounded in the intrinsic nature of the objects judged, are evaluated—that is, found satisfactory and therefore accepted, or found unsatisfactory and therefore rejected. Such a theory is preferable to the other two types, if the above-mentioned *prima facie* claims of judgments of value are to be accepted as ultimate for analysis and not explained away as illusory.¹ And the burden of proof would appear to rest on whoever chooses to accept the latter alternative, since analysis must apparently begin with judgments of value and their claims must be used as clues to the discovery of value.

Accepting this theory, however, we must note where we are driven. We are at the conclusion that value is a character of the *situation as judged*, and not of either aspect of it (whether “subject” or “object”) taken in exclusion from the other. In other words, the conclusion is that the value-situation involves the judger as an integral element: value is dependent on preferences, but preferences logically em-

¹ For further discussion of the intricacies involved in the foregoing analysis, see especially M. E. Clarke, *A Study in the Logic of Value*; the formulation of the several theories indicated above will be found in Chapter II, but the discussion of them runs throughout the book. Compare: R. B. Perry, *General Theory of Value*, Chapters I-V; and J. Laird, *The Idea of Value*, especially Chapters III, IX.

bedded in objective structures—the intrinsic nature of existents.¹

And with this conclusion, we seem to be in a position for which there is no *value*, but only *values*. For we have identified value with satisfactoriness, and as a result of our analysis satisfactoriness turns out to be relative to a satisfying “point of view” or preference in respect of a given situation. If this analysis is to stand, therefore, must we not say that there is no value in general, high and lifted up so to speak, but only specific value-situations? Are we not driven to hold that value so conceived is a pure abstraction, and that there exist only valuable things?

We certainly seem to be driven to this further conclusion. But it still remains possible that there are classes of values, and this possibility demands brief consideration.

¹ Compare: “We have values or tertiary qualities in respect of the whole situation consisting of knower and known in their compresence. Strictly speaking, it is this totality of knower and known, of subject and object, which is true or good or beautiful. . . . It is the fact believed after a certain fashion which is true, and the person who believes truly is the mind whose believings are determined in a certain fashion in accordance with the objects. It is the object which pleases after a certain fashion which is beautiful, and the person who feels æsthetically is he who feels after a certain fashion for certain objects” (S. Alexander: *Space, Time, and Deity*, Vol. II, Book III, Chapter IX.A, p. 238).

Professor Laird seems in principle to deny this. “I take it to be evident,” he says, “that if two things in nature are utterly indifferent to one another, neither, in relation to the other, has any value at all. If, on the other hand, they are *not* indifferent to one another, it is likely, if not absolutely certain, that a value exists for one or the other or for both of them, at least of a relative kind” (*The Idea of Value*, pp. 92-93). The principle of non-indifference in nature he calls the principle of “Natural Election” and he conceives it as quite independent of any interest or preference on the part of anyone who happens to judge about it. Thus for him the value-situation does not involve any “subject” as an element, being found wherever the principle of “natural election” is present. How then, one may ask in criticism of the view, does a judgment of value differ from a purely descriptive judgment? How does the principle of “natural election” differ from, say, a causal relation among existents or “things in nature”? And how does the judgment that value is there differ from the judgment that “natural election” is there—the judgment, in other words, that “things in nature” are causally, or otherwise objectively, conjoined? But see his own account of the matter (*The Idea of Value*, especially Chapter III):

§ 3. *Classes of values*

We do in fact commonly assume that there are classes of values, that valuable things may be grouped together under separate headings and thus distinguished as separate classes of values. And we assume, further, that these classes are marked by different characteristics. There is indeed justification for this assumption, but it is important for us to be clear as to what that justification is.

When anything is judged valuable, according to our previous analysis it is so judged because of some preference on the part of the judger. But what is the nature of this preference? It appears to be identical with acceptance of some characteristic of the object as satisfactory. But "satisfactory" in respect of what? Either, we must reply, in respect of the judger's "feeling" or in respect of some end which the judger deems desirable. Here we hit upon what may be called basal preferences, and it is with references to these basal preferences that valuable things are classified. Valuable things are severally grouped under types of values because they gratify such basal preferences. Let us notice, in illustration, some of the more important of these types.

(i) Many things are deemed valuable, in the first place, because of their causal connection with the general well-being of the body or what is commonly called *health*. Health is a basal preference of most human beings, and anything and everything which makes for it is on that account held to be a valuable thing and to exemplify this type of values. (ii) Again, *wealth* is a word which indicates something which most people prefer and may be said to be a basal preference; and with reference to it many things are valuable. (iii) Once more, *truth* is indicative of something which is preferred by every rational being, at least in his capacity as rational, and whatever exemplifies it is on

that account held to be valuable. (iv) Again, some things are enjoyed in a peculiar fashion marked by the word *beauty*, which is also indicative of a basal preference; and whatever is thus enjoyed, from sunset to symphony, is a valuable thing in respect of that preference. And (v), finally, there is the basal preference denoted by the word *goodness*, taken in its moral sense; and with reference to it we have another class or type of valuables. In sum: health, wealth, truth, beauty, and goodness are words which indicate certain basal preferences of human beings; in respect of them, many things are severally judged to be valuable, each having its own peculiar characteristics but the value of each being determined with reference to the basal preference which it gratifies; and thus arise the various types or classes of values.

The assumption that there are classes of values, then, is justified. All that is meant by it, however, is that valuable things may be grouped in various ways according as they are valuable in respect of certain basal preferences on the part of human beings. Any adequate analysis of these several classes of values must undertake to survey such basal preferences and to indicate the conditions of the satisfactoriness which properly belongs to them. Such an analysis is precisely a critical study of values.

There is, of course, no objection to referring to each of these several types of values as a *value*, provided one is clear concerning the reference. And to avoid needless circumlocution, we shall adopt this usage in what follows. When the reference is to particular instances of types of values, the term *valuable things* or, simply, *valuables* will be used.

All the values which we have mentioned are very important. Without any of them, human life would be much poorer and less interesting; at any rate, it would not be

what it is. But they are apparently not all of equal importance. Some are intrinsic values, while others are extrinsic or instrumental only. This technical distinction among values we must briefly note in conclusion.

§ 4. *Intrinsic and extrinsic values*

The distinction between intrinsic and extrinsic values is not difficult to draw in theory, and is easily understood. A value is said to be intrinsic when the basal preference involved is regarded as ultimate or final; a value whose basal preference is subordinate to some other preference is said to be an extrinsic or instrumental value. Otherwise expressed: an intrinsic value is one which is judged to be valuable in its own right and which consequently can be said to be of absolute worth, while an extrinsic value is one which is judged to be valuable because of its relation to another value in respect of which it is a means. In short: an intrinsic value is an end in itself, while an extrinsic value is a means to an end which is valued.

Though the distinction is not difficult to state in theory, it is very difficult to analyze and to apply. Precisely what values are intrinsic and what are extrinsic is a question which offers considerably more difficulty than one might on first thought be inclined to suppose. And the difficulty is at once theoretical and practical. Is health, for example, intrinsic or extrinsic? Is wealth instrumental only? Where would truth, beauty, and goodness fall?—these are questions whose answers are puzzling in theory and stones of stumbling in practice.

Various answers have been given to each of the questions, and for each answer there is at least some show of justification. In respect of health, two distinct philosophies of life are possible according as one rates it as an intrinsic or as an extrinsic value; and both philosophies have been taught and

practiced with widely divergent consequences.¹ Wealth is, perhaps commonly, regarded as an extrinsic value; but the miser certainly denies this in practice, and there are not a few misers abroad in the world.² Furthermore, most wars and other animosities among nations have their roots deep in economic values, as if they were ultimate. Truth is ordinarily accepted for its own sake by its high-priests in academic circles, and nowadays many outside of the ranks of the devotees of "pure" science are quick to render it lip-service at least. But there are not wanting, on the other side, many who look askance at it, unless it be hedged about with at least some measure of subserviency to what they are pleased to call *higher* or *spiritual* values; the truth that is to make us free, they think, must be a special brand of truth, or a truth harnessed to ulterior ends.³ But what about beauty and goodness? Surely no one can suppose that they are other than intrinsic values! It is true, indeed, that they have been held to be such. The former, even such a confirmed pessimist as Schopenhauer was forced to admit, is perhaps the purest joy that human frailty is

¹ Note, for example, those who give most of their time and thought to it on the one side, and the ascetics on the other. For the ascetic, indeed, it is doubtful if health is a value at all; surely those who, for whatever reason, religious or other, regard the body as the "prison house" of the soul must despise its claims or, at best, tolerate them with reluctance.

For a vivid portrayal of the ascetic ideal, see Tennyson's poem, *St. Simon Stylites*. And for an equally vivid portrayal of the contrasting philosophy, see Browning's *Rabbi Ben Ezra* :

Let us not always say

"Spite of this flesh to-day

I strove, made head, gained ground upon the whole!"

As the bird wings and sings,

Let us cry, "All good things

Are ours, nor soul helps flesh more, now, than flesh helps soul!"

In these two philosophies of life, two basal preferences are clearly at war with each other.

² The classic portrait of the type drawn by George Eliot in *Silas Marner* is "realistic" enough.

³ Note what is implied in the phrase, not uncommonly used by those who fear a conflict between religion and science, "too much science." Note, also, the widespread use of propaganda for political ends, and consider its nature.

capable of entertaining; and the latter has all along in theory been identified with the *summum bonum*, the chief end towards which the stresses and strains of life converge. But there is another side to the case, and it must not be overlooked. It must not be forgotten that, at least since the days of Plato, censorship of beauty in behalf of goodness has been advocated in theory and more or less assiduously practiced; nor must it be forgotten that the ultimacy of goodness itself has not infrequently been denied, and still is being denied, in behalf of the supposedly superior claims of religious faith and piety.

Into the intricacies of the problem raised by such observations as the foregoing we cannot here enter.¹ The observations are presumably sufficient to indicate the complexity of the problem involved in the distinction between intrinsic and extrinsic values—a complexity which cannot be compassed short of an exhaustive analysis of each of the several values in question. So far as truth is concerned, we have said above, in the chapter devoted to the subject, all that can be said in this introductory survey. Beauty and goodness will be given separate and somewhat detailed consideration in the chapters following. Health and wealth we must perforce leave on one side without further comment, except in so far as they enter into the discussion of goodness.

Before passing on, however, we must pause for a word of emphasis on the practical import of the theoretical distinction with which we are here directly concerned. If the problem of the proper co-ordination of values is complicated in theory, as it undoubtedly is, it nevertheless inescapably confronts in practice everyone who lives at all reflectively—everyone, indeed, who lives a normal human life. The ideal of life may, with fair precision, be formu-

¹ For a somewhat detailed discussion of some of the points, see the analyses by G. E. Moore in *Philosophical Studies*, Chapter VIII, and *Principia Ethica*, pp. 24-30.

lated by saying that it is to put first things first and second things second, in other words, properly to arrange valuables. And one's degree of success in the business of living is closely correlated with the success one achieves in pursuit of this ideal. Nor can anyone wholly avoid the issue, since the business of living cannot be carried on, however unreflectively, without putting something first and something second in actual conduct—without, that is, meeting alternative valuable things and preferring some to others. Life necessarily involves choosing among valuable things, and this involves, at times at least, choosing among basal preferences. Hence the practical importance of the problem of the proper co-ordination of values and hence, also, the difficulty (not, infrequently, unfortunately, the tragedy) inherent in the business of living. The theoretical problem raised by the distinction between intrinsic and extrinsic values, thus, is no idle problem invented for the delectation of philosophers and other “speculatively” inclined persons. On the contrary, there are involved in it the very issues of life itself.

CHAPTER XIII

BEAUTY

The esthetic type of reaction is a practically universal characteristic of human experience. Even primitive man aspires towards the beautiful; he expresses this aspiration in decoration, ornamentation, dance, and music. And civilized man objectifies this aspiration in his more advanced artistic creations. Wherever a civilized society is found the esthetic interest ramifies profoundly through the warp and woof of it. "The plastic arts, with poetry and music, are the most conspicuous monuments of this human interest, because they appeal only to contemplation, and yet have attracted to their service, in all civilized ages, an amount of effort, genius, and honor, little inferior to that given to industry, war, or religion. The fine arts, however, where esthetic feeling appears almost pure, are by no means the only sphere in which men show their susceptibility to beauty. In all products of human industry we notice the keenness with which the eye is attracted to the mere appearance of things: great sacrifices of time and labor are made to it in the most vulgar manufactures; nor does man select his dwelling, his clothes, or his companions without reference to their effect on his esthetic senses. Of late we have even learned that the forms of many animals are due to the survival by sexual selection of the colors and forms most attractive to the eye. There must therefore be in our nature a very radical and widespread tendency to observe beauty, and to value it."¹)

¹ Santayana, *The Sense of Beauty*, 1896, p. 1. For a simple and interesting account of the primitive arts and a brief introductory study of the "Science of Art" see E. Grosse, *The Beginnings of Art*.

This universal interest in beauty gives rise to certain problems that constitute an interesting, though puzzling, corner of philosophy. These problems are mainly three: the nature of beauty; the nature of the esthetic judgment; and the relation between beauty and goodness. What can we definitely say concerning the nature of beauty? What are some of the main features of esthetic judgment—the appreciation or appraisal of the beautiful? And how does the esthetic judgment stand in respect of moral valuation, which touches perhaps even more profound preferences of human beings? These are the questions with which we are here confronted, and we shall consider them in the order indicated.

§ 1. *The nature of beauty*

The problem of the nature of beauty is a very difficult one, and many theories concerning it have been advanced in the course of man's reflection on the problem.¹ Its adequate treatment would demand a separate volume. Here we can only touch upon certain fundamental aspects of the problem, and what is said will be little more than a syllabus to be supplemented by further reading and study.

(a) As we have argued in the preceding chapter, value is a character which attaches to an object as valued, to the situation as judged and not to one aspect of it (whether subject or object) in isolation from the other. If this is true in respect of value in general, it must be true in respect of types of value. And we are now to note that it holds in the case of beauty.

It has at times been maintained that beauty is objective, in the sense that it is a property of things without reference to any appreciation of it. Richard Price, for example, contends that beauty is an attribute or quality so "*inherent in*

¹ Surveys of the classical theories may be found in E. F. Carritt, *The Theory of Beauty*; and W. Knight, *The Philosophy of the Beautiful*, Part I. The latter book contains valuable bibliographies.

objects that it would exist in them whether any mind perceived it or not."¹ The locus of beauty is in the environment, and not in any sense in the mind of the one who appreciates it.

As we shall see below, there is an element of truth in this view. But there are difficulties in the way of it which forbid its unconditional acceptance. The chief of these perhaps is the fact, easily verified, that notions of beauty vary from age to age and from race to race; this is particularly evident in works of art, as a survey of different types of music, painting, or sculpture will show. It is not easy, for instance, for one trained in the traditions of European art to appreciate beauty in the art of the Chinese and the Japanese. The Hottentot Venus, it has been affirmed, is extremely ugly in the eyes of the foreigner; while the statues in Buddhistic temples, and even the temples themselves, do not spontaneously impress the mind of the alien with a sense of their beauty. And even modern Europeans find difficulty in discovering the beauty hidden in some examples of the art of medieval Europe; in fact, some of these examples may to the modern mind appear hideous. Such facts as these would seem to be inconsistent with the theory of the extreme objectivity of beauty. If beauty be objective and in no sense dependent upon the mind that experiences it, why should it not universally be the same for all minds? Why these variations? Again, the appreciation of beauty requires, not infrequently, a certain period of training on the part of the mind that would observe it. In all the higher forms of art this is true, as the appreciation of

¹ Quoted by Raymond, *Art in Theory*, p. 127. Richard Price was a Unitarian minister and a thinker of note of eighteenth century England. He was a forerunner of a view of ethics that later came to be known as the *intuitionist* view; he held that right and wrong are directly perceived by an "intuition" of the understanding. This, obviously, is in keeping with his view of beauty as expressed above. His most important work is *A Review of the Principal Questions of Morals* (1757; revised and enlarged edition, 1787), from which the quotation in the text is taken. In addition he wrote several works on political questions.

classical music abundantly illustrates. And this fact also seems hard to reconcile with the doctrine of the objectivity of beauty in its extreme form. For these reasons, therefore, among others that may occur to the reader, the doctrine seems hardly satisfactory. Beauty is apparently in some sense relative to the mind that observes it, and not wholly independent of it.

There is another view of the locus of beauty which is the opposite extreme from that described above. This is the view that beauty exists, not in the environment, but wholly in the mind. It is a peculiar way of feeling that human beings entertain about the world, a "light that never was, on sea or land" but exists only in the heart of man.

They have no song, the sedges dry,
 And still they sing.
 It is within my heart they sing,
 As I pass by.

Within my breast they touch a string,
 They wake a sigh.
 There is but sound of sedges dry;
 In me they sing.¹

Here, once again, there is an undoubted element of truth. Such facts as those above mentioned seem to lie in support of it. That beauty is relative to traditions and training and cannot be defined in isolation from them would seem to imply that it is embedded in the psychology of the society of minds. But, granting this, there are other facts that will not permit us to say that beauty is wholly a matter of subjective feeling. On this side it must not be forgotten that, broadly speaking, beauty exists for all minds alike and that adequate training tends to bring esthetic judgments towards a common standard. "It is notorious that the verdicts passed by the human race as to Beauty are as

¹ George Meredith, "Song of the Songless," quoted by H. S. Langfeld, *The Aesthetic Attitude*, p. 26.

various as the nations, and almost as the families of mankind. But such statistics . . . cannot disprove the fact . . . that, given an adequate education in Beauty, these scattered judgments and verdicts will approach toward a common standard; and that the crude taste of the savage will yield, in a perfectly normal way, to the insight of the civilized. . . . It is an undoubted fact . . . that wherever education has advanced beyond the elementary stage, there is a consensus of opinion as to what things are beautiful and what are not. Minor or secondary differences remain, and always will remain; but the radical difference in the judgments as to Beauty is between those adopted by the savage and the civilized, not between those which are entertained by the latter. Further, we can only explain artistic progress in a nation if there be a standard towards which that progress normally tends."¹ And such facts as these cannot be easily accounted for on the basis of the assumption that beauty is wholly subjective and exists only as a psychological fact in the mind of man. The difficulty here is as great as that which would arise were one to essay a purely subjective explanation of the nature of truth and the growth of the sciences.

If, then, the locus of beauty is neither exclusively in objects nor exclusively in the mind, where may it be said to be? The most obvious answer is: In the environment *and* in the mind of man, in the mind as a special sort of reaction to the environment. And this would seem to be the truth of the matter. Beauty is definable only in terms of objects of a certain sort standing in a peculiar relation to perceiving minds: it is the way minds are affected by certain objects. It is "neither totally dependent upon the person who experiences, nor upon the thing experienced; it is neither subjective nor objective, neither the result of purely intellectual activity, nor a value inherent in the object, but

¹ W. Knight, *The Philosophy of the Beautiful*, Part II, p. 8.

a relation between two variables—the human organism and the object.”¹ This view of the matter seems to fit in well with all the facts, and so is empirically sound. It is also consistent with the general principles above developed in our study of judgment. The values of beauty are the objects of the esthetic judgment; and every judgment, we have seen, is precisely the reaction of mind to an environmental situation. (Those objects are beautiful which are of such qualities as to arouse in an observing mind that peculiar response called “esthetic”—the judgment of beauty.)

(b) But what are these qualities? What are the objective conditions of beauty? What are the characteristics of beautiful things with reference to which they are judged to be beautiful? Not every object of nature, not even every work of art, is so judged; many of them are indifferent esthetically, while others are positively ugly. What is it that differentiates such objects from those which elicit a positive esthetic response?

An introductory word is necessary here to bring to the reader’s mind a distinction with which he is already familiar. Everyone knows that beautiful objects fall into two general classes: objects of nature or natural objects, and the creations of man’s genius or the objects of art. Within the first class there is a great variety of objects which we call beautiful. The laughing cascade and the surging sea, the rolling valley and the towering mountain, the moonlit heavens and the clouds at sunset—these and a thousand other objects in nature produce within us the esthetic response. No detailed enumeration of them is, of course, possible.² But we can note certain general types of beauty

¹ H. S. Langfeld, *The Aesthetic Attitude*, p. 108. Compare S. Alexander, *Beauty and Other Forms of Value*, Chapters III, X.

² Note St. Paul’s classic statement: “There are also celestial bodies, and bodies terrestrial: but the glory of the celestial is one, and the glory of the terrestrial is another. There is one glory of the sun, and another glory of the moon, and another glory of the stars; for one star differeth from another star in glory” (I *Corinthians*, Chapter XV, verses 40, 41).

exemplified in the objects of nature, and classify them as sublime, majestic, graceful, and the like. With the classification of objects of art all are familiar under the headings of the arts themselves: painting, sculpture, architecture, music, and poetry.¹

What now are the chief qualities of objects, whether natural or artistic, that give rise to the esthetic response? Why does the rainbow make the heart "leap up" when one beholds it, and what has the rainbow in common with other beautiful objects that it and they should evoke the esthetic judgment? What are the objective conditions of beauty?

To this question many answers have been offered. And this is inevitable, since the conditions themselves are so very complex. We can only attempt here to suggest a general statement with reference to the matter.² In the first place, it is obvious that the arrangements embodied in the object are of great importance in the esthetic attitude. The framing and arrangement of pictures, the setting of the statue, the order and combination of colors, the scenic arrangement of the drama, the form of the poem, the order of rhythms in music—these are illustrations in point. It is difficult, and perhaps impossible, to give an exhaustive characterization of these objective conditions of beauty, since mind is an indispensable element within the relation and different minds are affected in various ways and by varying qualities in objects. However, considering the objective conditions of beauty by themselves alone and without reference to the perceiving mind, we may perhaps say that there is one characteristic always to be found exemplified in them; and that is unity. The beautiful object is the unified ob-

¹ W. Knight, *The Philosophy of the Beautiful*, Part II, Chapters VIII-XIII, gives a general survey of the several arts; and to each chapter he appends a rather extensive bibliography which will be helpful for further reading and study. G. B. Brown, *The Fine Arts*, deals in an interesting way with sculpture, architecture, and painting. Primitive art is touched upon in the book referred to above: E. Grosse, *The Beginnings of Art*.

² For details, see G. H. Opyke, *Art and Nature Appreciation*, 1932.

ject. "It is through this unification of the object, this relating of its parts one to another, that it is grasped by the mind. There is in this an economy of effort which is essential to mental development. Therefore, it is reasonable to expect that an arrangement of the elements of an object of contemplation which aids this unification will meet the requirements of the mind better and be more acceptable than an arrangement which does not do so. Unity can, therefore, be considered a firmly established principle of beauty."¹ This condition of beauty is particularly marked in the greatest works of art, as is abundantly exemplified by the products of the artistic genius at its highest; any of the works of Shakespeare, the paintings of Michael Angelo, the statues of Pheidias, or the great cathedrals of medieval Europe may be taken as examples. The point is well put by Brown in *Abt Vogler*:

But here is the finger of God, a flash of the will that can,
 Existent behind all laws: that made them, and, lo, they are!
 And I know not if, save in this, such gift be allowed to man,
 That out of three sounds he frame, not a fourth sound, but a
 star.

Consider it well: each tone of our scale in itself is nought;
 It is everywhere in the world—loud, soft, and all is said:
 Give it to me to use! I mix it with two in my thought:
 And, there! Ye have heard and seen: consider and bow the
 head!

This unity expresses itself mainly in three ways: unity of form, unity of content, and unity of form with content.²

Here we seem to have the basal characteristic of the objective conditions of the esthetic judgment in its purest and highest type, in so far as those conditions can be described

¹ H. S. Langfeld, *The Æsthetic Attitude*, p. 31.

² To fill in details here the student should refer to the discussions of the point and illustrations of it taken from the arts as given by Langfeld in *The Æsthetic Attitude*, Chapters VII and VIII. For a study of the principles involved see particularly pp. 169-190. See also S. Alexander, *Beauty and Other Forms of Value*, Chapter V; and G. H. Opdyke, *Art and Nature Appreciation*.

apart from the esthetic response itself. But, obviously, the subjective response of the mind to the objective conditions is of indispensable importance in the complete understanding of the beautiful; and to a consideration of that we now turn.

§ 2. *The esthetic judgment*

What are the main characteristics of the esthetic judgment, the characteristics which belong to it as a judgment of beauty? Two of these will here be discussed briefly.

(a) The first is what I shall call the *imputative* character of the judgment of beauty. And perhaps this character can best be made clear by contrasting the judgment of beauty with the purely descriptive judgment.

In the purely descriptive judgment, the objective aspect of the situation judged is (ideally, at least) presented exactly as it is in fact. Here, nothing is added, except of course by way of interpretation; or, if it be, the judgment is to that degree erroneous. In the judgment of beauty, however, the function is somewhat different. Apprehension and interpretation of the objective material is no doubt involved. But something is added in, so to speak, by the appraising mind. "The marble (*i.e.*, of the Hermes) which looks alive is itself a block of stone; the figures of Giotto . . . press upon the ground they tread on . . . ; 'the baseless fabric of this vision' has magic which the mere words by themselves have not."¹ This addition to the objective material of the beautiful object is imputed to it by the appreciating mind; and such imputation is essential to the judgment of beauty. Whenever one judges that an object is beautiful, one imputes to it something which a merely descriptive judgment would never find in it.

Stated in terms of our previous analysis of judgment, the

¹ S. Alexander, *Beauty and Other Forms of Value*, p. 36; see the author's whole discussion of what he calls the "illusoriness" of the beautiful, pp. 35-46.

point here may be expressed by saying that in the judgment of beauty the "point of view" is, in a manner, dominant. In the purely descriptive judgment, of course, the point of view functions; but it is (ideally, once more) wholly subservient to the objective material of the situation judged. If it presumes to impute anything to that material, it vitiates the judgment. But in the judgment of beauty the case is different. Here there is an addition to the objective material from the associations involved in the point of view of the judger; and this addition, so far from being detrimental to the judgment, is essential to it. Without it, the judgment is not a judgment of beauty, but is, as we say, prosaic.¹

The imputation is not arbitrary, however, and this must be stressed. On the contrary, it is elicited by the objective material of the situation judged. After all, the judgment of beauty is also descriptive in function, as we have noted is the case with all judgments of value. It is only certain objects which can give rise to the response. And in works of art, the artistry of the creator is exemplified in his ability so to construct them as to elicit the response. But the appraiser must do his part; and his part consists in bringing to bear on the object a point of view, a "vision," which enables him to see more there than mere description can ever envisage—namely, that which the poet speaks of as

The light that never was, on sea or land,
The consecration, and the poet's dream.

The preceding remarks have a direct bearing on the question whether the esthetic judgment is true, and we may pause to note this before passing on. In the light of these remarks, the answer to the question must be both yes and no, depending on what is to be understood by truth. The

¹ Such judgment is characteristic of the prosaic soul cast in Wordsworth's famous lines:

A primrose by the river's brim
A yellow primrose was to him,
And it was nothing more.

judgment of beauty must be true in the sense that it discloses the characteristics of that which is beautiful; this much would seem to follow from its descriptive function. But it cannot be true as a merely descriptive judgment is true; its imputative function renders this impossible. When one judges that the rainbow is beautiful, one presumably makes a true judgment; but it is not true in the sense in which the judgment that the rainbow is formed by the refraction of light is true. The whole question, thus, is vexed with ambiguities, though the question is quite important to raise. The shortest answer is perhaps simply to say that the judgment of beauty makes no truth-claim in the ordinary meaning of that phrase; that beauty and truth, while allied and in a certain sense mutually involved, remain nevertheless distinct values. Certainly it is a gross mis-statement to say, with Keats's line, "Beauty is truth, truth beauty," if the line is seriously taken for anything more than a beautiful expression of a half-truth.¹

(b) The second characteristic of esthetic judgments here to be noted is that which is involved in the question whether they are "rational" and, if so, in what sense.

Two answers to this question have been proffered. One (called intellectualism or rationalism) holds that esthetic appreciation is merely an intellectual judgment that a given object is beautiful, and that, in order to create beautiful objects, such and such rules must be followed. The other (romanticism or sentimentalism) emphasizes the emotional or feeling element in esthetic appreciation, and denies that set rules can be laid down for the creation of the beautiful. According to the intellectualists the esthetic judgment is exclusively rational, and differs in no important respect from such purely factual judgments as "Heavy bodies fall" or "A straight line is the shortest distance between two given points." According to the romanticists, on the

¹ For an interesting discussion of the problem, the reader should consult E. F. Carritt, *What Is Beauty?*, pp. 19-36.

other hand, the purely rational element is of minor importance in esthetic judgments, if, indeed, it can be said to be present at all; the esthetic judgment is merely a feeling for beauty, an "intuition" that leads directly and immediately into the heart of the objects experienced as beautiful. For the one the esthetic judgment is a rational process; for the other it is an immediate feeling.

The truth apparently lies between these two extremes. Certainly the esthetic judgment cannot be identified with a formal process of reasoning; it involves an emotional or feeling quality which is a primary characteristic of it. One does not ordinarily reason that the picture or poem or sunset is beautiful because of such and such attributes that belong to it; one is rather directly impressed with its beauty. On the other hand, the esthetic judgment is not merely a matter of feeling, otherwise it would not be educable nor could reasons be advanced in support of it once it had made its deliverance as to beauty or the lack of it; beauty then would be exclusively a matter of "taste." After all, the esthetic judgment is a *judgment*; it grows out of an intellectual background and expresses an intellectual point of view. This background and this point of view are necessary for the perception of beauty even in natural objects, and still more so for the appreciation of objects of art. Unquestionably there is an immediate feeling in the esthetic response; the beauty of the object is directly experienced, and that is the primary fact.

Consider it well: each tone of our scale in itself is nought;
 Give it to me to use! I mix it with two in my thought:
 And, there! Ye have heard and seen: consider and bow the head!

But one must not forget that it is mixed in "thought." What immediacy there is results from previous training and experience, just as the "immediate" solution of the scientific problem, as it were by a flash of intuition, results from,

is the fruition of, previous prolonged reflection by the scientist on the elements of the problem under consideration.

The esthetic response, then, involves both intelligence and feeling, both reason and emotion. It is a judgment with a pronounced feeling-tone. Those most keenly endowed with the esthetic sense, the great creative artists, are at once highly intellectual and profoundly emotional. "If we glance through the history of art, we shall find that those who have produced the most enduring works were men of great intellect as well as of deep feeling. Perhaps one of the best examples is Leonardo da Vinci, who excelled in science as well as in art. With him as with others of the immortals, we find that there was always a balance between the two sides of his nature. Great art has not been produced upon a purely emotional background, nor upon a purely intellectual one. The latter is unfortunately less often found than the former, but given a great intellect, there can then be as much of the emotional side as even the extreme Romanticist can desire. The combination is rare, but so is genius."¹ And if this be true of the immortals in art, we may be fairly certain that it is true of the esthetic response generally.

A more detailed survey of the characteristics of the esthetic judgment need not here be undertaken. The problem, after all, is largely psychological, and for an exhaustive study of it the reader should consult the special texts.²

¹ H. S. Langfeld, *The Aesthetic Attitude*, p. 10. The entire discussion from which this quotation is taken (pp. 6-13) should be read. Compare I. Babbitt, *The New Laokoon*, Chapter V. For an important contemporary point of view somewhat different from that developed in the text, see B. Croce, *Esthetics*. A convenient summary of Croce's theory may be found in H. W. Carr, *The Philosophy of Benedetto Croce*, Chapter IX.

² The following references are given as offering a beginning of such a study: H. S. Langfeld, *The Aesthetic Attitude*, particularly Chapters III-VI inclusive; K. Gordon, *Esthetics*; E. D. Puffer, *Psychology of Beauty*; Babbitt, *The New Laokoon*, especially Chapters IV and V; E. F. Carritt, *The Theory of Beauty*.

§ 3. *Beauty and goodness*

We come now to the last of the questions which in the beginning of the chapter we decided to consider. What is the relation between beauty and goodness? To what extent should the principles of morality enter into the determination of the beautiful?

Once more we find two extreme views with reference to the questions before us, and, as usual, we shall probably discover that the truth lies in a synthesis of the extremes. On the one hand, there are those who are inclined to insist that the beautiful should always be judged with reference to its bearing upon the principles of conventional morality, *and that nothing which contravenes these principles can in the end be truly beautiful.* On the other hand stand those who are convinced that moral considerations have no place in the evaluation of the beautiful; "art for art's sake" is their way of stating their thesis. Those who advocate the first position would place the ban upon everything which is risqué or questionable on moral grounds; while those who advocate art for art's sake would admit any subject provided it is artistically conceived. Which of the two views is correct?

Clarity of discussion may be aided by a distinction in meaning between two possible interpretations of the point at issue. To hold that art (for it is artistic objects, not objects of nature, with which the problem before us is concerned) is subject to morality may mean either that truly beautiful art must point a moral, or that the products of artistic creation are rightfully subject to ethical considerations in our final appraisal of them. Keeping this distinction in mind, we can perchance see our way more clearly. There seems no justification whatsoever for the first contention. The fact is that the highest art does not aim at edification, or, if it does so at all, it does so only in an indirect manner. Didactic productions are not the highest

creations of the artistic genius.¹ "Of all these anti-æsthetics, which reduce the value of that pleasant thing called beauty to the moral lesson imparted by an artist, we must barely say that they do not describe our æsthetic experience. . . . It is not impossible, but it is rare, to find a quite satisfactory work of art to which we can assign its edification. Milton does not really justify God's ways to men, but we perhaps care more for him than those who thought he did. Dr. Johnson saw that Shakespeare 'seems to write without any moral purpose' and 'is not always careful to show in the virtuous a disapprobation of the wicked.' As Scott said: 'The professed moral of a piece is like the mendicant who cripples after some splendid and gay procession, and in vain solicits the attention of those who have been gazing on it.'"²

The thesis that the objects of art are rightfully subject to moral considerations in our final appraisal of them is on a different footing. It is true that many works of art may transgress the boundaries of conventional moralities and shock sundry sensitive souls in consequence; and they are none the less works of art for all that. But true art cannot claim for itself absolute freedom from contact with the deeper principles of a scientific ethics; for a scientific ethics is concerned with the basal laws of the whole social order, and art, no more than economics or politics, can presume to demand exemption from its realm. "Art is subject to moral criticism, because morality is nothing more nor less than the law which determines the whole order of interests, within which art and every other good thing is possible. It will scarcely be denied that art is an expression of interest, that both its creation and its enjoyment are activities, moods, or phases of life; and it follows that before this specific interest can be safely or adequately satisfied, it is necessary to fulfill the general conditions that underlie

¹ Note, in illustration of this sort of poetry, Pope's *Essay on Man*.

² E. F. Carritt, *The Theory of Beauty*, pp. 64-65. See also the same author's *What is Beauty?*, pp. 37-55.

the satisfaction of all interests. It is as absurd to speak of art for art's sake as it is to speak of drinking for drinking's sake, if you mean that this interest is entitled to entirely free play. Art, like all other interests, can flourish only in a sound and whole society, and the law of soundness and wholeness in life is morality."¹ The very comprehensiveness of morality is its warrant for presuming to include within its proper scope the standards of the esthetic judgment. And this presumption is apparently no impertinence, since the standards (*i.e.*, the basal preferences) within moral judgments ramify farther into the intricacies of life's processes and organization than do those of esthetic judgments.

Of course, the problem of the relation between beauty and goodness does not arise in connection with natural beauties, since these do not lend themselves to man's control. Nor does it concern many forms of art, which do not directly impinge on human conduct and motivation. It arises only in connection with those arts whose objects enter directly into human motivation and express principles of human conduct—namely, the plastic and literary arts, and especially the latter.

¹ R. B. Perry, *The Moral Economy*, p. 174. The entire Chapter V, of this volume, should be read in this connection. Compare D. W. Prall, *Æsthetic Judgment*, Chapter XV; and L. A. Reid, *A Study in Æsthetics*, Chapter XI. See, also, Plato, *Republic*, Book III.

CHAPTER XIV

GOODNESS AND FREE WILL

Goodness is apparently more fundamental in human experience than is any other value. It touches the very depths of human life; it bodies forth man's highest ideals for the present life, and impinges upon his profoundest hopes and fears in respect of a life other than this. Consequently the problems connected with it are far-flung in their scope, and they are among the most perplexing as well as the most persistent problems with which the mind of man has busied itself during the centuries of his reflective endeavors. No solution of them can here be proffered; it will be sufficient, if they can be clearly indicated and various proposals for their solution suggested.

The problems are mainly three: the nature of goodness, the conditions of the creation of goodness, and the conditions of the conservation of goodness. Otherwise expressed, they are: the problem of the standard or criterion of good conduct (the *summum bonum* is the traditional Latin phrase), the problem of free will, and the problems of the existence of God and the immortality of the soul. The first two of these problems will be discussed in the present chapter. The others concern the religious consciousness of mankind, and must be considered separately in later chapters.

§ 1. *The nature of goodness: the standard*

Broadly speaking, the views historically developed concerning the criterion of conduct by which the distinction commonly drawn between good and bad, right and wrong, conduct is determined fall into two classes. On the one

side, it has been held that the standard lies in certain general laws or principles or properties which somehow exist in their own right without reference to individual experience and is, consequently, absolute and unchangeable. On the other side and in opposition to this view, it has been argued that good and bad, right and wrong, are only ideas which the human mind gradually acquires as a result of the consequences that experience brings; goodness and its opposite, therefore, are created in the course of human experience and so are relative to time and circumstances, at least in their creation and, perhaps, in their significance. We may, for the present discussion, call the first view the intuitional theory, and the second the teleological theory. Let us consider each in some detail.

(a) There are two forms of the intuitional view, according as the standard of goodness is supposed to be external to the human mind or inherent within it.

(1) The view has at times been held that the standard of goodness is an immutable principle which exists outside the human mind and is wholly independent of it. Here, once again, a division arises. Those who hold the general thesis are not agreed as to the locus of the standard. It exists outside the human mind, but where? One group answers: In the nature of things. Another answers: In the will of God. The first answer was put very clearly by a British thinker, Cudworth,¹ in his famous book entitled *A Treatise Concerning Eternal and Immutable Morality*. Early in that book we find him saying: "It is not possible that anything should be without a nature, and the natures and essences of things being immutable, therefore upon supposition that there is anything really just or unjust . . . there must of necessity

¹ Ralph Cudworth (1617-1688) was one of the leading members of the so-called Cambridge Platonists—a name given to a group of thinkers who flourished at Cambridge in the late seventeenth century. He published one philosophical book during his life-time, *The True Intellectual System of the Universe* (1678); but he left a mass of manuscript some of which was published after his death.

be something so both naturally and immutably, which no law, decree, will, or custom can alter."¹ And towards the conclusion of his argument he reiterates his thesis and holds it proved: "Wherefore the result of all that we have hitherto said is this, that the intelligible natures and essences of things are neither arbitrary nor phantastical, that is, neither alterable by any will whatsoever, nor changeable by opinion . . . so that if moral good and evil, just and unjust, signify any reality, either absolute or relative, in the things so denominated, as they must have certain natures, which are the actions or souls of men, they are neither alterable by mere will or opinion."² In short, the standard of goodness exists in the nature of the world, is absolute and eternal, and not relative either to the will of man or the will of God. The contrary view is stated very clearly in the words of Gerson: "God does not require certain actions because they are good, but they are good because He requires them: just as others are evil because He forbids them."³ The standard of goodness exists, not in the natures or essences of things, but in the will of God; for the will of God there is no standard, save that will itself.

(2) The other form of the intuitional view holds that the standard, while absolute and in a sense immutable, nevertheless is inherent in the human mind itself. Good is good, evil is evil, as man wills—not individual men, be it noted, but humanity, the mind of *man*. The standard of moral values lies within the will of mankind. The classical formulation of this point of view is found in the ethical writings

¹ Book II, Chapter I, section 1.

² Book IV, Chapter VI, section 3. Descartes holds something of the same view. See his reply to the sixth set of objections raised against his *Meditations* in *The Philosophical Works of Descartes*, translated by Haldane and Ross, Vol. II, p. 251.

³ See Janet, *Theory of Morals*, p. 167; and Lecky, *History of European Morals* (third edition, revised), Vol. II, pp. 17 ff. There were other thinkers during the Middle Ages who agreed in principle with Gerson, notably the much greater philosopher, Duns Scotus. St. Thomas Aquinas, the greatest representative of the Church of the late Middle Ages, opposed this view and taught a doctrine somewhat akin to that of Cudworth.

of Immanuel Kant.¹ According to Kant there is inborn in every normal mind a moral law which is the same for all and about which there need be no dispute. This moral law he calls the "categorical imperative" and of it he gives this formulation: "Act in conformity with that maxim, and that maxim only, which you can at the same time will to be a universal law."² This, Kant argues at length, is a necessary law of human reason, and it is the foundation upon which rest all our moral judgments. Goodness, according to him, is definable only in terms of this universal law of the mind—the categorical imperative. "Duty consists in the obligation to act from *pure* reverence for the moral law. To this motive all others must give way, for it is the condition of a will which is good *in itself*, and which has a value with which nothing else is comparable."³ Consequences have no significance with reference to the determination of the goodness of conduct; results are morally indifferent. "A man's will is good, not because the consequences which flow from it are good, nor because it is capable of attaining the end which it seeks, but it is good in itself, or because it wills the good. By a good will is not meant mere well-wishing; it consists in a resolute employment of all the means within one's reach, and its intrinsic value is in no way increased by success or lessened by failure."⁴ A good will is a will which, regardless of consequences, obeys the moral law, that is, acts in such a way that the resulting conduct might appropriately be done by everybody else; such a will is intrinsically good—"a jewel

¹ In previous notes something has been said about the life and historical significance of the works of Kant. His main ethical works are: *Fundamental Principles of a Metaphysic of Morals*, and *Critique of Practical Reason*. The first was published in 1785, and the second in 1788. The two, have been translated by Abbott in a volume entitled *Kant's Theory of Ethics*.

² J. Watson, *Selections from Kant*, p. 241. Note the other formulations of the law given on pp. 242, 246 (*Kant: Selections*, edited by T. M. Greene, pp. 296 ff.).

³ Watson, *op. cit.*, p. 231. Compare pp. 225-226.

⁴ Watson, *ibid.*, pp. 225-226.

which shines by its own light,"—and it is the only thing that is intrinsically good. Every other good has only instrumental value.

The intuitional view thus holds that the standard of the good is absolute and immutable, wholly untouched by the vicissitudes of human frailty. But there is not agreement among the intuitionists as to where precisely this standard may be said to exist; some hold that it exists in the nature of things, others that it exists in the will of God, and others that it is embedded deep in the nature of human reason. All do agree, however, that consequences are of no moral significance and cannot logically play a part in the definition of goodness. Goodness is in no sense subservient to our weal or woe; in the last analysis it determines our weal and woe.

(b) The teleological theory lays the emphasis precisely upon the point which intuitionism denies. So far from minimizing the moral significance of consequences as the intuitionist does, the teleologist insists that consequences are of great moral significance, that they, indeed, are alone of ultimate moral value. The standard of goodness is to be found in the results or ends following upon the object whose moral value one is seeking to determine. There are three main forms of this view, according as the nature of the ends made basal vary. These are *hedonism*, *energism*, and *asceticism*.

(1) *Hedonism* is the theory that pleasures are the end in terms of which goodness is to be measured. That act is good which produces a preponderance of pleasure over pain; it is bad if the reverse is true. There have been many representatives of hedonism from the Greeks to the present, prominent among whom may be mentioned Epicurus and his school, Bentham, and J. S. Mill. These differ among themselves on various points in the formulation of the theory, but we cannot here discuss these differences. Their common thesis is of more concern to us, namely, that pleas-

ure is the standard by which the goods of life are to be distinguished. Mill's statement of the theory may be regarded as classic: "The creed which accepts as the foundation of morals, Utility, or the Greatest Happiness Principle, holds that actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness. By happiness is intended pleasure, and the absence of pain; by unhappiness, pain, and the privation of pleasure. . . . Pleasure, and freedom from pain, are the only things desirable as ends; and all desirable things . . . are desirable either for the pleasure inherent in themselves, or as means to the promotion of pleasure and the prevention of pain."¹

(2) Energism is the theory that the end by which goodness is to be measured is the full expression and development of the capacities of human beings. The capacity of enjoyment is one of these capacities, but only one; the hedonist, therefore, according to this view, is guilty of emphasizing one aspect of human experience to the exclusion of many other capacities—the capacity to grow, to acquire knowledge, to give one's all in loyalty to a cause, to cherish memories, to love one's fellows, to create art, and to do innumerable other things—which are equally valuable and worthy ends. So the energist would urge that, not pleasure alone, but all of the multitudinous capacities of man's nature constitute the foundation of morals, the standard of goodness. There are two formulations of this theory according as the capacities of the individual human being are conceived in social or biological terms; the one is altruistic, the other is essentially selfish or, at least, individualistic.

¹ J. S. Mill, *Utilitarianism*, Chapter II (fifteenth edition, 1907, pp. 9-10). Some other great texts of the hedonistic theory are the sayings of Epicurus and some of the writings of Lucretius (see Bakewell, *Sourcebook in Ancient Philosophy*), and Jeremiah Bentham, *An Introduction to the Principles of Morals and Legislation*. For an exhaustive historical survey, together with penetrating criticism of the several formulations of the theory, see E. Albee, *A History of English Utilitarianism*.

ALTRUISTIC ENERGISM. Here the capacities of the individual which are supposed to be expressed and developed through good conduct and by reference to which good conduct is distinguished from bad are conceived primarily in their social significance. The self that is to be succored and developed is thought of as a self which lives and moves and has its being only and inevitably in a society of selves; the capacities that are to be given free play are those that are turned in the direction of attaining the interests of the group, either directly through social activity or indirectly through the development of a loyal individual.¹

EGOISTIC ENERGISM. This form of the theory holds that the standard of goodness is the expression of the individual's capacities without any regard, or with only secondary regard, to social consequences. Here capacities are conceived primarily in biological terms, and the effort is made to found a theory of morals upon the biological concepts of struggle for existence and the survival of the fittest. Nature works through self-assertion and individualistic tendencies, and so should man; goodness, in the only sense in which it has intrinsic value for human beings, is self-aggrandizement.²

(3) Asceticism is largely a negative theory of goodness. It looks upon the natural desires of the individual, particularly those that are primarily connected with the body, as

¹ This conception of the good has been advocated by many thinkers from Plato and Aristotle down to our own day, though with differing emphases. Two typical and relatively simple formulations of it may be found in: F. Paulsen, *A System of Ethics*, Book II, Chapter II; and H. W. Wright, *Self-Realization*, Part II, Chapters IV and V.

² The writings of F. Nietzsche present the most persuasive account of this ego-centric view. These works have been translated from the German under the editorship of Tille, and so are available to English-reading students. They have been widely read, and have exerted a very appreciable influence upon contemporary social thought. Compare the views of Thomas Hobbes (*Leviathan*) and Niccolò Machiavelli (*The Prince*). Opposed to Nietzsche and his views stand most of the other classical philosophers. For a simple introduction to Nietzsche see Wright, *What Nietzsche Taught*.

ignoble ; and it conceives goodness as arising from the elimination or, if that be impossible, the curbing of such desires. In its extreme form asceticism indulges in the mortification of the flesh ; practiced in greater moderation it may be content with the withdrawal of the individual from indulgence in the ordinary comforts of life, with the renunciation of all social relations and obligations, or with a refusal to participate in those types of pleasure which many people pursue as a matter of course. As a general theory of the good, however, it seeks its standard in some form of self-denial and self-discipline, whatever may be the variations in practice that result.

Generally this view of life is closely connected with religious convictions, though this is not universally the case. The Cynics of ancient Greece advocated the theory in the interest of purely moral considerations ; and so did the Stoics, though in a greatly modified form. The religious motive is prominent, however, in the practices of some parts of the Christian community of the early Middle Ages, the monastic orders, and in the similar groups of Buddhist priests. Where the religious note is prominent the notion of other-worldliness assumes paramount importance in the theory ; that is, the motive for the denial of present desires and the delimitation of interests is for the sake of the life to come. Tennyson has vividly portrayed this motive, which the history of religious asceticism amply illustrates, in *St. Simeon Stylites* :

Let this avail, just, dreadful, mighty God,
 This not be all in vain, that thrice ten years,
 Thrice multiplied by superhuman pangs,
 In hungers and in thirsts, fevers and cold,
 In coughs, aches, stitches, ulcerous throes and cramps,
 A sign betwixt the meadow and the cloud,
 Patient on this tall pillar I have borne
 Rain, wind, frost, heat, hail, damp, and sleet, and snow ;
 And I had hoped that ere this period closed

Thou wouldst have caught me up into Thy rest,
Denying not these weather-beaten limbs
The meed of saints, the white robe and the palm.¹

Such in principle is the aspiration of the religious ascetic. ¶ But whether religious complications are involved in asceticism or whether the theory be founded exclusively upon morality, the essence of it remains: goodness lies in restraining, curbing, and, it may be, mortifying the ordinary needs and desires, both bodily and mental, and in persistent refusal to gratify them.

The teleological view of the nature of goodness, then, seeks the standard within the vicissitudes of human experiences. The *hedonist* finds the criterion in pleasures and pains, either of the individual mind (Epicureanism) or of the society of minds (Utilitarianism). The *energist* denies that pleasure alone is a satisfactory criterion and enlarges the standard so as to include all of the ends which human beings normally hold to be valuable as a means to the maintenance and development of the entire personality conceived either in ego-centric (selfish or individualistic) or altruistic (social) terms. The *ascetic*, finally, hopes to attain goodness by the negative standard of self-abnegation and self-denial, which is regarded as a good in itself and valuable on its own account (Cynicism) or valuable only as a means to the attainment of a better life in the hereafter (religious asceticism).

(c) Looking back over these several views of goodness, one can see that some of the sub-forms of each theory are open to easy criticism. That the standard of goodness exists external to the human mind, whether in the nature of things or in the arbitrary will of God, is, in the first place, not easily proved; and the thesis involves so many difficult

¹ This poem is a biting criticism of the ascetic ideal of life. It is also a subtle study in the psychology of asceticism; the insidious manner in which self-mortification metamorphoses itself into a refined and unconscious egoism is skillfully pictured. The poem deserves careful study. For a contrasting philosophy of life, see Browning's poem, *Rabbi Ben Ezra*.

implications that one is not willing to accept it if a simpler hypothesis be possible. Likewise, hedonism, both egoistic and social, can hardly be accounted a satisfactory view of the nature of intrinsic goodness; for many pleasures are deemed bad by us just as many pains are good, and some pleasures are held to be better than other pleasures, not because they are more intense or last longer, but because they are what they are. The pleasure one gets from loyalty to a noble cause, for example, even though it perchance be less intense, is better than the pleasure one might derive from lazily indulging oneself in idle fancies. And in the light of such facts it is difficult to see how pleasure, or its privation, could possibly be the ultimate criterion of intrinsic moral worth. Again, any theory of goodness which would identify it with individual interests exclusively, or even primarily, is open to question because it fails to take into account the society of minds of which each individual is a part; it forgets that the interests and welfare of the individual are inextricably bound up with the interests and welfare of the group. Finally, asceticism is unsatisfactory both practically and theoretically; it fixes too much attention upon the "temptations" of life, it violates human nature by suppressing its tendencies, and it is a purely negative conception of goodness.

Taking into account only the main tenets of intuitionism and the teleological view of goodness without any reference to the variations in their formulation, two observations stand out fairly clearly. (i) In the first place, there would appear to be an element of truth in each theory which no sound view of life can afford to neglect. On the one side, the intuitionist's contention that the standard of goodness is somehow independent of the contingencies of human experience must be accepted in principle; otherwise the standard of morality degenerates into prudence and expediency, and a moral theory is rendered impossible. On the other side, the teleological theory makes goodness a matter of

genuine concern in the practical affairs of human beings and gives to morality a precise content that can be concretely defined and scientifically observed. (ii) And, in the second place, neither the intuitional nor the teleological view, taken by itself and in its extreme form, is ultimately satisfactory; each contains an element of truth which the other neglects. Intuitionism leaves the concept of goodness more or less vacuous, sundered from concrete experiences and so abstractly defined as to prove elusive both in theory and in practice; while the teleological view, untutored by the principles advocated by intuitionism, tends to make goodness wholly relative to passing experiences and, so, to rob it of that measure of absoluteness which it seems unquestionably to possess.

Detailed consideration of these theories, however, properly falls in the field of ethics, and the reader must look to the texts in that field for the details.¹ It remains for us here to emphasize the fact that the problem of the nature of goodness is the seed-plot out of which other pressing problems grow, and to turn to a consideration of the first of these—namely, the problem which is traditionally known as the problem of the freedom of the will.

§ 2. *Freedom of the will*

This problem is a very ancient one in philosophical debate. The ancient Greeks, to be sure, were not greatly concerned with it; they generally assumed that man in some sense is a free agent and did not bother to inquire in what

¹ These texts are numerous. Among them, the following may be mentioned as touching the basal points: H. W. Wright, *Self-Realization*, especially Part II; F. Paulsen, *A System of Ethics*, Book II, Chapters I, II, and VI; J. Seth, *Ethical Principles*, Part I; F. C. Sharp, *Ethics*, especially Chapters XIV-XVII; W. G. Everett, *Moral Values*, Chapters II-VI; Dewey and Tufts, *Ethics*, Part II, especially Chapters XI-XIII (2nd edition). For general reading: W. D. Hyde, *The Five Great Philosophies of Life*; G. H. Palmer, *The Nature of Goodness*; G. E. Moore, *Principia Ethica*; W. D. Ross, *The Right and the Good*.

sense and on what grounds the assumption may be held or what, if held, are the ramifications of it. But with the beginning of the Christian era and the emergence of the problem of evil, the problem of free-will assumed great importance in European thought, largely, no doubt, because of its connection with the problem of evil and its consequent religious bearings. And from that time on, despite the fact that occasional thinkers have minimized its importance,¹ it has been prominent in discussions of the fundamental aspects of both the moral and the religious experiences. Nor would one be far wrong, presumably, in taking its persistence as evidence that it at least touches issues of basal significance.

(a) It is unquestionably true that the problem is of importance in the field of reflective religious experience. Whether or not the human will is free, and if so in what sense, are questions which no even tolerably adequate theology can wholly escape; the fortunes of the crucial conception of redemption are bound up in them. Were human beings not in any genuine sense free in their volitions, it is not easy to understand how the claims of the religious consciousness could be anything more than illusory. "Our wills are ours, to make them thine" is the basal faith of the religious devotee; and unless our wills are *ours*, in the first instance, such a faith could hardly be more than an empty mockery. On the other hand, they cannot be merely *ours*, otherwise their surrender becomes an inexplicable mystery if not an open absurdity. It is not surprising, therefore, that discussion of the freedom of the will has historically been involved with theological dogmas. The logic of the situation demands it, at least so far as the dogmas of the Christian religion are concerned. From this point of view, anything like adequate analysis of free-will is inextricably bound up with questions about God, man, and their rela-

¹ See, for instance, H. Sidgwick, *The Methods of Ethics*, Chapter V (6th edition, 1901).

tion to each other. And so it has happened, not infrequently in the historical development of the controversy, that discussion of the problem of free-will has wandered off into a labyrinth of questions about creation, predestination, and the like.

This is clearly illustrated in the writings of the thinkers of the Middle Ages. In the early centuries of the Christian era there was a group of thinkers, known as the Church Fathers, who were much interested in rationalizing the then new faith. This indeed was a necessity, since they found themselves compelled to bring their religious beliefs into harmony with the intellectual point of view which had been bequeathed by Greek thought to the Romans. In the course of their speculations the Fathers met, as was inevitable, many pressing problems. The problem of the origin of evil was one of these, and they rightly regarded it as of fundamental importance in a reasoned consideration of the doctrines basal to the Christian faith. They therefore discussed it at length and with considerable fervor. Two assumptions, or, rather, two theses which they supposed finally settled, lay at the bottom of the controversy. One of these was that man, having been created by God, must have been originally good and only good; the other was that man, as he now is, "is as prone to evil as the sparks are to fly upwards." How, then, did man come to be evil? The only answer that seemed to these thinkers logically possible was: Man himself is responsible. When God breathed into his nostrils the breath of life and man became a living soul, he was pure and spotless, untouched by sin, innocent of evil ways; through a free act of will Adam, the first man, disobeyed the command of God and fell, and with him fell the entire race of mankind. Evil is sin; sin is transgression of God's will, disobedience to God's commands; man's will transgressed. Thus came evil into the world; the free will of man is its gateway. ✓ The postulate of freedom is there-

fore necessary as an explanation of the fact of evil.¹ This solution of the problem of freedom was, of course, not original with the Church Fathers; it is more or less clearly outlined in various passages of the epistles of St. Paul, particularly in those passages whose aim is to rationalize the atoning sacrifice on Calvary. But it was accepted, defended, and expanded by the early Fathers, especially St. Augustine; and it made its way into the views of St. Thomas Aquinas, Luther, Calvin, and a host of other theologians of the centuries following. Gradually it ramified through popular theology and has at last become so deeply rooted in it that to many minds a separation of the problem of freedom from its theological context seems impossible in any serious discussion of it.

It would be interesting and profitable to study these farther reaches of the debate, and we shall briefly return to them later on when we come directly to discuss the religious consciousness. For a first approach to the problem of freedom, however, it is better to eliminate such considerations from the scope of our inquiry. Indeed, it is necessary to do so. Enmeshed in its theological setting the problem is practically hopeless from the beginning. There are here so many by-paths not clearly marked, so many labyrinths of traditional feelings and preconceptions, so much vagueness in short, that a straight-forward following of the main problem is rendered practically impossible. So we shall arbitrarily leave aside the religious bearing of the problem and endeavor to fix attention upon its simpler and more immediate phases. If by so doing we lose in comprehensiveness, we shall at least gain in definiteness. What is the empirical evidence that man is free, and in what sense may his freedom be defined? This is the question now before us.

(b) Before going on to a consideration of the question whose answer we are seeking, we must briefly enter upon a further preliminary statement which may serve to impress

¹ On the point, see R. A. Tsanoff, *The Nature of Evil*, Chapters I, II.

upon us the significance of our problem. In the preceding section we said that goodness is the seed-plot out of which the problem of freedom grows. Let us inquire a bit further into the meaning of this.

¶ Many aspects of our environment we do not judge morally. The events of the physical order do not ordinarily fall within the scope of our moral judgments; though we may regard an earthquake as a tragic calamity, we do not say that it is bad in the moral sense of the term. It, like all natural events, is morally indifferent. And the same is true of the animal kingdom below man. We may for one reason or another hold the brute creation in esteem or disesteem, but it lies beyond the reach of our moral approbation or disapprobation. In their immediate application moral values belong exclusively to the social environment; they have to do only with human conduct and human institutions. But even here there are exceptions. The child that has not, as we say, reached the age of accountability, the permanently insane person, and the person momentarily deranged by the stress of extraordinary emotional excitement—these are not commonly regarded as strictly moral agents; we do not evaluate their acts or their character by reference to a moral standard. In short, there are some things we judge morally, and others we do not so judge; some persons are moral agents, and others are not. Why these differences? Where do the boundaries of morality lie? What are the distinguishing marks of a moral situation?

Only a summary answer to the question will here be attempted. It is commonly agreed that moral goodness, or the reverse, is present where responsibility (moral, not legal) is present. And by moral responsibility is meant such a relation between the agent and his deeds that he can be censured or praised because of them. Now this relation is commonly supposed to be conditioned by a certain initiative or spontaneity on the agent's part usually,

denoted by the phrase "freedom of the will." Thus freedom seems, in general opinion, to be the distinguishing mark of a moral situation; at least, it is apparently an indispensable element within the moral situation. No freedom, no goodness!—this is the common assumption. And there is reason to hold that it is more than an assumption. It would appear to touch something fundamental in the creation of moral values, and some of the greatest minds have attempted to establish its foundational character.¹ It might perhaps be more appropriately called—as Kant called it—a necessary postulate of morality than an assumption; certainly it is not an unsupported assumption.

Thus it is that the problem of freedom grows directly out of the concept of goodness. A consideration of the problem therefore is of extreme importance from the standpoint of the group of moral values.

(c) The first view of freedom that we shall consider is an outright denial of it. This is the view of the fatalist who holds that every event in the universe, the human will included, is bound by the iron grip of eternal and immutable laws. There is no freedom anywhere, only an unbending necessity.

(1) Two emphases of fatalism should be distinguished, though in principle they are the same.

NATURAL EVENTS FIXED ABSOLUTELY. On the one side, fatalism insists that every natural event—particularly death—is predetermined both as to the manner in which it shall occur and the time at which it shall take place. All events are bound to happen in a certain way and at a certain moment, and there is no possible interference with this necessity. "Thus a woman believed that she was fated to be drowned at sea; and when a steamer in which she had taken passage was wrecked, she refused to enter a life-boat, because, as

¹ The classic argument here is that advanced by Kant in his *Metaphysic of Morals* and *Critique of Practical Reason*. The argument is difficult, but it well repays study. The relevant parts of F. Paulsen's *Immanuel Kant* will prove helpful as a commentary.

she said, she would only bring disaster to the others in the boat. A Filipino quack doctor made the most extravagant claims with regard to his healing powers. When a number of his patients died, he was not in the least disconcerted. He had been perfectly able to cure them, he said, but *their time had come*—as, indeed, the fact of their death proved. And when a man's time has come to die, nothing can prevent it!¹ This is one emphasis of fatalism.

HUMAN DESTINY PREDETERMINED. On the other side, fatalism emphasizes the thesis that the destiny of human beings is eternally fixed by the forces of the universe. The deeds one does, the sufferings one undergoes, the ideals one entertains, the character one has—these are the products of the external order of nature. What is to be in a man's life will be, down to the minutest details; his destiny is written in the stars, and nothing he or anybody else can do will change it in the least degree.

The Moving Finger writes; and, having writ,
Moves on: nor all thy Piety nor Wit
Shall lure it back to cancel half a Line,
Nor all thy Tears wash out a word of it.

"Whatever may happen to thee, it was prepared for thee from all eternity; and the implication of causes was from eternity spinning the thread of thy being, and of that which is incident to it."² This is the strictly moral side of fatalism.

(2) If the fatalist's contention be true, then clearly man's freedom is an impossibility; his world and he as a cog within it are rigidly bound by the iron laws of an unyielding necessity. That this contention contains some truth there need be no question. Every event in the universe presumably stands causally related to other events; and the finite in-

¹ T. De Laguna, *Introduction to the Science of Ethics*, p. 57.

² Marcus Aurelius, *Meditations*, Book X, section 5. See the selections from the translation by Long given in B. Rand, *The Classical Moralists*, pp. 144-160.

dividual is immersed in an engulfing environment which, as we have already urged, is of compelling significance to his life and character. There is in the fatalist's view, however, a deep-seated error. And that lies in his failure to take cognizance of the fact that in the ongoings of the world new events are continuously happening and that the destiny of each individual is to a very great degree dependent upon what the particular individual is and does. In other words, the fatalist overlooks the true significance of time. "There is nothing new under the sun" expresses an important truth, but it is an unwarranted exaggeration; there is also novelty, the continuous transformation of the old into the new. "Character is determined by environment" is, in its turn, not wholly erroneous; but it is only a half-truth. The individual's ways of thinking and feeling are determining factors in the social order. "Dependent upon a cosmic Power we all indeed are, but the fact that this Power accomplishes certain ends only in and through our thinking and willing, is disregarded by fatalism."¹ For these reasons, then, it would appear that fatalism is an unsatisfactory view of man and his place in his world. The denial of freedom in any and every sense of the term flies in the face of facts, namely, moral values; the conception of the world as so rigid that in it moral values cannot bud and grow must in the end show itself to be unworthy of our intellectual allegiance.

(d) Among those who insist upon freedom and so stand opposed to fatalism, there is a rather sharp difference of opinion concerning the meaning that is to be attached to freedom. In the main two views have been held, namely, indeterminism, or libertarianism, and determinism.

Indeterminism is the view that man's will is free in the sense that it is uncaused. At the moment of action, so the indeterminist holds, there are real alternatives before the will; one or the other may be chosen indifferently. To be

¹ W. G. Everett, *Moral Values*, p. 364.

sure, the agent's character, his past history and present purposes and impulses, exert an influence upon the will by delimiting the possibilities open to him in the moment of choice. What the indeterminist primarily insists upon is that real possibilities are always open and that the choice might very well have been different. He finds freedom, thus, in a genuine spontaneity of the will that expresses itself in an undetermined choice within a limited field of possibilities.¹

The determinist maintains, on the other hand, that the agent's will is always determined in the moment of willing, not by wholly external forces as the fatalist claims, but by the tendencies, the impulses and purposes, that belong to the agent's character. The act of choice is not uncaused; like any other event, it is always an element within a causal situation. It is the result of conflicting forces, namely, the motives present in the moment of choice. These forces are not external to the agent's character, but are elements within it. Hence the individual is in a sense free—free, that is, to follow the bent of his own nature and to express in conduct tendencies that belong to him as a rational being. For the determinist, then, freedom is not to be sought in an uncaused spontaneous act of choice among alternatives, but in the capacity inherent in each moral agent to determine the bent of his own character. Freedom, in short, means for him, not indeterminism, but self-determinism—self-expression and self-development.

The main point of difference between the indeterminist and the determinist is that the former insist upon an uncaused act of choice which the latter denies. Both agree that freedom is predicable of human experience. For the indeterminist, however, this freedom lies in a spontaneous and uncaused power to choose among given possibilities;

¹ This point of view is developed and defended by William James in an essay entitled, "The Dilemma of Determinism" published in the volume *The Will to Believe*.

whereas, for the determinist, freedom means the power which the individual has (the power of reason) to appreciate and consciously to follow the deeper demands of his own nature.

The arguments which the indeterminist advances in support of his thesis are mainly three:

DIRECT CONSCIOUSNESS OF FREEDOM. At the moment of choosing everyone feels that the act of choice is undetermined, and that the result of the choice might very easily have been different; if the choice were to be made over, the opposite alternative could readily be accepted. This immediate (or "intuitive") feeling that the act of choosing is arbitrary, which all of us experience in moments of decision, is one of the facts upon which the indeterminist builds his theory of an uncaused will. We feel that our will is uncaused, and hence it must be so.

MORAL RESPONSIBILITY PRESUPPOSES AN UNDETERMINED WILL. It is an ordinary fact of experience that moral agents are held responsible for their choice; that is, their choices are praised or censured *as their own*. The philanthropist is praised for his benevolence; the murderer is censured and punished for his crime. This attribution of responsibility would be wholly unreasonable, so the indeterminist argues, if man were not free in the moment of decision, that is, if it did not lie in his power to have decided otherwise. The fact of moral responsibility on the agent's part is, thus, a second pillar in support of indeterminism.

INDETERMINISM OR FATALISM. Finally, the indeterminist argues that if his view is erroneous fatalism is necessarily true. Either freedom is impossible, or freedom means uncaused choice; there is no other alternative. Determinism is an unsatisfactory position which can be accepted only so long as it is not completely thought out; think it through and it will be seen to be logically indistinguishable from fatalism. The denial of freedom is implied in it. Indeter-

minism, therefore, is the only intelligible view of freedom.

On his side of the controversy the determinist presents the following arguments:

PSYCHOLOGICAL ANALYSIS OF VOLITION PROVES HIS CASE. An unbiased analysis of the so-called act of choosing as it takes place in human experience reveals the fact that it always results from a given set of conditions and has no existence apart from these conditions. Every choice is motivated, and the strongest motive wins. To be sure, these determining factors are not external to the nature of the agent; they are elements within his character, *his* motives, and the neglect of this fact is the basal error of fatalism. But it is equally clear that they are causally related to the act of choice; they are the set of conditions out of which it springs and apart from which it simply would not happen. The philanthropist and the murderer choose as they do, because they are as they are; being as they are they could not do otherwise.¹ Psychological analysis proves determinism; it reveals no unmotivated or uncaused act of choice, and hence there is none.

MORAL RESPONSIBILITY PRESUPPOSES DETERMINISM, NOT INDETERMINISM. That we attribute responsibility to moral agents for their deeds the determinist does not wish to deny. What he does deny is the indeterminist's claim that this is an argument for indeterminism as a view of freedom. If one could choose indifferently, without reference to what one has been in the past and to the motives or tendencies present at the moment of choice, one could hardly be held responsible for the results; for one could then claim, and with justice, that the deed after it is done is not his very own but only the product of the arbitrary will or choice of the moment. To be responsible for a deed, the deed must be mine. But how could a deed be mine now, if it was done in the past and was at the time the product of an arbitrary choice? Does

¹ Compare the famous statement of Luther at the time of his trial: "*Ich kann nicht anders.*"

it not belong exclusively to that arbitrary choice, and might I not now choose the exact opposite if it were to be done over again? So far from its being true, then, that indeterminism is implied in responsibility, responsibility is a difficulty in the way of the theory. Determinism alone offers a basis upon which to rest an intelligible justification of moral censure or praise.

DETERMINISM IN KEEPING WITH SCIENTIFIC ASSUMPTIONS CONCERNING CAUSATION. The scientific enterprise of mankind, as we have seen above, is based upon the general assumption that events are always found as elements within a causal situation. While it is true that this assumption cannot be specifically proved beyond question, it seems to be a fundamental postulate of reason and is justified by the progress of the sciences; it can therefore be taken as a reasonable hypothesis. Now, indeterminism stands in flat contradiction of it, since the will of man is made by this theory an exception to the law of causation. Determinism, on the other hand, stands in harmony with the postulate; the act of will is, as this view conceives it, like every other event in the world enmeshed in the causal nexus. And this fact, the determinist urges, is a strong support of his conception of freedom: it does not do violence to the scientific attitude of mind.

(e) No attempt will here be made to award the decision in the controversy about free will. The reader must think the matter through for himself, and arrive at his own decision. In his efforts to do this the following points may prove helpful:

(1) The first argument of the indeterminist is weak and inconclusive. Granting that there is a universal feeling of freedom (in the indeterminist's sense) at the moment of choice or decision—which is psychologically questionable,—it does not necessarily follow that freedom in this sense exists. The feeling that will is uncaused may signify noth-

ing more than our ignorance of the causes actually operative within the decision.¹

(2) As regards the argument from responsibility, this much seems evident: we do not ordinarily attribute responsibility to persons who are of such a nature that their present conduct is uninfluenced, consciously and selectively, by their past experiences. This is precisely the reason why we do not hold the immature child or the lunatic responsible morally; their activity is not called forth and directed by ideas of value or worth. Now is not any will, conceived as the indeterminist conceives it, in exactly this status? It would seem that a will which by hypothesis is totally uninfluenced *in its choice of the moment* is by definition irresponsible. The determinist scores here rather than the indeterminist.

¹ Spinoza's statement on this point is classic. Let us assume, he says, "what ought to be universally admitted, namely, that all men are born ignorant of the causes of things, that all have the desire to seek for what is useful to them, and that they are conscious of such desire. Herefrom it follows that men think themselves free [in the indeterminist's sense] inasmuch as they are conscious of their volitions and desires, and never even dream, in their ignorance, of the causes which have disposed them so to wish and desire" (*Ethics*, Appendix to Part I; *Spinoza's Works*, Elwes' translation, Vol. II, p. 75). In his correspondence he illustrates the point thus: "Conceive, I beg, that a stone, while continuing in motion, should be capable of thinking and knowing, that it is endeavoring, as far as it can, to continue to move. Such a stone, being conscious merely of its own endeavor and not at all indifferent, would believe itself to be completely free, and would think that it continued in motion solely because of its own wish. This is that human freedom, which all boast that they possess, and which consists solely in the fact, that men are conscious of their own desire, but are ignorant of the causes whereby that desire has been determined" (*Spinoza's Works*, translation by Elwes, Vol. II, p. 390).

Benedict Spinoza (1632-1677), of Jewish descent, was trained for the profession of a rabbi. He early decided, however, to devote his life to philosophical inquiry, and he carried out this decision despite poverty and persecution. The purity of his ideals and his unreserved loyalty to the search for truth make him one of the most picturesque figures in the history of philosophy. He was early excommunicated from the synagogue, and shunned by Jews and Christians alike. He has sometimes been called an atheist; the truth is he taught that God is the only reality. He lived the larger part of his life in solitary retirement in Holland. For an interesting account of his life see F. Pollock, *Spinoza: His Life and Philosophy*, Chapter I; a translation of the sentence of excommunication is given on pp. 17-18.

(3) The indeterminist's argument that the disjunction confronting us is "either indeterminism or fatalism" is not logically sound if the determinist can indicate *one* important difference between his view and that of the fatalist and at the same time keep from falling back into the indeterminist's thesis. For an exclusive disjunction is logically valid only if it exhausts the possibilities in the situation.

(4) The determinist's appeals to the universal principle of causation and to concrete psychological analysis of motivation would appear to be strong points in his favor. In his first appeal he has behind him the postulate and procedure of all the sciences; in his second appeal the psychologist is with him, at least so far as specific acts of choice are concerned, since the psychologist admits no undetermined acts of choosing. From these two points of approach the position of the determinist would seem to be stronger than that of the indeterminist.

(5) The main significance of indeterminism, the element of truth within it, lies probably in its insistence that man is in some sense master of his destiny and is not merely the helpless sport of his environment. The significant points in determinism are: its opposition to the notion that "chance" is anything more than an expression for our ignorance of causal sequences; and its insistence upon the rôle played by an individual's character, his tendencies to react, in the determination of his present conduct. As opposed to fatalism both views are right. Does determinism leave room for the element of truth emphasized by the indeterminist?—this is the question finally at issue in deciding between the relative merits of these two views of freedom.

(6) Throughout the debate, finally, it is essential to distinguish between two views of will—namely, as an "agent" or "faculty" of mind existing in its own right, and as the co-ordination and systematization of desires and impulses through deliberative insight and foresight. The former, though it has often been assumed in the historical course of

the debate, is nowadays generally discarded by psychologists; the latter is the true view of the nature of will, and is therefore indicative of the sort of activity whose "freedom" is in question. As Dewey and Tufts truly observe: "Will, in the sense of unity of impulse, desire, and thought which anticipates and plans, is central in morals just because by its very nature it is the most constant and effectual factor in control of consequences."¹ And this is the only sense of the word in which freedom of the will can be significantly debated.

¹ *Ethics*, second edition, p. 185. For psychological analyses of will, see: K. Dunlap, *A System of Psychology*, Chapter XV; W. B. Pillsbury, *The Essentials of Psychology*, Chapter XIII; J. R. Angell, *Psychology*, Chapters XX-XXII; W. James, *The Principles of Psychology*, Vol. II, Chapter XXVI.

CHAPTER XV

CONSERVATION OF GOODNESS: BELIEF IN IMMORTALITY

In the previous chapter we have been concerned with goodness viewed exclusively with reference to the life that now is. What, we there asked, is the nature and what the conditions of goodness in relation to man's social environment. But goodness apparently belongs to a larger canvass. "If a man die, shall he live again?" is a question which multitudes besides Job have asked; and like him, they have asked it in the conviction that an affirmative answer must be given or the final conservation of goodness be denied. If a man die and not live again, the conviction is, the present life can be nothing more than a bad play; on such an assumption, "all is vanity and vexation of spirit." Even those who insist upon a negative answer are in the end driven to admit that goodness and its conditions are the chief items on the side of the ledger against them. Immortality¹ and goodness they find to be intimately linked, adequate analysis of the one necessarily involving reference to the other.

How should Job's question be answered? Is an affirmative answer justifiable through analysis, or is it nothing more significant than an expression of a groundless faith? Let us briefly inquire how the matter at present stands.

§ 1. *Belief in immortality*

It is by no means clear that all people believe in immortality, as is sometimes assumed. On the contrary, it is

¹ Here and throughout, this word is used to refer to personal immortality—the continued existence after death of personal consciousness in some form.

quite clear that such is not the case. There are many individuals who do not hold such a belief, as is abundantly shown in such a statistical study as that made by Professor Leuba in Part II of his *The Belief in God and Immortality*. It is also not to be forgotten that primitive peoples generally have no belief in immortality in the usual meaning of the term. To be sure they pretty generally believe in some sort of survival after death, but the "ghosts" or "spirits" which are by them supposed to survive enjoy no existence comparable to that which the modern man thinks of as immortality.¹ And it is to be remembered also that one of the great religions of the world, Buddhism, denies the desirability of immortality and seeks a way of escape from it.

On the other hand, there are many who yearn for and believe in continuance of personal existence in a happier state than this, where presumably gross inequalities and apparently undeserved misfortune shall be righted and "sorrow and sighing shall flee away." Such a belief is deeply embedded in most of the great religions, particularly Christianity and Mohammedanism; and even Buddhism is not without its conviction that a sort of immortality, however undesirable and dreaded it may be, is the lot of all who have not received complete and final illumination in the "eight-fold path" that shows the way of escape from its thralldom. Over against the many unbelievers stand, then, the host of those who believe, if not in the desirability of immortality, at least in its reality.

Thus humanity is divided into two groups with reference to the belief in personal survival of bodily death. It would perhaps be impossible to say into which group the majority fall, though the supposition generally accepted is that the believers outnumber the unbelievers. However that may be, these two groups exist; that is an indisputable psychological and historical fact.

¹ See J. H. Leuba, *The Belief in God and Immortality*, Chapters I-IV.

§ 2. *The problem of immortality*

For those who venture to believe in personal survival of death, "the Arch Fear in a visible form" is a formidable monster. There is in fact no escape from his power. All that breathe must die—this is the irresistible truth which common observation and scientific discovery alike force upon us. Death is a universal and, we now know, necessary biological phenomenon. 7

Out—out are the lights—out all!
 And over each quivering form
 The curtain, a funeral pall,
 Comes down with the rush of a storm,
 While the angels, all pallid and wan,
 Uprising, unveiling, affirm
 That the play is the tragedy "Man,"
 And its hero the Conqueror Worm.

Translated into plain prose, Poe's allegory states a simple, if disagreeable, biological fact. And so between the believer in immortality and his paradise there flows the cold and sullen stream into which all must enter and egress from which is possible, if at all, only on the farther bank which is ever hid in apparently impenetrable mists. Where then is there justification for the belief in immortality? Face to face with the inevitable Catastrophe, can man still believe? Has the believer a rational right to his faith?

The history of the reasoned consideration of the problem of immortality is the story of the attempts that man has made to square the hypothesis of immortality with his intellectual conscience. Some have insisted that this can be done only through an out-and-out denial of the hypothesis; others have held that the hypothesis can be made consistent with a reasoned view of the world. Our purpose in the present brief study of the problem is to acquaint ourselves with the arguments that have been marshalled in support of this latter view. Only the main arguments fall here to be con-

sidered ; and even among them we shall be compelled to leave on one side those which, because of their intimate connection with certain historical systems of philosophy, are unintelligible apart from those systems.¹

§ 3. *Arguments in support of the belief*

(a) Socrates was deeply interested in problems connected with human life. Though his primary concern was with the problems that have to do directly with the present life, he was not wholly indifferent to the mysteries of the future ; and we may readily suppose that his interest in the problem of immortality was greatly increased during those last few days of his life between his condemnation and his tragic end. If we may accept the account given by Plato in the *Apology* as an approximately faithful exposition of Socrates's final views on immortality, we may say that this remarkable thinker got no farther with the problem than an optimistic agnosticism. He argues, in effect, that we do not certainly know whether there is anything like a personal life after death ; but, whether there is or whether there is not, death, at least for those who in this life have lived well, is a gain. For if, on the one hand, death is the complete cessation of consciousness, all sensation ceases and with it all cares and sorrows ; death is then but a restful, dreamless sleep from which there is no waking.² If, on the other hand, death is not the end of all, then there is something beyond

¹The reference here is to such arguments as those involved in the systems of Spinoza and Hegel—to mention two outstanding examples.

²Compare the musical lines of Swinburne:

From too much love of living,	Then star nor sun shall waken,
From hope and fear set free,	Nor any change of light ;
We thank with brief thanksgiving	Nor sound of waters shaken,
Whatever gods may be	Nor any sound or sight ;
That no life lives forever ;	Nor wintry leaves nor vernal,
That dead men rise up never ;	Nor days nor things diurnal ;
That even the weariest river	Only the sleep eternal
Winds somewhere safe to sea.	In an eternal night.

(*The Garden of Proserpine*)

which, to the good man at least, offers untold possibilities of happiness and development. So in either event, whether death is the final act of the drama of life or is only the beginning of a new play, for the good man there is in it nothing but gain.

Plato's inimitable statement of this argument must here be set down in part; the student should read it entire and in its dramatic setting. It is the conclusion of Socrates's speech of defense before his judges, and is delivered after the sentence of death has been pronounced upon him. Having prophesied that soon after his death his judges will be called to account for his unjust execution and having expressed his conviction that death to him can be no evil since his accustomed "sign"¹ has not warned him to the contrary, he continues: "And if we reflect in another way we shall see that we may well hope that death is a good. For the state of death is one of two things: either the dead man wholly ceases to be, and loses all sensation; or, according to the common belief, it is a change and a migration of the soul unto another place. And if death is the absence of all sensation, and like the sleep of one whose slumbers are unbroken by any dreams, it will be a wonderful gain. For if a man had to select that night in which he slept so soundly that he did not even see any dreams, and had to compare with it all the other nights and days of his life, and then had to say how many days and nights in his life he had spent better and more pleasantly than this night, I think that a private person, nay, even the great King [of Persia] himself, would find them easy to count, compared with the others. If that is the nature of death, I for one count it a gain. For then it appears that eternity is nothing more than

¹ Socrates often speaks of this "sign" or "inner voice" which frequently warned him when he was about to undertake that which, as he said, was not for his good. It seems that the "sign" was negative merely, telling him what not to do. Socrates apparently regarded it with religious awe and reverence; Plato usually makes him speak of it as divine, "the sign of God."

a single night. But if death is a journey to another place, and the common belief be true, that there are all who have died, what good could be greater than this, my judges? Would a journey not be worth taking, at the end of which, in the other world, we should be released from the self-styled judges who are here, and should find the true judges, who are said to sit in judgment below, such as Minos, and Rhadamanthus, and Æacus, and Triptolemus, and the other demi-gods who were just in their lives? . . . I am willing to die many times, if this be true. . . . And, above all, I could spend my time in examining those who are there, as I examine men here, and in finding out which of them is wise, and which of them thinks himself wise, when he is not wise. What would we not give, my judges, to be able to examine the leader of the great expedition against Troy, or Odysseus, or Sisyphus, or countless other men and women whom we could name? It would be an infinite happiness to converse with them, and to live with them, and to examine them. Assuredly there they do not put men to death for doing that. For besides the other ways in which they are happier than we are, they are immortal, at least if the common belief be true.

“And you, too, judges, must face death with a good courage, and believe this as a truth, that no evil can happen to a good man, either in life, or after death. . . .

“But now the time has come, and we must go hence ; I to die, and you to live. Whether life or death is better is known to God, and to God only.”¹

(b) Plato was not himself content to accept the cheerful agnosticism of his master concerning immortality. He demanded a fuller inquiry into the problem. Such an inquiry he undertakes in his various dialogues, and he develops some ten arguments by which he thinks the immortality of

¹ From Church's translation of the *Apology* in the volume, *The Trial and Death of Socrates* (Macmillan, "Golden Treasury Series," pp. 76-78).

the soul can be rationally established.¹ Among these there is one of great historical importance, namely, that which is based upon the supposed "simplicity" of the soul. The soul—so the argument runs—is a simple entity in the sense that it is uncompounded; it is therefore indissoluble; hence by its very nature the soul cannot die, since death is nothing but dissolution.²

This argument was accepted in principle by many later thinkers. During the Middle Ages it was commonly regarded as one of the strongest arguments for immortality, though naturally it was colored by the theological bias of the thinkers of this period. And in modern thought, down at least to the time of Hume and Kant, the argument was by many supposed to have great weight. Berkeley, for instance, ends a discussion of the problem with the following conclusion: "We have shewn that the soul is indivisible, incorporeal, unextended; and it is consequently incorruptible. Nothing can be plainer than that the motions, changes, decays, and dissolutions which we hourly see befall natural bodies (and which is what we mean by the *course of nature*) cannot possibly affect an active, simple, uncompounded substance: such a being therefore is indissoluble by the force of nature; that is to say—the soul of man is naturally immortal."³ The soul of man is "simple," that is, uncompounded; it is therefore by nature incapable of disruption, and hence by nature is immortal—such is one of the very ancient arguments for the immortality of the soul.

(c) Plato suggests another argument which has played an important rôle in the controversy about immortality. It

¹ For a summary statement of these Platonic arguments for immortality see the article on "Immortality" by W. A. Hammond in the *Encyclopædia Americana*.

² See the *Phædo*, 78, 79 (Church's translation in the *Trial and Death of Socrates*, pp. 143-147).

³ *Principles of Human Knowledge*, section 141 (*Berkeley's Complete Works*, edited by A. C. Fraser, Vol. I, p. 337). The same argument is found in Butler's *Analogy*, Part I, Chapter I. Descartes also accepts it in principle.

is contained in the following passage from the *Phædo*: "And shall we believe that the soul, which is invisible, and which goes hence to a place that is like herself, glorious, and pure, and invisible, to Hades, which is rightly called the unseen world, to dwell with the good and wise God, whither, if it be the will of God, my soul too must shortly go;—shall we believe that the soul, whose nature is so glorious, and pure, and invisible, is blown away by the winds and perishes as soon as she leaves the body, as the world says?"¹ The obvious answer implied in this question is, No! And the burden of its argument is that man's moral nature, the "divine" element within him, demands immortality. This argument was emphasized among modern thinkers particularly by Kant,² and since Kant's day it has come to be generally regarded as one of the strongest arguments for immortality. It permeates the literature dealing with the problem. There are two sides of the argument which we may separate for purposes of emphasis.

The first is that justice demands immortality. In this life the virtuous soul is not always rewarded according to its deserts. This cannot be the final status of affairs if

¹ *Phædo*, 79; Church's translation, *op. cit.*, p. 148. Socrates is the speaker, addressing his friends on the day of his death; but the thought is probably the thought of Plato rather than of Socrates. Compare Tennyson's famous lines in *In Memoriam*:

And he, shall he,
Man, her last work, who seem'd so fair,
Such splendid purpose in his eyes,
Who roll'd the psalm to wintry skies,
Who built him fanes of fruitless prayer,

Who trusted God was love indeed
And love Creation's final law—
Tho' Nature, red in tooth and claw
With ravine, shriek'd against his creed—

Who loved, who suffer'd countless ills,
Who battled for the True, the Just,
Be blown about the desert dust,
Or seal'd within the iron hills?

(LVI)

² See the *Critique of Practical Reason*, Book II, Chapter II, section IV.

morality is of ultimate significance; virtue must be rewarded and vice punished, else the world is unmoral and unreasonable. But this requires a future life in which inequalities may be adjusted and wrongs righted. Plato himself lays great stress upon this side of the argument, both in the *Phædo* and in the *Republic*.¹ And Kant, among the moderns, made it fundamental even to belief in the existence of God. "If we suppose, for the sake of illustration, that there exists a rational Being who has all power, it cannot be in accordance with the whole will of such a being, that his creatures should be unable to secure the happiness which their nature demands and of which their obedience to the moral law makes them worthy. The highest good of a possible world must therefore consist in the union of virtue and happiness in the same person, that is, in happiness exactly proportioned to morality."² And this necessitates the assumption that the individual person continues to exist after this life, for in this life it is certain that happiness and morality are not "exactly proportioned."

The other side of the argument is that the moral life is a struggle to attain an ideal which can never in this life be attained, namely, the ideal of complete and perfect goodness. Therefore, either morality is a deception and a cheat or the moral agent survives death endlessly. Kant also places emphasis on this side of the argument. Moral endeavor, he points out, is progress from lower to higher levels of achievement, an endless approximation towards goodness. "Now, this infinite progress is possible only if we presuppose that the existence of a rational being is prolonged to infinity, and that he retains his personality for

¹ "In the case of the just man, we must assume that, whether poverty be his lot, or sickness, or any other reputed evil, all will work for his final advantage, either in this life or in the next. For unquestionably, the gods can never neglect a man who determines to strive earnestly to become just, and by the practice of virtue to grow as much like God as man is permitted to do" (*Republic*, 613; translation by Davies and Vaughan, Macmillan's "Golden Treasury Series," p. 360).

² J. Watson, *Selections from Kant*, pp. 291-292.

all time. This is what we mean by immortality of the soul. The highest good is therefore practically possible, only if we presuppose the immortality of the soul."¹

According to the moral argument, then, immortality is a necessary presupposition of moral experience, a "moral postulate" as Kant phrases it. Without this postulate justice is defeated and the moral struggle towards the ideal is meaningless. If moral values are objective, if, that is, we can speak of reality as in any intelligible sense moral, personality in which these values inhere must also be real; bodily death cannot be equivalent to spiritual or personal death. The "soul" must live on. "In our present phase of existence the moral life cannot be lived out to its completion, it is not permitted to display its full fruitage of consequences for good and for evil. Whenever Might triumphs over Right; whenever the evildoers succeed and the righteous perish; whenever goodness is trampled under foot and wickedness is exalted to high places; nay, whenever the moral development of character is cut short and rendered vain by death,—we are brought face to face with facts which constitute an indictment of cosmic justice, which are inconsistent with the conception of the world as a moral order. . . . How shall the ethical harmony be restored if not by the supposition of a prolongation and perfection of the moral life in the future? Only so can character be made of real significance in the scheme of things; only so it is something worth possessing, an investment more permanent and more decisive of our weal and woe than all the outward goods men set their hearts upon. . . ." ²

(d) During recent years a systematic effort has been made, through direct observation of alleged spirit activities, to bring the problem of immortality under something approximating experimental control and to solve it through

¹ J. Watson, *Selections from Kant*, p. 295. Compare Tennyson's *In Memoriam*, sections XXXIV, LIV-LVI; and Browning's *Prospice*.

² F. C. S. Schiller, *Humanism, Philosophical Essays*, 1903, pp. 252-253.

scientific induction. To this end the Society for Psychical Research was founded in 1882. Many eminent men have belonged to the Society, such as Henry Sidgwick, Tennyson, Ruskin, Gladstone, Sir W. F. Barrett, Sir Oliver Lodge, A. J. Balfour, Sir W. Crookes, and William James—to mention only a few of the outstanding ones. The findings of the Society have been published in a series of volumes known as the *Proceedings of the Society for Psychical Research*. Some of the members of the Society, as Sir Oliver Lodge for example, are convinced that immortality has been definitely established by these findings; but others remain skeptical.¹

The phenomena with which the Society deals fall mainly into two classes. First, there are the physical phenomena. These include the alleged movements of objects, responsive-raps, levitation of human beings, noises and music, luminous appearances—all without known physical causes. The second class of phenomena are the psychical, which include thought-transference both in the normal and in the hypnotic state, phantasms of the living and dead, automatic writing or speaking of messages which lie beyond the medium's knowledge, and cross-correspondences. Concrete examples of each class of phenomena may be found in abundance in the *Proceedings of the Society*.²

Many of these phenomena, and perhaps most of them, are commonly regarded as having no relevancy concerning the problem of immortality. They can obviously be accounted for in terms of natural causes, and there is no need

¹ For a brief but fairly comprehensive survey of the history of the Society and its work up to 1911 see W. F. Barrett, *Psychical Research*. F. W. H. Myers, *Human Personality and its Survival of Bodily Death* (2 vols.), gives an exhaustive account of many phenomena.

Sir Oliver Lodge remained for a long time skeptical, but in his recent book, *Raymond*, he accepts the hypothesis as established. An interesting critical survey will be found in Frank Podmore's *The Newer Spiritualism* (second impression, 1911).

² See Podmore, *op. cit.*, especially Book I, Chapters II-IV; and Book II, Chapters IV-VI.

to search further for an explanation of them. There are other phenomena, however, particularly automatic messages and cross-correspondences, which are by some held to be inexplicable except upon the assumption that "there is some active intelligence at work behind, and apart from, the automatist, an intelligence which is more like the deceased person it professes to be than that of any other we can imagine. And though the intelligence is provokingly irritating in the way it evades simple direct replies to questions, yet it is difficult to find any other solution to the problem of these scripts and cross-correspondences than that there is an attempt at intelligent co-operation between certain disembodied minds and our own."¹ Whether this could be called immortality is a debatable question; certainly it could hardly be called immortality in the ordinary meaning of the term. But if such an inference is logically necessary, whether it prove immortality or not, it certainly has an important bearing on the problem.

Psychical research, then, seems to some of its devotees to lead to this conclusion, namely, that the hypothesis of survival of bodily death is a scientifically necessary one. The argument by which the conclusion is reached is two-fold: first, that there are indisputable facts that cannot be accounted for by reference to natural causes, in so far as these natural causes are known or are conceivable in terms of what is known; second, that the hypothesis of the continued existence of spirits after death will explain these phenomena, and it is the simplest hypothesis which will explain them. If this be not proof of immortality, it at least opens the way to it by showing that the "Conqueror Worm" is not invincible. For some members of the Society even this would be an over-optimistic statement of the case, for others it would be entirely too conservative, while to others it would be acceptable as approximately correct.

(e) In attempting to estimate the logical value of the pre-

¹ W. F. Barrett, *Psychical Research*, p. 245.

ceding arguments for belief in immortality, the following points should be borne in mind:

(1) The argument based upon the supposed "simplicity" of the soul assumes that the traditional spiritual-substance theory of the soul is in principle correct. This theory, however, as we have already seen,¹ has been subjected to a vigorous criticism by both Hume and Kant, and that criticism has been generally accepted by later thinkers as valid. If this criticism is justified and the spiritual-substance theory is erroneous, then naturally the argument for immortality built upon it cannot stand.

(2) In connection with the argument drawn from the moral experience of mankind, two questions would seem to be crucial: (i) Are moral values objective in the sense that they express something fundamental to the world-order? and (ii) If moral values are thus objective, does that fact warrant the conclusion that the affirmation of the continued existence of personality is more reasonable than its denial? The first of these questions has been discussed in the preceding chapter, and an affirmative answer to it has there been suggested and the argument for it briefly outlined. There seems reason to hold that moral values are genuinely objective.² Granted this objectivity of moral

¹ Chapter X above.

² The reader must keep clearly in mind what is meant by this "objectivity" of moral values. It means simply that moral valuations—moral judgments—tell us something about the nature of our environment as truly as do purely descriptive judgments. It does not mean that "I or any other human being is infallible in his judgments of value, any more than he is in his scientific or his historical judgments. It means rather that the concept of Oughtness, or Goodness, or Value is part of the real nature of things—that it is not a mere expression of my personal wishes or desires or idiosyncrasies, or even of the mental and emotional constitution of a particular species of two-legged animals which happens to have flourished during what Mr. Balfour has called a short and transitory episode . . . in the life of the meanest of planets. . . ." (H. Rashdall, lecture on "The Moral Argument for Personal Immortality," in the volume, *King's College Lectures on Immortality*, 1920, pp. 82-83). On this meaning of "objectivity" clarity is essential to an estimate of the moral argument—whether for God or for immortality.

values, does personal immortality follow? To this question an affirmative answer seems to many logically necessary. For if moral values are expressive of the nature of things then personality must in some sense be permanent, since it is through personality that moral values are created and to personality that they attach themselves. Assuming that moral values are real, it therefore follows that personality is real and not a mere ephemeral appearance of no ultimate significance in the world-order. Personal immortality seems thus to be implied by the objectivity of moral values. The moral order demands immortality for the conservation of its values, as it demands freedom for the creation of them and God for the consummation of the ideal inherent in them. Thus the hypotheses of freedom, God, and immortality are intimately bound up with each other and enmeshed in the values of the moral order. In a reasoned consideration of the last two hypotheses the objectivity of the moral judgment is of fundamental importance.¹

(3) So far as psychical research is concerned, one assertion can be made without limitation: it has not established the hypothesis of immortality in the sense in which we have been using the term throughout this discussion. The most generous estimate of psychical research could hardly say more than that it has established a presumption in favor of the continued existence of some vague sort of spiritual or mental activity. A more unsympathetic critic, however, might reasonably claim that even this presumption is wanting, since it has not been conclusively shown that some simpler hypothesis (such as telepathy) than the

¹ There is danger that one may reason in a circle in connection with the moral arguments for God and immortality, as Professor Leuba has justly warned us: "One may start from the human moral constitution and its demands, and affirm that they imply the existence of a moral Creator. Then one may declare it impossible for such a God not to fulfill the expectations he has placed in man" (*The Belief in God and Immortality*, pp. 139-140). It is questionable whether Professor Leuba's criticism of the moral argument for immortality (pp. 137-146) does justice to its deeper significance.

activity of disembodied spirits may yet be able to account for all of the important phenomena (such as automatic messages and cross-correspondences) still in serious debate. Certainly it is true that immortality has not yet been proved by scientific induction.¹

(4) Summarizing, we may say that the postulate of immortality finds its chief support in the argument based upon the data of moral experience. The results of ethical inquiry are therefore of basal significance in the controversy. Neither the argument from the "simplicity" of the soul nor the results achieved by the Society for Psychical Research carry very much conviction; the first rests upon an exploded notion of the nature of the soul, while the other line of inquiry is still too much shrouded in confusion arising both from questionable data and questionable assumptions. The crux of the moral argument is the objectivity of moral values and of the ideal implied by them.

§ 4. *Desirability of immortality*

A word in conclusion should be said concerning the diversity of views on the question whether immortality is desirable.

That there is a diversity of views on the subject there can be no doubt. There is indisputable evidence that many do not desire immortality, but, on the contrary, hold as a precious hope that "the ache and langour of existence" end with this life. There is equally indisputable evidence that others shudder at such a "precious hope," and look upon immortality as the most precious prize which falls within the vision of mortals. Some long for

Only the sleep eternal
In an eternal night.

¹ For further details see J. H. Leuba, *The Belief in God and Immortality*, pp. 154-167; and F. Podmore, *The Newer Spiritualism*. For an interpretation more favorable to the positive significance of psychical research the writings of Sir Oliver Lodge should be consulted.

Others believe that immortality alone can give to the life that now is a tolerable meaning; take immortality away and life becomes for them an utterly miserable affair. This difference in attitude is perhaps largely a matter of temperament, but it is also more. It appears to be indicative of a difference in conception of immortality itself.

Three conceptions of immortality are possible, and these differ widely in significance and, hence, in desirability. On the one hand, one may think of immortality as an endless continuance in unalloyed enjoyment of the same things from day to day, from eon to eon, of time. Again, one may think of immortality as an endless repetition of the foibles and failures of the life that we live here in this vale of sorrow and struggle. Finally, one may conceive of immortality as progressive expansion and development in spiritual (intellectual and moral) powers, as either the final attainment of perfection or uninterrupted progress in its realization. One holding the first view would naturally long for immortality—unless, perchance, it occurred to him to question whether such a state of existence could through eons of time unimaginable be anything other than an unendurable monotony.¹ The second is a dismal view of the future life, and could hardly be seriously contemplated without a shudder except by one who is either unusually fortunate or unusually insensitive. Those sensitive souls who entertain it (like Schopenhauer, for example, or the Buddha) most strenuously contend that utter annihilation of every vestige of conscious personality is a consummation both devoutly to be wished and unrelentingly to be striven for. The third view of immortality has an attraction for those who, like Socrates, are deeply interested in the business of living, find it a delightful adventure, and would like to continue the business under conditions more favorable to ultimate success than those that obtain here and now; and it is doubt-

¹ Cf. the Greek fable of Sisyphus, who was condemned through eternity to roll up-hill a stone which ever rolls back.

less the view which many who profess a desire for immortality entertain concerning its nature.

In the end, thus, whether one desires immortality depends on what view of the present life one holds—for immortality, at its best, is but a prolongation of the best that this life affords. And what is the best that this life affords is precisely the problem of goodness. It is for this reason that the question of immortality is so frequently bound up with the question of optimism and pessimism; an analysis of it is, in fact, what Nietzsche named the valuation of values. It is for this reason, also, that one's conception of immortality, if it be at all reflective, is bound to disclose some of the deeper aspects of what one holds to be the characteristics of goodness. And it is for this reason, finally, that the question concerning what view of immortality one has a right to desire, that is, what view is *desirable*, is primarily a problem of value.

CHAPTER XVI
CONSERVATION OF GOODNESS:
BELIEF IN GOD

Another basal faith of the religious devotee is faith in God. And this faith, like that in immortality, is assumed to be intimately bound up with the ultimate conservation of goodness. However it be defined in detail, Deity is supposed to be an embodiment of goodness; and its opposite (the Devil) is the embodiment of evil. "Must not the judge of all the earth do right?" the Hebrew Bible asks—as does the Bible of every religion which admits the existence of such a judge. And the answer is supposed to be obvious: the judge of all the earth must do right, for he is God and God is good. And conversely: the ultimate character of goodness demands that there be such a judge, for he alone can bring the value to its final fruition in the affairs of the world. As in the case of immortality, then, so here there is a linkage between the moral and the religious: God is good, the good is God, and an analysis of the one conception involves a necessary reference to the other. Such seems to be the assumption implicit in the religious devotee's faith in Deity.

What, we must now inquire, is the status of this faith? Is it well-grounded in cold logical analysis, or only supported by religious enthusiasm and fervor? For clarity of exposition, we shall deal with the question under the two main headings of the idea of God and the existence of God—which are fairly indicative of the two basal issues involved.

§ 1. *The idea of God*

(a) It has been truly said that mankind is incurably religious. Wherever on the face of the earth man is found and at whatever level of culture he may happen to be, he commonly has his religious beliefs and practices. Basal among these is the belief that there exists in the world, and potent in its on-goings, something supra-human which works for man's weal or woe and which demands of him an attitude of reverence and worship. In its details, of course, such a belief varies markedly from stage to stage of cultural evolution: in the earlier stages it is a vague and ill-defined belief in some impersonal sort of power (named *mana*), while in later stages it becomes more definite, the power is personified and, though assuming sundry forms, is conceived with a definiteness which permits of ceremonial worship.¹ But the belief is present throughout and, despite its variations in detail, it remains essentially one—namely, belief in some effective and propitiable supra-human power which plays its part in the course of natural events and (as generally conceived, at any rate) is interested in goodness. Whatever may be the genesis and forms of this belief and whatever remains to be said concerning its logical justification, it is deeply embedded in cultural evolution from savagedom to civilization as a basal belief of the religious consciousness of mankind; and it may be called belief in God.

Belief in God, thus, is a quite natural belief, and it is a mistake to suppose (as was supposed by some thinkers of the eighteenth century, for example) that the belief is an artificial creation of some scheming priests or medicine-men who hoped by its means to get control of the masses and use them for ulterior ends. And the idea of God has been

¹ The histories of the greater religions will, of course, furnish accounts of the later stages. For the beginnings, see W. K. Wright, *A Student's Philosophy of Religion*, Chapters III-VI; the references there given offer more extended surveys. J. G. Frazer's *The Golden Bough* is a storehouse of information on the subject.

of tremendous practical significance in man's cultural development throughout the ages. It is inextricably bound up with the conception of goodness in this development, reflecting it, being modified by it, and, in turn, powerfully reacting upon it. A clear illustration of this involvement of the two conceptions, God and goodness, is furnished by the history of the religious development of the Hebrew people as vividly portrayed in the writings of the Old Testament. With the deepening of the moral insight of the Jewish people through the vision of their prophets, Yahweh or Jehovah grows from a tribal deity, interested in wars and burnt offerings, into a universal God who requires of his followers that they do justly and love mercy; and the changing conception of Jehovah reacts powerfully upon the moral beliefs and practices of the people.¹ The challenge was ever before them: "If Baal be god, serve him; if Jehovah, then serve him." And this challenge was a powerful stimulus to their moral advancement. It may be possible for an individual to give lip-service in religious matters, and belie his profession by his practice; but such is hardly possible for a race. In the long run the God a people believes in is one of the surest indices to the deeper drift of its life; broadly speaking, it remains true that one cannot serve both God and mammon. On one important side, the history of mankind is the history of mankind's deities.

It is obvious on little reflection that the word God conveys different meanings to different minds. This is evident from observation of one's immediate neighbors; no two would appear to have in mind precisely the same meaning when speaking of God. And when observation is extended to the great religions of the world and to the historical evolution of those religions, the variation in the meaning of the idea of God is seen to be very great. These differences in meaning cannot here be traced in detail; for our purpose it

¹ Compare the portraits of Jehovah drawn in the Books of Exodus, of Amos and of Isaiah respectively.

is sufficient to note certain fundamental views that have marked the course of mankind's religious development. These may be roughly classified as those which concern the nature of God, and those which turn upon the relation between God and the world-order.

(b) As regards the nature of God, there are two main views, namely, polytheism and monotheism.

Polytheism is the belief that there are many gods, separate and distinct, and more or less in conflict with each other's interests and purposes. This view finds its clearest exemplification in the national religions of antiquity, which undoubtedly have a direct historical connection with the simpler polytheistic views of more primitive ancestors.¹ The religions of classic Greece and Rome, of Babylonia, Assyria, and Egypt of ancient days were polytheistic. The Jews had great difficulty in growing away from polytheism; they long held to the conviction that Jehovah was only one among many gods, and their loyalty was not infrequently divided.² There are many gods, an indefinite number, and all are in some degree worthy to be worshiped and served—this is the polytheistic conception.

Monotheism, on the other hand, is the view that there is one and only one God, besides whom there is no other. From this point of view the gods of polytheism are superstitions, idols, aberrations of the human mind; the God-idea is unified, there is only one reality to which it refers. Some of the Jewish prophets, particularly the second

¹ Cf. W. K. Wright, *A Student's Philosophy of Religion*, Chapter VI, particularly pp. 59-64, and the references there given.

² Note the numerous references to idolatry in the Old Testament. Manasseh, for example, one of the late Kings and typical of many of the others, "did that which was evil in the sight of Jehovah, after the abominations of the nations whom Jehovah cast out before the children of Israel. For he built again the high places which Hezekiah his father had destroyed; and he reared up altars for Baal, and made an Asherah, as did King Ahab of Israel, and worshipped all the host of heaven [sun, stars, etc.] and served them" (II Kings, 21). This worshipping and serving of other gods was a common occurrence in those days.

Isaiah,¹ seem to have attained this conception some three or four centuries before the Christian era. It certainly was the view of Jesus and his disciples; St. Paul laid special emphasis upon it. Mohammed is never tired of emphasizing in the *Koran*: "There is only one God, and Mohammed is His Prophet." And the unity of all things in Nirvana is the burden of Buddha's message.² In short, all the great religions teach the monotheistic conception of God. It is true that the religion of Zoroaster appears at first glance to be an exception to this statement; the *Zend Avesta* is constantly speaking of two deities, namely, Ahura Mazda (the God of Light) and Ahriman (the God of Darkness). But even Zoroastrianism is essentially monotheistic, since the victory of Mazda appears assured—or, at least, very probable; Ahriman seems about on the level with the Christian Satan. There is one God who, though perhaps compelled to struggle, is alone truly divine—this is the monotheistic conception.

(c) There are three views of the relation between God and the world-order to be distinguished: deism, pantheism, and theism. All three are monotheistic; their difference lies in the manner in which the relation between God and the time-space order of the world is conceived.

For *deism* the relation is a purely external, or, as it is sometimes technically expressed, *transcendent*, one. That is to say, God by the deist is conceived as a self-conscious being who exists outside of and independent of the on-goings of the things and events which constitute what we usually call "the world." God is the Creator of the world;

¹ "Thus saith Jehovah, the King of Israel, and his Redeemer, Jehovah of hosts: I am the first, and I am the last; and besides me there is no God" (*Isaiah*, 44, 6).

² A case can undoubtedly be made for the thesis that Buddhism is an atheistic religion; there is in it nothing corresponding to a personal Deity. Nevertheless, in its priestly form at any rate, it does not leave its devotees without hope in some sort of power in the world which, after its own fashion, makes for righteousness. See W. K. Wright, *A Student's Philosophy of Religion*, Chapter VIII, and the references there given.

but the world by means of its own laws runs of itself without either coöperation or interference on the Creator's part. Indeed, the Creator is powerless to interfere, since these laws were made by him immutable. God, then, is the self-conscious Creator of the universe to which he stands related as the inventor is related to his invention—such is the deistic view of God and the world.¹

Pantheism is diametrically opposed to deism. So far from separating God from the world as the deist does, the pantheist identifies God with the world-process. Everything is in God, God is in everything; God is all, all is God. Hence the name, pantheism (from the Greek words, *pan* = all, and *theos* = God). The pantheist, thus, wholly denies transcendence; God for him is entirely *immanent* within the space-time order. The best example of pantheism, among the great religions, is Brahmanism; though mystics generally, whether Hindu or Christian, are apt to hold the pantheistic conception of God. For the mystic, no more than the pantheist, can escape from the feeling that God is everywhere.

They reckon ill who leave me out;
When me they fly, I am the wings;
I am the doubter and the doubt,
And I the hymn the Brahmin sings.

God equals everything, everything equals God—this is pantheism.

Theism undertakes to formulate a view of God and the world which is between the extremes of deism and panthe-

¹ The deistic conception is historically connected with a group of English and French thinkers of the late seventeenth and the early eighteenth centuries. The English group are known as Deists, and the French group as Encyclopædists. Prominent among them were: Toland (*Christianity not Mysterious*, 1696), Matthew Tindal (*Christianity as old as Creation*, 1730), Voltaire (*Lettres sur les Anglais*, 1733), and Holbach (*Système de la nature*, 1770). For an interesting general account of the period see Hibben, *The Philosophy of the Enlightenment*. Influences of this movement were felt in early American thought (see Riley, *American Philosophy*, Book III).

ism. The theist is not willing to go the whole way with either the pantheist or the deist. With the deist he denies that God can without remainder be identified with the space-time order; and with the pantheist he denies that God can be wholly external to that order. He agrees that the deist is right in his insistence that God is in some sense more than the world; and, on the other hand, he agrees that the pantheist is right in his insistence that God is found within the world-order or nowhere. In short, he holds that God is both immanent within the world and transcendent to it. Putting these convictions together into a constructive view, the theist conceives God as a self-conscious being whose nature is expressed within the structure and process of the universe. God's immanence lies in the fact that the on-goings of the world-order are expressions of His experiences; His transcendence lies in the directive and controlling influence exerted by Him within the process through which His nature is realized. Christianity, in certain interpretations of it at any rate, approximates this conception. God is a self-conscious directive Power within the world, and His nature is closely connected with, if not actually causally affected by, the events within which it manifests itself—this is the view of God and the world which the theist would have us entertain.

(d) It is clear that these variations in meaning have an important bearing upon the reasoned consideration of the belief in God. It makes a great deal of difference to the validity of arguments, pro and con, about God whether one or another of the views above outlined is in question. Arguments and objections alike may have weight with reference to one conception, and at the same time be wholly irrelevant with reference to other views. For instance, arguments for a pantheistic God may have little or no significance relative to a deistic God; and objections raised against the deistic view may be simply irrelevant so far as the theist is concerned. Much of the confusion that has attached to the

theistic controversy may, in fact, be attributed to failure on the part of the disputants to state clearly which conception of God is in debate; it is inevitable that men, holding different views about their fundamental terms, should widely vary in their conclusions. Under such conditions they are not really reasoning; they are vainly fighting with shadows.

On the other hand, the reader must not fall into the error of assuming that it is an easy matter to choose among the conceptions of God that men have entertained, to select one as valid and discard the others as fictitious. These views are not wholly arbitrary; men are not deists, or pantheists, or theists, for no reasons. On the contrary, much can be said in support of each of these views. If one is to believe in God at all, one must be either a deist or a pantheist or a theist; and there are important considerations in support of each position. So it happens that, while the possibilities of choice are rather sharply limited, choice among these possibilities is by no means easy. The truth is that precisely this choice constitutes one crucial step in the debate of the problem of God.

§ 2. *Genesis of the problem of God*

Why, one may ask, raise any question concerning God? Is it not purely arbitrary to do so? We believe in God, that is, the majority of us do; and is that not sufficient? Why ferret out any problem here? Is it not better to say to our hearts: "Adore and be still!"? This is a natural feeling, and we may here pause to determine its justification before launching upon our further inquiry; there is, of course, no need to waste time discussing an idle question.

(a) It has been maintained that, for the religious devotee at any rate, the problem of the existence of God is not a genuine problem. Professor Leuba, for example, maintains: "The truth of the matter can be put in this way: *God is not*

known, he is not understood; he is used—sometimes as meat-purveyor, sometimes as moral support, sometimes as friend, sometimes as an object of love. If he proves himself useful, the religious consciousness asks for no more than that. Does God really exist? How does he exist? What is he? are so many irrelevant questions. Not God, but life, more life, a larger, richer, more satisfying life, is, in the last analysis, the end of religion. The love of life, at any and every level of development, is the religious impulse."¹

There is, no doubt, much truth in this position. The human mind unquestionably entertained belief in God ages before there was any problem raised about such a being. The mind of primitive man, upon whose horizon the problem never dawned, believed none the less; and many civilized persons similarly believe without question. Indeed, the religious attitude tends to negate the problem; strictly speaking, the *problem* of God is choked by it. The fervent religious devotee does not call in question the existence or the nature of the object of worship, simply because he believes so intensely in it; and the more devout he is, the more intense his belief, the less likely is the problem to arise in his mind. His attitude is that so aptly expressed by St. Paul: "I know whom I have believed, and am persuaded that he is able to keep that which I have committed to him against that day." And one who steadily maintains this attitude cannot, of course, feel the push of the problem involved in it.

But there is a problem involved, however oblivious to it the religious devotee may happen to be. Nor can he himself remain long oblivious when once he grows reflective. For whoever begins to reflect on mankind's belief in God is necessarily and immediately confronted by the problem of

¹ J. H. Leuba, "The Contents of Religious Consciousness," *The Monist*, Vol. XI, pp. 571, 572, July, 1901 (as quoted by W. James, *Varieties of Religious Experience*, pp. 506-507).

God's nature and existence. Does God really exist? What is he? are no longer irrelevant questions; on the contrary, they are quite relevant and profoundly important. Man comes to reason about God, not in order that he may believe, but because, believing, he grows querulous about the grounds of his faith. The problem of God grows out of belief in God through reflection upon the belief. Let us see in greater detail how this is so.

(b) In the first place, variations in the belief itself make the problem inescapable for anyone who is able to note them. If there were only one belief about God, if all people at all times believed in the same God, if the religious consciousness were always at one with itself and not equivocal in its pronouncement concerning the object of its faith, one potent reason for the problem of God would undoubtedly be removed. But the religious consciousness is decidedly equivocal in its pronouncement in this regard; here there is a veritable Babeldom. For some believers there are many gods with widely varying characteristics, for others there is only one God though conceived with an endless variety of qualities; some believe that God is the artificer of the world-process, others identify Him precisely with the world-process; at times He is conceived as a jealous God interested in a chosen few, then again He is supposed to be no respecter of persons; in the faith of some He is a self-conscious personality with a will to accomplish certain ends, while in other faiths He is an unconscious Power, Karma, or Heaven; and so the confusion runs on *ad infinitum*. Of course, even an inkling of reflection reveals that such confusion is logically intolerable; obviously, not all of these views can be true. What shall we say then? Shall we refrain from questioning, that faith may abound? That is impossible, and the religious consciousness of mankind itself will not tolerate it. Thus out of beliefs in God grows the problem of God; the very diversity of faiths makes the problem an inevitable one. And, be it noted in passing, the

problem is for religion a tremendously practical one. If Baal really be God we must serve him; if Jehovah, then we must serve Him. It makes a vast difference which we serve, and before we can choose we must know which is God. So the problem of God is of great religious significance. For the religious consciousness, indeed, it is of all problems the most profoundly practical; for, "What will a man give in exchange for his soul?"

(c) Again, the developing moral experience of the race tends to make the problem of God an acute one. Religious faith assumes that God exists as the guardian of moral values, and that the righteous are the special objects of His interest and care. But there are many facts that seem to make against this assumption. Not infrequently the wicked flourish despite their wickedness, even it sometimes seems because of their wickedness; while sorrows and disappointment dog the footsteps of the righteous, and death itself may at times be the reward of their righteousness. Certain it is, as the most causal observation shows, that success or failure in the life that now is has little apparent connection with the attainment of goodness. How can this be, if there is a Power in the world "that makes for righteousness"? The problem is as ancient as the more reflective moral and religious experience of the human race. In the Old Testament it is frequently broached; and it finds there its classic expression in the tragedy of Job.

It is all one; therefore I say,
 He destroyeth the perfect and the wicked.
 If the scourge slay suddenly,
 He will mock at the trial of the innocent.
 The earth is given into the hand of the wicked;
 He covereth the faces of the judges thereof:
 If it be not he, who then is it?

(*Job*, Chapter IX, verses 22-24)

Must a man, then, serve God for nought? Can it be that God is indifferent to the fortunes of the righteous? Fur-

thermore, in the second place, there seems to be a marked indifference in the forces of nature to those moral values which man so highly prizes. Face to face with these forces moral values appear utterly impotent and of no avail.¹ They seem, as it were, but a flickering candle which is soon ruthlessly extinguished by what William James picturesquely calls "the vast driftings of the cosmic weather." In the maelstrom of the physical environment moral distinctions have little significance.

Streams will not curb their pride,
The just man not to entomb,
Nor lightnings go aside
To give his virtues room ;

Nor is that wind less rough which blows a good man's barge.

Once again, how can such things be? Is God impotent within His world? Is His "arm shortened that he cannot save"? Or, perchance, is man's faith vain? And so, once more, the problem of God is inevitable; it springs directly from the facts of moral experience.

(d) Finally, the push of the problem of God is felt in the developing scientific experiences of mankind. When the great French scientist, Laplace, had finished his famous work on astronomy (*Mecanique céleste—Celestial Mechanics*) he is said to have presented a copy of the book to the emperor. In looking over the book the emperor could find in it no mention of God. He called this fact to the attention of Laplace, so the story goes, and the scientist replied: "Sire, I had no need of that hypothesis." In an important sense this is true of science generally. It has more and more consistently explained phenomena by natural causes, and has progressively eliminated from the world supernatural agencies. Phenomena which formerly were attributed to divine intervention—the flash of lightning, the

¹ For an impressive statement of the point, see B. Russell's essay, "A Free Man's Worship," in the volume *Mysticism and Logic*.

storm-tossed sea, the changing seasons, the rising and setting of the sun, earthquakes, famine, and countless others—have by science been gradually referred to causes that are as natural and non-mysterious as the phenomena themselves. The hypothesis of God has grown less and less a scientific necessity until at present it is never mentioned in the texts of the sciences. Does this mean that the notion of God is scientifically useless? And does this imply, further, that the basal belief of the religious consciousness lies in contradiction of rational reflection on the nature of the world? Surely the mind of man cannot be thus at war with itself; the apparent contradiction must in some way be resolvable. And so from this angle the problem of God once more forces itself upon us.

The problem of God is thus an inevitable problem of the human mind. Given belief in God and reflection upon that belief, the problem at once arises. Possessed of this belief and confronted by the wide divergencies in view within the religious consciousness itself and by the hard facts of the moral and scientific experience of the race, man cannot but cry unto himself: "Where is now thy God?" Whether by searching he can find Him out, whether he must finally confess that the search demands powers of vision beyond those which he possesses, or, tragically enough, that it ends in negative results—in any event, for better or worse, he is committed to the search. The problem of God, therefore, is not an idle problem to be taken or left at pleasure; it is for reflection inescapable. Nor is it a trivial problem; it is, on the contrary, one of the most profound problems that it is the privilege of man's mind to formulate, and its solution touches upon the deepest depths as well as the farthest reaches of man's experience and the environment in which it runs. Some of the evidences which seem to justify the belief and some of the difficulties that lie in the way of its justification we shall consider in the following sections.

§ 3. *Arguments for belief in God*

There are two general fields from which evidence relative to belief in God has been drawn, namely, the physical and biological environment on the one side and the social environment on the other—the facts of nature, and the facts of society. Thus it happens that the arguments in respect of the belief fall into two main classes, and it will be convenient to make use of this division in our summary statement of the arguments.¹ Before passing on to these, however, two special arguments which do not properly fall into this classification must be briefly considered.

(a) The first of these special arguments is based directly on religious experience, and is sometimes called the empirical argument. It runs to the effect that, since sundry adherents of all religious faiths claim severally to have had direct experience of God and since there is no reason to doubt the sincerity of such claims, this historical fact must be accepted as evidence that God exists. Does such an argument carry with it any conviction?

In the first place, there can presumably be no doubt about the historical fact that such claims have been made. All mystics have insisted upon a direct experience of God; and many religious devotees, not properly to be called mystics, have professed to have an essentially similar experience. Nor, in the second place, need there be any doubt concerning the sincerity of those persons making such claims; there is, generally speaking at least, no reason why they should be supposed to be consciously mis-describing their experiences, and many of them are otherwise very

¹ This statement will be primarily concerned with the arguments in support of the belief. The arguments on the other side are largely criticisms of these positive arguments and, in addition, the general consideration that the belief does not aid us in our efforts to give a rational account of the objects of judgment. This latter consideration, however, reduces on analysis to a denial of each of the positive arguments with which we shall be concerned. But see W. K. Wright, *op. cit.*, pp. 360 ff.

competent, honest, honorable, and generally trustworthy persons. Of their claims and their sincerity, then, there need be no doubt; the facts presumably are as the argument says they are.¹

But what do they prove? What inferences are warranted on the basis of them? No one apparently has ever claimed that he has seen God face to face, as if he were another embodied person; the claim concerns, rather, a felt presence which is interpreted as the presence of deity. And the question of the significance of the argument centers about this inference. Is it a genuine inference, and on what grounds does it rest? That something is "felt" and in this sense directly apprehended is granted; but what is it? Perhaps the feeling has a purely psychological explanation; perhaps it is a state of high emotional excitement, or a state like that which one experiences when one "feels" that something is going to happen or has happened, and is explicable in essentially the same way. Perhaps, in other words, the claimed felt presence of deity is not cognitive at all, but only a subjective twinge of sentiment. This, at least, must be admitted as a possibility, and the argument based upon the experience consequently held to be at best inconclusive. The existence of God certainly can hardly be convincingly proved in this manner; something more compelling than a "feeling," which may have no noetic quality at all, is surely demanded for conviction.

The second of these special arguments is based upon the utility of belief in God, and is sometimes called the pragmatic argument. The general line of argument is that the existence of God is proved by the fact that belief in God performs a useful function in human experience, that is, gives rise to valuable consequences in the business of living.

¹ Doubtless the reader has personal acquaintance with honorable persons who have made such a claim. For documentary details, the third lecture of W. James, *Varieties of Religious Experience*, should be consulted. Of course, the sacred writings of the various religions are full of such claims; all prophets of all religions claim to have had such a vision of Deity.

If this line of argument is understood to mean that belief in God brings satisfaction to human beings and induces to high moral endeavor and that consequently the belief must be held to be true, it is open to two objections. The first concerns the question of fact at issue: undoubtedly many people do find great comfort in the belief and in many instances it does lead to high moral endeavor, but the other side of the account must not be overlooked; it lies in what evidence there is in support of the atheistic propaganda of Soviet Russia, where belief in God is held to be worse than useless, and in the tragedies of the "holy wars" and brutal persecutions which have sprung so fruitfully, and apparently so fatefully, from the belief.¹ The second objection is that the mere utility of a belief, whether in God or in any other object, is no guarantee that the belief is true. Cannot one make a good case for the utility of the belief in Santa Claus, for instance, and does such utility prove that there is a Santa Claus? How does the belief in God differ from this sort of belief in respect of its "utility"?

If in reply to this question it be answered that the utility of a belief includes its logical relation to other reasoned beliefs, that a belief which is useful must square with other such beliefs, then the pragmatic argument for belief in God is on quite a different footing. It, then, appeals to the criterion of truth which above we have called that of coherence.² Whether in this interpretation the argument is to stand depends upon whether the belief in question can be made to harmonize logically with our other relevant beliefs; and this question carries us at once into the other arguments which we are to consider below.

Finally, if the pragmatic argument is interpreted as merely emphasizing the importance of our "practical reason"—that is, the demands of our moral nature—in respect

¹ For an elaboration of this side of the account, the reader should turn to such books as: Baron Holbach's *System of Nature*, and E. Haeckel's *Riddle of the Universe*.

² See above, Part I, Chapter V.

of any *Weltanschauung* we may legitimately construct, much can be said in support of it. We, too, are parts of the natural order; it has in some sense brought us into being, and our fortunes are linked with it. Any interpretation of that order, then, must take us into account, and do logical justice by the characteristics which belong to us as *human* beings; and among these characteristics, certainly volition is of outstanding prominence.¹ And volition seems to link us with the natural order in a way other than merely causal; its basal category is goodness, and goodness, as we have seen, seems to be embedded somehow in the nature of objects of judgments. This connection between goodness and the order of nature is of basal importance to a theory of nature; and if this be the emphasis of the pragmatic line of argument, it is surely so far sound. But, once more, in this interpretation the argument tends to merge with another type which remains to be considered.

Thus it would appear that the pragmatic type of argument is either of little significance or tends to merge into the other sorts of argument which we indicated at the beginning of our statement. To these other arguments we must now turn. We shall first give a summary statement of the arguments, and then note some critical observations concerning them.

(b) In our analysis of judgment above, we had occasion to observe that causation is a basal cognitive assumption and to consider some of the problems connected with it. It happens that this assumption or postulate of reason has played an important part in some of the arguments advanced in favor of the existence of God, and so we must here return upon it from this angle; what was said in the previous discussion of causation is presupposed and should be reviewed by the reader. The causal arguments for the

¹ For an interesting discussion of the general problem, see W. James, "Reflex Action and Theism" (in the volume entitled *The Will to Believe*, pp. 111 ff.).

existence of God are chiefly two: the argument leading to a First Cause, and the argument from design or, as it is sometimes called, the teleological argument.

FIRST CAUSE. Every event in the world, whether past or present or future, is, so the assumption or postulate of reason goes, an element within a causal situation; every event, that is to say, is a caused event. Furthermore, every cause is in its turn an element within a causal situation that leads beyond it; that is, every cause is also an effect. There is thus a causal series running back indefinitely into the past, radiating on all sides into the present, and, in imagination at least, stretching into the apparently endless reaches of the future; and this (or *these*, if causal pluralism holds) causal series we call "the world." Now, so the argument runs, there must be a Cause of the series of causes, a First Cause of all causal situations, a Cause of "the world"; and this Cause is God. There are two forms of this argument, according as the notion of a "first" cause is understood in the temporal or teleological sense; and these should be distinguished. Interpreted in the temporal sense, the argument is that God is the beginning of the causal series; interpreted in the teleological sense, it is that God is the unifying principle or ground of the world as "the far-off divine event towards which the whole creation moves."¹

DESIGN. There are evidences of design in the natural order. To illustrate: the lungs of land animals are adapted to breathing air, while fishes have gills rather than lungs since they are compelled to breathe the air dissolved in water; the coloration of animals varies with their environment so as to afford protection from enemies; the bones of

¹ The argument that God is the Creator of the world which He produced out of nothing as held, for example, by St. Augustine (see Thilly, *History of Philosophy*, pp. 149-150), involves the temporal meaning of a "first" cause. Aristotle first clearly formulated the argument in its teleological sense (see Thilly, *ibid.*, pp. 82-85). His statement of the argument is bound up with his doctrine of "form" and "matter"; God is the "first" cause in the sense that He is the "Pure Form" of the world-process (see *Aristotle: Selections*, ed. by W. D. Ross, pp. 100-118).

birds are light, and so lessen their weight for flying; weak animals are alert and fleet of foot, and they are thus, despite their weakness, enabled to survive; man's upright position and the peculiar structure of his hands are admirably adapted to the exigencies and excellencies of his life; and so on. These evidences of contrivance in the world necessitate the inference that there is a Contriver of the world-order, and this Contriver is God. Such is the drift of the argument from design.¹

(c) Other arguments are based on the social order. Here, again, two main types of argument present themselves according as the purely theoretical and ideational, or the moral and religious side of man's nature is emphasized.

THE THEORETICAL ARGUMENTS. The mind of man is a knowing mind; it forms ideas about the world, and it tests the validity of those ideas distinguishing the true from the erroneous. Upon this aspect of human experience two arguments concerning God have been built, namely, the traditional *ontological* argument and a more recent argument based upon the possibility of error.

The *ontological* argument undertakes to deduce the existence of God from the idea of Him entertained by the human mind. Briefly stated it is as follows: Our idea of God is the conception of something than which nothing greater can be conceived, since it involves the notion of perfection; now, since a non-existent being is not as perfect as

¹ This was a common argument in the eighteenth century, and was then supposed to have great weight. The famous analogy of the watchmaker developed by Paley in his *Natural Theology* is a classic formulation of it: one can conclude from the evidences of design in the structure of a watch that it was fashioned by an intelligent maker; God is the superhuman watchmaker who has fashioned the machine of the world, and this we know because He has left traces of His intelligence embedded in its structure.

William Paley was archdeacon of Carlisle and sometime fellow of Christ's College, Cambridge. The more important of his writings are: *The Principles of Moral and Political Philosophy* (1785); *A View of the Evidences of Christianity* (1794), long used as a text-book; and *Natural Theology, or Evidences of the Existence and Attributes of the Deity collected from the Appearances of Nature* (1802).

an existent being, the idea of God would not be the greatest idea thinkable if God did not exist; but this is contrary to hypothesis, and therefore God exists. Q.E.D. In short, the perfection involved in the idea of God implies His existence, since, if he did not exist, He would be imperfect.¹

The argument based upon the *possibility of error* is highly technical and difficult to state in short compass without eliminating from it at least some of its essential elements. The following summary may be ventured, however, as presenting its high points. Error is a fact of human knowledge; but what is an error? It is a mistaken judgment; a judgment that fails to agree with its object is an erroneous judgment, as we have already seen in our chapter on truth. However, a single judgment by itself alone could not possibly be known to be erroneous, since it would perforce be taken as agreeing with its object; only when it is included in a higher judgment whose object is the completed object of the erroneous judgment is its error disclosed. For instance: if a traveller on the desert judge that he sees on the horizon an oasis but dies before he can reach it, he will die in the conviction that the oasis is there even though what he sees be only a mirage; could he but know the larger truth he would also know his error, and his judgment is erroneous only because of the larger truth which lies beyond him. The existence of error, thus, implies the existence of truth. Now there is an infinity of possible errors even with reference to any object; error arises when the judg-

¹ The first formulation of this argument is commonly associated with the name of the medieval thinker, St. Anselm (1033-1103), one of the leading representatives of thinkers known as the Schoolmen. His formulation of it appears in his *Proslogium*, and he seems to have been the originator of it. Later, Descartes restates the argument, and in so doing brings into it the idea of causation which is eliminated from the argument as conceived by St. Anselm. Kant criticized the argument and indicated several points of weakness in it; and his criticism has generally been accepted as demolishing the argument in its traditional form. Hegel attempts to restate it in such a way as to escape the force of the Kantian critique, but his restatement changes the argument radically and makes it inclusive of practically all of the arguments mentioned in this section.

ment misses its object, and the misses are infinite in variety. Therefore, since error implies truth, an infinity of errors implies an absolute truth, an infinite system of truth, as its counterpart. But truth must exist in a mind; and an absolute system of truth can exist only in an Absolute Mind. The existence of an all-inclusive system of truth as the logical counterpart of all possible errors, which are infinite, implies the existence of a Mind capable of comprehending the system. In short, the existence of an infinity of possible errors implies the existence of a Mind before which all truth is actually and eternally present as a harmonious and non-contradictory system. And such a Mind is what we call in religion God. God, the all-knower, is thus proved by the very fallibility of human reason and its sense of its fallibility.¹

THE MORAL ARGUMENT. The moral argument undertakes to show that the moral experience of the race implies the existence of God. And the main road along which it advances is this: Moral values are objective at least in the sense that they are essential qualities of human nature; they are therefore real parts of the world-order in so far as human nature is a real part of the world-order; now man cannot but hold, and there are reasons why he may hold, that he and his values are real; the world-order must consequently be in some sense a moral order, in the sense, namely, that there is room in it for man and the ideal of

¹ This ingenious argument is presented in various writings by Josiah Royce (1855-1916), though he should not be held responsible for the argument precisely as formulated in the text. If the reader is curious to get Professor Royce's own statement of it, he should consult *The Religious Aspect of Philosophy* (1885), Chapter XI. The argument is further elaborated with special reference to the problem of God and defended against specific criticisms in *The Conception of God* (1897). The meat of the argument as Professor Royce conceives it may be put in his own disjunction: "Either there is no such thing as error, which statement is a flat self-contradiction, or else there is an infinite unity of conscious thought to which is present all possible truth" (*Religious Aspect of Philosophy*, p. 424). See A. K. Rogers, *English and American Philosophy Since 1800*, pp. 284-286.

goodness which is basal to his nature; and this could not be unless the world-order is directed by a conscious rational Being who wills the final triumph of goodness; God exists therefore as the necessary implication of the objectivity of moral values.¹

§ 4. *Evaluation of the arguments*

A complete survey of the preceding arguments is here impossible, but a few critical remarks may be made as an aid to further reflection on the student's part.

(a) The arguments based upon evidence drawn from the natural order, one can readily see, are not wholly convincing, if, indeed, they carry any conviction.

(i) Taken first in its temporal sense, the argument from First Cause is particularly weak. For one thing, it assumes that the cause (God) existed in its completion while the effect (the space-time order of things and events) was actually non-existent; and this contradicts our whole analysis of causation, which revealed that cause and effect are, as science conceives them at any rate, merely two sides or aspects of one total situation; the argument therefore uses the conception of causation in a non-scientific manner, and must either justify the unusual meaning it attaches to the notion or surrender its claim to validity. Again, the argument reduces God to the status of one event or fact within the series of events, gives him causal significance only at one instant, and so makes his existence of little logical concern; if God is assumed to exist merely as a first cause of the causal series, then there is little need of such an hypothe-

¹ This line of argument was emphasized by Kant as the only conclusive proof of God's existence which the human mind can of its own initiative frame, and so it is commonly associated with his name. The formulation which he gives of the argument, however, does not put it in its best light. His statement of the argument is to be found in the *Critique of Practical Reason*, Chapter II, section V (Abbott's *Kant's Theory of Ethics*, pp. 220-229). Sorley's *Moral Values and the Idea of God* (1919) is a more elaborate and more convincing statement of the argument.

sis—let one simply assume that the series had no beginning (and such an assumption is apparently as readily conceivable as that it had), and the one reason advanced by this argument in support of God's existence is removed. (ii) If we interpret the argument from First Cause in the teleological sense, it is in a little better case; but, so understood, it derives its strength from the fact that it then is in essentials identical with the argument from design and the moral argument. Finally, it is to be noted that the argument from First Cause, in either interpretation, assumes without proof that causal monism rather than causal pluralism is the true view of the causal series, since it would be meaningless if pluralism were true; and, as we have already pointed out in our discussion of causation, this assumption is at least debatable and cannot therefore be taken without question as the basis of an argument.

The argument from design has some weight. At least it brings the hypothesis under consideration into direct touch with ascertainable facts. Two points of serious criticism, however, stand fairly clearly against it. (i) In the first place, while there are indisputably evidences of design in the causal order of the world there are also, and equally indisputably, evidences of lack of design and maladaptations, and these must be taken into account in the final reckoning; for it is a well-established principle of reasoning that no competent discussion of a theory can overlook what are technically known as "negative instances"—instances of facts, that is, which seem to stand opposed to the theory in question. (ii) In the second place, recent discoveries in science tend to show that what design there is in the world can be accounted for in terms of discoverable natural causes, such as adaptation on the part of organisms necessitated by the struggle to exist. This is a simpler hypothesis in that it involves fewer assumptions than the other, and so, if provable, must be accepted, since it is a fundamental principle of rational procedure that of two hypotheses advanced

in explanation of a given set of data the simpler is preferable.¹ The argument from design, thus, is unsatisfactory; it was very much more weighty in the minds of eighteenth century thinkers than it is to-day.

The general conclusion concerning the arguments based upon the physical and biological environment is, then, that they are at best unconvincing. To many minds there seems to be no open road through nature to God. Are the other arguments in better case? Is there a road through the social environment to God?

(b) The *ontological* argument in its traditional form certainly carries little conviction to the modern mind. To St. Anselm and his contemporaries it had more significance, because of certain peculiar views then entertained about the origin and significance of ideas generally.² But nowa-

¹ Note Sir Isaac Newton's statement: "Nature does nothing in vain, and more is in vain when less will serve; for Nature is pleased with simplicity, and affects not the pomp of superfluous causes" (*Principia*, Book III). Cf. W. F. Cooley, *The Principles of Science*, Chapter III.

² These peculiar views of the Middle Ages came to a focus in the protracted debate in which the thinkers of this period indulged concerning the problem of "universals" and "particulars." This problem was whether "universals" (general concepts or notions) have any real existence in and for themselves outside of the mind which thinks them, or are mere names or symbols which man has invented for convenience in dealing with the "particulars" of experience (objects of sense perception). In other words, put in the form of the question we have already considered (see Chapter XI above) the problem is: Which are "appearances" and which "reality," the universals of thought or the particulars of sense perceptions? Two answers were given to this question during the Middle Ages. On the one hand were the Nominalists, who held that "universals" are not real but are appearances only; they are "names" or symbols which man uses to refer to different convenient groupings of the "particulars" of sense-experience. On the other hand were the Realists, who maintained that "universals" are not mere appearances but are realities having an existence as truly as do the "particulars" of sense-experience. The Nominalist would say: All "universals" are manufactured for practical ends by the mind of man, and exist in it alone. The Realist would say: All "universals" exist independently of the mind of man and in the nature of the environment. For the Nominalist "particulars" only are real; for the Realist "universals" are real as, if not more real than, "particulars."

St. Anselm was a Realist, and it is not difficult to see that his ontological argument for the existence of God is based upon the assumption of Realism. For further discussion and explanation of the medieval controversy the gen-

days it seems obvious that the argument, strictly taken, proves (if it proves anything) only that the idea of perfection implies the idea of existence; it certainly does not prove that there necessarily exists a perfect Being corresponding to the idea.¹ Furthermore, there is a false assumption which underlies the argument, namely, that the idea of "perfection" is the same in all minds. The truth of the matter is, of course, that there is wide diversity of views about the notion of perfection, and the real meaning of it will doubtless long continue to be a subject of controversy.

In connection with Professor Royce's ingenious argument founded on the possibility of error it would seem that three crucial points in the argument are: (i) that error is only "an incomplete fragment of truth"; (ii) that truth exists, and can exist, only in an inclusive thought or mind which knows both the truth and the error which is an "incomplete fragment" of it; and (iii) that there is only One Truth, one system of judgments all mutually involved and harmoniously related, and not many separate and distinct truths. The validity of the first thesis would seem to turn upon the answer to the question whether a judgment may ever be so hopelessly erroneous as not to be in any sense true—whether, in other words, a judgment may be sheer error; if so, then not every error is a partial truth. The second thesis is open to debate on the basis of the assumption that there is any intelligible meaning in the assertion that a judgment may be true or erroneous even

eral histories of philosophy should be consulted; De Wulf, *History of Medieval Philosophy*, goes into greater detail.

¹ St. Anselm's argument has frequently been subjected to criticism. The first attack upon it was made anonymously by a contemporary of St. Anselm, Gaunilo by name, who suggested that the same reasoning might prove the existence of a perfect island should one choose to entertain the notion of a perfect island. St. Thomas Aquinas later submitted the argument to detailed analysis. The classic criticism of the argument, however, is given by Kant in the division of the *Critique of Pure Reason* entitled "Transcendental Dialectic," Book II, section IV.

though its truth or error be wholly unknown to any mind.¹

The third of Professor Royce's theses raises again the problem of pluralism and monism, with special emphasis upon the puzzling question whether all relations are "internal," or some of them at least are "external."²

The moral argument is generally taken to be the strongest argument for the existence of God.—And there seems no question (to the writer's mind at least) that it has great weight, if one thesis be granted, namely, that moral values are objective in the sense that they are real qualities of the order of the world. Indeed, if this assumption be granted, the argument seems all but conclusive. If man (however and whenever he may have appeared in the stream of time) and his values are realities and not mere appearances; if his intelligence is a genuine illumination emerging from the forces of nature and not a mere spark accidentally struck in the Stygian darkness soon to be blown out by the "vast driftings of the cosmic weather"; if his values, and, particularly, his moral values, are expressive of something that is of ultimate and eternal significance; if, in short, the world can in any genuine sense be called a moral order—then, apparently, it is decidedly more reasonable to believe than not to believe that there is a directing Mind in the on-goings of things, guaranteeing, or at least strenuously fighting for, the conservation and consummation of goodness. If moral values are genuinely objective, then they are predicable of the world; and it is not easily comprehensible how this could be unless the world were spiritual in its deeper drifts.

It appears from the preceding estimate of the moral ar-

¹ The point here, if pursued, would lead directly into the current controversy between the two groups of contemporary thinkers usually called the "idealists" and the "neo-realists" concerning the relation between object known and the knowing of it (between the object of judgment and the act of judging) and the implications of that relation. Something of the nature of this controversy may be learned from J. A. Leighton, *The Field of Philosophy* (definitive edition), Chapter XX, and the references there cited.

² See above, Chapter IV, section 5 (b).

gument that its weight turns upon the assumption that moral values are genuinely objective, that is, are qualities of the world. Is there reason for holding this view of moral values? This would seem to be the crucial question to which we are finally driven in our attempt to estimate the significance of the argument.

A complete answer to this question could hardly be given short of a special volume devoted to it.¹ The general line along which an affirmative answer might run may roughly be outlined as follows: In his moral life man struggles to realize an ideal; this ideal does not attain its full realization within his experience since it always lies in a sense beyond him, but it has validity for him and with reference to it he approves and disapproves, praises and censures; it must therefore be accredited a reality independent of human experience, and so the order of reality is partly at least a moral order; goodness, thus, is genuinely objective and is a quality of the nature of things. Professor Sorley puts the argument here summarily outlined as follows: "Of moral values it clearly holds that it is in persons that they are realized, not in mere things, and that they belong to persons in as truly objective a sense as any other characteristics belong to them. But something more than this is true. It is not merely the value actually realized in someone's conscious life that must be held to belong to objective reality. In bringing value into existence the individual person is conscious of a standard or ideal which has validity as a guide for his personal endeavor, or of an obligation which rests upon him. The attainment of value is recognized as a value only because of its conformity with this standard or law of value, or because of its approximation to this ideal of value. It follows therefore that the value or goodness actually achieved in personal life implies as its ground or

¹ The volume by W. R. Sorley, *Moral Values and the Idea of God*, is an interesting, though for the beginner somewhat involved, survey of the general problem. This survey, however, is about as direct as the complexities of the problem will permit.

condition a standard or ideal of goodness. Accordingly, we are compelled to form the conception of an ideal good or of a moral order, which, as the condition of actualized goodness, must also be regarded as in some sense having objective reality."¹ And so goodness is supposedly shown to be, not only in the world, but a truly significant feature of it. It is, in short, genuinely objective.²

It would thus appear that the moral argument, while not finally conclusive perhaps, is sufficient answer to the cautious hesitancy of the agnostic and the positive attacks of the atheist. It gives us the rational right to believe. Linked with the argument outlined by Professor Royce its value is greatly increased. The other arguments, in certain interpretations at least, are not without significance; but, to meet the criticisms of them, they would have to be revised in principle and reduced essentially to one of these two. The First Cause argument, to have value, must be read in terms of the argument from design; and this, in turn, must be so read as to make "design" mean the ordered system of things taken in their scientifically or rationally determinable setting. The ontological argument is hopelessly out of date so long as it remains in its traditional form; if brought up to date it is, to all intents and purposes, identified with the moral argument. So the two main lines of argument (the moral and the epistemological—Professor Royce's) leading to the idea of God focus in man and his values. Through human nature, moral and theoretical, lies an apparently open road to God.

¹ *Moral Values and the Idea of God*, pp. 508-509.

² It should be noted by the student that the above argument rests upon the conception of goodness as an ideal towards which the moral agent strives and which for him has absolute authority. Is this the correct view of goodness? Here we are brought back to the considerations of our chapter on goodness and into the field of ethics.

§ 5. *The nature of God*

Thus far the discussion has been directed towards the problem of the existence of God. In conclusion let us briefly inquire into the problem of the nature of God. Granted that we have a rational right to believe, in what sort of God are we at liberty to believe? Whom may we serve, Jehovah or Baal or both? May we be polytheists or monotheists, pantheists, or theists, at will? or must we choose among these views? And how choose?

While it is true that our preceding discussion has not directly concerned itself with the problem of the nature of God, the problem has all along been implicit in the arguments we have studied and they, by implication, have had much to say concerning it. Let us now shortly draw out some of these implications.

(a) So far as polytheism is concerned, it is clear that none of the arguments outlined above have anything to do with it. This conception of the nature of God is simply ignored in the debate. Nor can any of the arguments be said to favor deism, with the exception of the argument from First Cause (in the temporal sense) and the argument from design; and both of these arguments, we have seen, are peculiarly weak. The argument which tries to identify God with a temporally first cause gets us nowhere save through an apparently unjustifiable use of the word *cause*. Furthermore, the God it provides us with is a logically useless conception so far as the actual on-goings of life and the world are concerned; the simple assumption that the world had no beginning in time, an assumption which is as justifiable as the one on which the argument rests, is sufficient to overthrow it. And the argument from design is in no better case; it gets what strength it has by closing its eyes to the non-purposive mal-adaptations with which the natural order teems. And if one tries to strengthen it by,

defining "design" in terms of the rational sequences and the ordered workings of nature, it leads forthwith away from deism towards either theism or pantheism.

And from this it would seem to follow that the implication of reason (assuming, of course, that the arguments above summarized are the main arguments) is that neither polytheism nor deism can be accepted as conceptions of the true nature of God. What reason has to say on the problem of God's nature seems to be against the claims of both these views. And here reason is in agreement with the deeper drift of mankind's religious experience. All of the great religions are in principle monotheistic, as we have intimated above and as history plainly shows; and the God of these greater religions is no mere Contriver sitting outside his machine watching it go and either unwilling or powerless (or both) to interfere in its movements, but He is, rather, embedded deep in the structure of the world and seriously active in its affairs and destiny. So both reason and the more or less unreflective religious consciousness concur in the exclusion of polytheism and deism. They therefore must be set aside as unsatisfactory.

(b) The field is thus apparently left to theism and pantheism. What can be said of their relative merits? Here the religious consciousness of mankind does not speak unequivocally. One of the great religions, at least, is thoroughly pantheistic; and it numbers among its devotees a large part of the human race. But Buddhism¹ stands practically alone in this regard; the other great religions, particularly Christianity and Mohammedanism, are predominantly theistic in their view of God. So it would appear that from the standpoint of the religious consciousness the weight of authority lies in favor of theism rather than pantheism; and this is certainly the case if it can be shown (as

¹ As noted above Buddhism may be said to be atheistic. But this interpretation of it is not true without important qualifications.

many hold it can be) that modern Christianity expresses the profoundest insight that the religious consciousness of man has yet attained.

Like the religious consciousness reason, too, hesitates between pantheism and theism. But here also the weight of authority would seem to favor the claims of theism. The arguments above enumerated, especially the strongest ones (the epistemological and the moral arguments), lead more directly towards theism; indeed, it would be difficult to reconcile them with a thorough-going pantheistic view of the world. And in the historical development of philosophical thought the greatest thinkers have, on the whole, inclined towards theism rather than pantheism. One of the most serious charges that a critic can bring against a philosophical system is the accusation that in its theodicy it is pantheistic. For in a pantheistic universe moral values are in danger of being choked, since there seems little room in such a world for that freedom from which, as we have already seen, goodness springs.

Such facts as these seem to establish a presumption in favor of the theistic rather than the pantheistic conception of God. After all, however, the issue must be settled, not by authority, but by a reasoned consideration of the facts themselves. As an assistance to further reflection on the reader's part I would suggest that the issue ultimately turns upon those moral values because of whose existence the hypothesis of God seems rationally necessary. In which world can these values best thrive, a theistic or a pantheistic one? With which world is freedom most easily reconciled? Which makes room more readily for the creation of values, and provides most securely for their conservation? These are the type of questions that must be answered as the issue is settled; and they are the questions whose answers will lead, if I mistake not, towards theism and away from pantheism. For if it be true that

We are no other than a moving row
 Of Magic Shadow-shapes that come and go
 Round this Sun-illuminated Lantern held
 In Midnight by the Master of the Show ;

Impotent pieces of the Game He plays
 Upon this Checker-board of Nights and Days ;

then moral values wither and fade away ; they are as the grass of the field. Whether pantheism makes of life such a puppet-show may be questioned ; but, strictly interpreted, it would seem to threaten precisely such a tragedy. Theism, on the other hand, gives a freer range to our moral wings and does not, at least need not, turn our moral values into a deception and illusion. But the reader must here be left to his own reflection for further pursuit of the problem.

(c) If one accepts theism, however, one's perplexities are not at an end. For the troublesome question concerning the precise manner in which God is related to the world, particularly to finite conscious minds, presents itself. If God be a self-conscious Being working His will in the world, how can His relation to other wills, finite human wills, be conceived? I raise this question, in conclusion of this section, not to answer it, but to emphasize its importance for theism. Two views have been advanced, and I will briefly state each and give references for the curious. Professor Royce argues that God must be conceived as an absolutely all-comprehensive mind or will in which exists everything that may be said to have existence ; our wills, then, exist as a part of God's will and our thoughts are fragmentary parts of His all-inclusive thought. This looks very much like pantheism, but Professor Royce assures us it is not. But the argument by which he undertakes to justify his position the reader should learn in Professor Royce's own words.¹ Professor James, on the other hand, maintains

¹ See the *Conception of God*, particularly the "Supplementary Essay." Compare the view expressed by Tennyson in the poem entitled *The Higher Pantheism*.

that the only conceivable relation that a theist can hold exists between God and man is that of fellow-workers in a common cause, namely, the struggle against evil. But does this not make God, if not finite, then at least less than absolute by placing over against Him something (evil) which in some genuine sense lies beyond Him? Professor James answers in the affirmative; but he contends that this view of God is alone tenable in the final analysis, and that such is the God whom Christians worship and reverence. But Professor James also must be permitted to speak for himself.¹ The issue is a big one, and a little reflection will disclose the fact that it is of fundamental importance not only in connection with the problem of God but also in connection with the problem of freedom of will and other problems that at first glance seem to lie far afield.

¹ See *Pragmatism*, Lectures IV and VIII; and *Varieties of Religious Experience*, pp. 524-526. His general point of view is developed more elaborately in *A Pluralistic Universe*. In the passage in *Varieties of Religious Experience* Professor James speaks of his view as a sort of polytheism; but it is a polytheism in a sense very different from the meaning given to the term in the text above.

This view of a limited deity has entered into the literature of the day. See, for example, H. G. Wells: *God the Invisible King*, and *Mr. Britling Sees it Through*.

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APPENDIX

NATURE AND CERTAINTY OF KNOWLEDGE: HISTORICAL NOTE

The general problem dealt with in the first Part of this survey has, almost from the beginning, been of concern to students of philosophy. It was of interest to the Greek philosophers, and both Plato and Aristotle gave much consideration to it. Because of historical circumstances into which we need not here inquire, it was of peculiar interest to modern philosophers from Descartes to Hegel, and was studied by them in great detail; in fact, it is no exaggeration to say that none of the basal issues involved wholly escaped analysis at their hands. A summary statement of the views held by them may, therefore, prove to be a helpful supplement to the more or less independent discussion of Part I above.

These views are mainly four: *rationalism* (developed especially by Descartes and Spinoza); *empiricism* (suggested in outline by Bacon, and expounded in some detail by Locke); *criticism* (originated and formulated in great detail by Kant); and, finally, *dialectic* (stated most elaborately by Hegel). We shall summarize these four views in the order here indicated.¹

A. *Rationalism : Descartes and Spinoza*

(1) René Descartes (1596-1650), sometimes called the father of modern philosophy because of the strategic position he occupies in its history, while still a young man found himself unable to accept for genuine knowledge what he had been taught at the famous Jesuit school of La Flèche. Everything then commonly accepted as knowledge by the learned world seemed to him to

¹ The works of these authors as referred to in the following survey may be conveniently found in the several volumes of *Selections*—one volume to each author—published by Charles Scribner's Sons in The Modern Student's Library (Philosophy Series) under the general editorship of R. B. Perry.

be without solid foundation. "The works of the ancient pagans which deal with morals" he deemed comparable "to palaces most superb and magnificent, which are yet built on sand and mud alone." And the works of thinkers in other fields, especially in philosophy and the sciences derived from it, similarly lacked solidity, he thought, and for precisely the same reason—they were built on foundations which were "far from firm." He did, indeed, find mathematics more stable than the others "because of the certainty of its demonstrations and the evidence of its reasoning"; but even here he "was astonished that, seeing how firm and solid was its basis, no loftier edifice had been reared thereupon." This instability of the learned disciplines seemed to him to follow from a lack of correct method, which he set himself the task of discovering; and mathematical analysis furnished him his clue. The details of his voyage of discovery he gives us in two short works: *Discourse on the Method of Rightly Conducting the Reason and Seeking for Truth in the Sciences* (1637), and *Rules for the Direction of the Mind* (probably written in 1628, but published posthumously in 1701). Into some of these details we are now to inquire.

According to Descartes's view of the method of discovering truth, there are only two "mental operations by which we are able, wholly without fear of illusion, to arrive at the knowledge of things." These operations are: *intuition* and *deduction*. These, he maintains, "are the most certain routes to knowledge, and the mind should admit no others." An understanding of each of these is, therefore, equivalent to an understanding of the essentials of the Cartesian method of correct reasoning.

(a) What Descartes understands by intuition may best be put in his own words: "By *intuition* I understand, not the fluctuating testimony of the senses, nor the misleading judgment that proceeds from the blundering constructions of the imagination, but the conception which an unclouded and attentive mind gives us so readily and distinctly that we are wholly freed from doubt about that which we understand. Or, what comes to the same thing, *intuition* is the undoubting conception of an unclouded and attentive mind, and springs from the light of reason alone. . . . Thus each individual can mentally have intuition of the fact that he exists, and that he thinks; that the triangle is bounded by

three lines only, the sphere by a single superficies, and so on."¹ To this clear-cut statement nothing by way of elaboration need be added. The position does involve difficulties, as we shall have occasion to note below when we come to a critical estimate of it; but what Descartes intends by the term "intuition" is here expressed as precisely as perhaps it can be.

One difficulty in the position, indeed, Descartes himself elsewhere refers to.² It is the difficulty of ascertaining with assurance exactly what propositions may, and what may not, be called intuitive. That this is a formidable difficulty in the way of Descartes's view there can be no denial. But he is convinced that the difficulty is by no means insuperable; in fact, he seems to feel that it is fairly easily removed. Since an intuitive proposition is any proposition which expresses "the undoubting conception of an unclouded and attentive mind," it follows that any proposition which is intuitive must be known to be so; the clear and distinct conception of which it is the expression clearly discloses its intuitive character. An intuitive proposition necessarily shines by its own light.

And from this it follows at once that any intuitive proposition is also necessarily true. "What in a proposition is requisite in order to be true and certain" is its intuitive character alone. Descartes arrives at this general conclusion from analytical observation of one proposition which, he holds, is indisputably intuitive—the proposition, namely, "I think, hence I am" (*Cogito ergo sum*). Clear and distinct conception of this proposition discloses the fact that it cannot be doubted, since the very doubt of it proves it to be true. Its intuitive character is, thus, ample guaranty of its truth; what cannot be both clearly and distinctly conceived and at the same time doubted is *ipso facto* true. Now, Descartes contends, what holds in the case of this intuitive proposition must hold in all cases; any similarly intuitive proposition must similarly be accepted as necessarily true. "Having remarked that there is nothing at all in the statement 'I think, therefore I am' which assures me of having thereby made a true assertion, excepting that I see very clearly that to think it is necessary to be, I came to the conclusion that I might assume, as a general

¹ *Rules for the Direction of the Mind*, under the elaboration of Rule III.

² For instance, in Part IV of the *Discourse on Method*.

rule, that the things which we conceive very clearly and distinctly are all true. . . ."¹ For Descartes, then, the intuitive character of a proposition adequately guarantees its claim to be true; this is the only criterion of truth to which in the end he appeals.²

(b) But besides intuition Descartes admits another way of knowing, namely, deduction. This he defines as the way of knowing "by which we understand all necessary inference from other facts that are known with certainty." It is exemplified in any chain of reasoning, as in mathematics, in which various conclusions are successively drawn through a series of steps of inference starting from what is intuitively or certainly known. Intuition is distinguished from deduction "by the fact that into the conception of the latter there enters a certain movement or succession, into that of the former there does not. Further, deduction does not require an immediately presented evidence such as intuition possesses; its certitude is rather conferred upon it in some way by memory." In other words, we may distinguish the two by saying that intuition is clear and distinct conception of one proposition taken by itself, while deduction is similar conception of a series of propositions taken in their logical interrelations (a system of propositions).

But, Descartes maintains, the certainty and truth of deduction everywhere depend on intuition. Every step of inference in the series must be intuitively clear and must run to ground in a proposition which is either itself intuitive or deduced by a similar process which is ultimately grounded in an intuitive proposition. "For example, consider this sequence: 2 and 2 amount to the same as 3 and 1. Now we need to see intuitively not only that 2 and 2 make 4, and that likewise 3 and 1 make 4, but further that the third of the above statements is a necessary conclusion from these two." Thus intuitive certitude "is required not only in the enunciation of propositions, but also in discursive reasoning of whatever sort."

¹ *Discourse on Method*, Part IV (*Descartes: Selections*, ed. by R. M. Eaton, p. 30).

² His appeal to the "veracity" of God as the criterion of propositions concerning the existence and nature of bodies lies beyond the scope of the present general survey. The appeal is of very doubtful validity and, in fact, assumes that intuition is the logically prior criterion.

It is clear, then, that for Descartes deduction cannot logically be separated from intuition, and that intuition is fundamental. The former always involves the latter and depends upon it for its validity. First principles, indeed, may be known by intuition alone; but propositions which are deduced from first principles "are known now by intuition, now by deduction, *i.e.*, in a way that differs according to our point of view." Hence it follows that deduction is, strictly speaking, a series of intuitions and clear and distinct conception obtains here also as the sole criterion of truth.

It is Descartes's deep-set conviction that any thinker who adequately employs these two methods of intuition and deduction (they are seen to be really one method, namely, that of intuitive certainty, if the dependence of deduction on intuition be taken into account) cannot fall into error. He will, on the contrary, always and necessarily attain both true and complete knowledge. For, in the first place, he will never be tempted tacitly to assume that what is false is true; and, in the second place, he will clearly apprehend how "deductions should be discovered in order that we may arrive at the knowledge of all things"—and Descartes avows that he fails to see "what else is needed to make it complete." He therefore summarizes the whole matter in the following rule: "In the subjects we propose to investigate, our inquiries should be directed, not to what others have thought, nor to what we ourselves conjecture, but to what we can clearly and perspicuously behold and with certainty deduce; for knowledge is not won in any other way."¹ All other methods, therefore, "should be rejected as suspect of error and dangerous."

(2) Like Descartes, Benedict Spinoza (1632-1677) gives us a somewhat detailed account of his search for the method which leads to genuine knowledge. The account is found in his essay entitled *On the Improvement of the Understanding* (1677). This work was never completed; but, despite its fragmentary character, it offers a fairly complete statement of the author's conception of method. It also discloses the fact that Spinoza's search was motivated by deeply moral and religious interests. He expresses his firm conviction that there is something "of which the

¹ Rule III from *Rules for the Direction of the Mind*. Compare the four precepts set down by Descartes in Part II of the *Discourse on Method*.

discovery and attainment would enable [him] to enjoy continuous, supreme, and unending happiness." Nor was he in doubt as to what that "something" is; it is "knowledge of the union existing between the mind and the whole of nature." In the search for true knowledge, therefore, Spinoza was in search of the perfect life; the discovery of the one was, in his opinion, identical with the discovery of the other. And he was chiefly concerned about the perfect life; knowledge he deemed only an indispensable means to its attainment. Thus, in his own conception, Spinoza's essay on philosophical method is merely introductory to the more important problem of the good life, which he deals with at length in his masterly *Ethics*. And this essay should, of course, be read in this light. Nevertheless, precisely because Spinoza conceives his discussion of method as preliminary to the larger and, for him, more important issue, his view of method can be discussed independently of his view of perfection; and we shall so discuss it here.

(a) "Reflection shows," Spinoza maintains, "that all modes of perception or knowledge may be reduced to four: (i) perception arising from hearsay or from some sign which everyone may name as he pleases; (ii) perception arising from mere experience . . . ; (iii) perception arising when the essence of one thing is inferred from another thing, but not adequately . . . ; (iv) lastly, there is perception arising when a thing is perceived solely through its essence, or through the knowledge of its proximate cause." To enable us more clearly to grasp his distinctions, Spinoza proceeds at once to give examples of the four kinds of perception. Of the first: "By hearsay I know the day of my birth, my parentage, and other matters about which I have never felt any doubt." Of the second: "By mere experience I know that I shall die . . . , that oil has the property of feeding fire, and water of extinguishing it . . . , that a dog is a barking animal, man a rational animal, and in fact, nearly all the practical knowledge of life." Of the third: "After I have become acquainted with the nature of vision, and know that it has the property of making one and the same thing appear smaller when far off than when near, I can infer that the sun is larger than it appears, and can draw other conclusions of the same kind." And of the fourth: "Lastly, a thing may be perceived solely through its

essence ; when, from the fact of knowing something, I know what it is to know that thing, or when, from knowing the essence of mind, I know that it is united to the body. By the same kind of knowledge we know that two and three make five, or that two lines each parallel to a third, are parallel to one another." In both the essay *On the Improvement of the Understanding* and in the *Ethics* Spinoza makes use of one example to illustrate all four modes of perception. In the *Ethics* it is stated as follows: "Let there be three numbers given through which it is required to discover a fourth which shall be to the third as the second is to the first. A merchant does not hesitate to multiply the second and third together and divide the product by the first, either because he has not yet forgotten the things which he heard without any demonstration from his schoolmaster, or because he has seen the truth of the rule with the more simple numbers, or because from the 19th Prop. in the 7th book of Euclid he understands the common property of all proportionals. But with the simplest numbers there is no need of all this. If the numbers 1, 2, 3, for instance, be given, every one can see that the fourth proportional is 6 much more clearly than by any demonstration, because from the ratio in which we see by one intuition that the first stands to the second we conclude the fourth."¹

(b) Of these four modes of perception Spinoza maintains that the last "alone apprehends the adequate essence of a thing without danger of error." The first is always uncertain and "cannot be scientific in character. For simple hearsay cannot affect anyone whose understanding does not, so to speak, meet it half way." The second is likewise uncertain and indefinite in its results, "for we shall never discover anything in natural phenomena by its nature, except accidental properties. . . ." The third does, indeed, give us a deeper insight into the nature of things, and within limits "it enables us to draw conclusions without risk of error ;" but it can never give us absolute certainty, since the conclusion drawn is always dependent in the end on some premise which itself rests on untested assumptions. Only the fourth kind of perception gives us this certainty, because only the insight it furnishes discloses the ultimate essences of things. It alone is

¹ *Ethics*, Part II, Prop. XL, Schol. 2.

without assumptions and, therefore, final in its pronouncements ; it alone is adequate knowledge.

Such insight is necessarily true, and it carries within itself its own criterion. There is no sign of the possession of truth except a true idea, and the possession of a true idea is sufficiently attested by the true idea itself. In order to be assured of the truth of knowledge, then, it is not necessary to know that we know ; if such were necessary, knowledge would be impossible, because we should have to know that we know that we know indefinitely. What is needed to be assured of the truth of knowledge is simply to know in the manner of the fourth kind of perception ; here we have insight which is absolute and final. "No one who has a true idea is ignorant that a true idea involves the highest certitude ; to have a true idea signifying just this, to know a thing perfectly or as well as possible. No one, in fact, can doubt this, unless he supposes an idea to be something dumb, like a picture on a tablet, instead of being a mode of thought, that is to say, intelligence itself. . . . Just as light reveals both itself and the darkness, so truth is the standard of itself and of the false."¹ Thus for Spinoza there is no problem of discovering the signs of true ideas, as something apart from and supplementary to the ideas themselves. The problem is, rather, to discover true ideas ; this alone is the task of any study in method. When discovered, the true ideas will of themselves disclose the validity of their truth-claims.²

(3) From the preceding considerations it is presumably clear that there is substantial agreement between Descartes and Spi-

¹ *Ethics*, Part II, Prop. XLIII, Schol. Spinoza's insistence here that an idea is not "something dumb, like a picture on a tablet," but is, rather, "intelligence itself" must be borne steadfastly in mind if one is fully to grasp his position with respect to the problem of true ideas. In view of this insistence, his position may be expressed thus: the only criterion of true intelligence is intelligence itself. This way of stating the matter leaves many puzzling phases of the problem of truth untangled, largely because of the ambiguity of the term "intelligence." But it has the advantage of placing the emphasis where Spinoza wishes to have it placed ; and there seems little doubt that the emphasis is correctly placed. The reader should compare Spinoza's view with that of Locke on the same subject. The contrast is marked and important.

² Note the following passage from the essay *On the Improvement of the Understanding* : "As the truth needs no sign—it being sufficient to possess the subjective essence of things, or, in other words, the ideas of them, in

noza on the solution of the general problem of method. According to both, knowledge strictly so called, as opposed to hearsay opinion or unsupported beliefs or even reasoned convictions grounded in untested assumptions, is to be identified with that sort of direct insight which is so clear and distinct that doubt concerning it is logically impossible. It is, in Descartes's words, "the undoubting conception of an unclouded and attentive mind." Descartes calls it *intuition* and deduction intuitively linked, while Spinoza calls it *the perception of a thing through its essence* (in the essay *On the Improvement of the Understanding*), or *intuitive science* (*scientia intuitiva*, in the *Ethics*). But they both intend to affirm essentially the same thesis, namely, that genuine knowledge is a sort of insight so sun-clear that it cannot reasonably be called in question. And for both alike, this sort of insight is the only citadel of refuge in which human science is secure from the attacks of the sceptic.

Despite this substantial agreement between the two thinkers, however, there is a basal difference between them in their conceptions of intuitive certainty. This is not clearly brought out in the preceding summaries of their views, but it is implicit there and it becomes explicit in the fuller light of the systems they separately built on their foundations. The difference is not readily statable in short compass without misrepresenting either of the philosophers, but it touches matters of fundamental importance and the effort must be made to state it. Perhaps without too much misrepresentation, it may be briefly put as follows: Descartes hopes to find intuitive certainty in isolated propositions or ideas (as in his famous *Cogito ergo sum*—I think, hence I am), whereas Spinoza expects to find it only in an ordered or logical series of propositions or ideas and, ultimately, in the totality of logical relations which is the universe and which he calls by the name of God. The certainty disclosed by the sort of intuition Descartes describes may readily be revealed, he supposes and insists, in any simple proposition which on a given occasion may be presented to "an unclouded and attentive mind" so clearly order that all doubts may be removed—it follows that the true method does not consist in seeking for the signs of truth after the acquisition of the idea, but that the true method teaches us the order in which we seek for truth itself, or the subjective essence of things, or ideas, for all these expressions are synonymous."

that no rational ground for doubting it can be found ; and he further supposes that there are several propositions (about existence and causal relations, for example) which are thus logically self-contained. Spinoza, on the other hand, is equally convinced "that the mind apprehends itself better in proportion as it understands a greater number of natural objects" and that, in the end, "our mind must deduce all its ideas from the idea which represents the origin and source of the whole of nature" if it is "to reproduce in every respect the faithful image of nature"—if, that is, it is to be certain of the truth or adequacy of its ideas. Descartes does, indeed, think that we may make the whole body of our knowledge more certain by obeying the following rule: "If, after we have recognized intuitively a number of simple truths, we wish to draw any inference from them, it is useful to run them over in a continuous and uninterrupted act of thought, to reflect upon their relations to one another, and to grasp together distinctly a number of these propositions so far as is possible at the same time."¹ But it is to be noted that this rule is to obtain only when "we wish to draw any inference" from "a number of simple truths" which severally "we have recognized intuitively"; the emphasis is still upon the possibility of recognizing intuitively a number of simple truths, presumably in isolation from each other. Spinoza would, in principle, certainly object to this formulation. He would hold it to be not only "useful," but necessary, to reflect upon the relations of true ideas, in order to discover that they are true ; he would therefore deny that there are any "simple truths" to be "recognized intuitively" in the sense here affirmed by Descartes. For, according to Spinoza, true ideas are "our instruments for proceeding with our investigation"—that is, the function of a true idea is to enable us to proceed to other true ideas—and this instrumental function is grounded in the logical relation which the one true idea bears to others ; a given true idea logically generates or leads to other true ideas, because they all belong to one logical system.

This difference between the two rationalists, we have said, is important. And it is so, because it is indicative of two radically different views of the nature of logical analysis. According to

¹ Rule XI from the *Rules for the Direction of the Mind*.

Descartes, logical analysis aims at the discovery of propositions which are ultimate in the sense of not being further analyzable, or positively, in the sense of being logically self-contained; such propositions he supposes are intuitively certain apart from their relations to other propositions. According to Spinoza, too, logical analysis seeks to discover what is logically self-contained; but this, he contends, must necessarily be a system or logical order of propositions and not any simple proposition standing alone. For Descartes logical analysis leads to the logically atomic, for Spinoza it leads always to systematic wholes.

In the end, this difference between the two thinkers can perhaps be traced to a fundamental assumption in respect of the relation between ideas, or the objects of thought, and things—an assumption which Spinoza explicitly defends and which Descartes, while not explicitly taking account of, does in fact implicitly deny. This is the assumption expressed by Spinoza in his reiterated insistence that a true idea discloses the “subjective essence” (we would say the “objective essence”) of the thing of which it is the true idea; that, in other words, true ideas disclose the structure of the environment. Accepting this assumption as solidly grounded, Spinoza is in a position to argue that “the idea in the world of thought is in the same case as its correlate in the world of reality” and that, consequently, “certainty is the actual mode in which we perceive an actual reality”—that, in other words, certainty attaches only to a logically ordered system of realities. Descartes, on the other hand, tends tacitly to assume the opposite, namely, that ideas are merely mental constructions whose meanings are independent of correlates in the world of reality; and he is therefore reduced to the necessity of defining certainty exclusively in terms of immediate states of consciousness, that is, in terms of the clear and distinct conception “of an unclouded and attentive mind” busy with isolated propositions.

B. *Empiricism: Bacon and Locke*

In seventeenth century Britain, emphasis was placed on a conception of the nature of knowledge in important respects rather radically different from that defended by either of the continental thinkers above considered. According to this British view,

knowledge and its certainty are grounded in experience ; hence, the view is usually called the "empirical" view of knowledge. We are, in this section, to inquire into some of its basal tenets ; and we take as representative of it the two authors who, perhaps more than others, first consciously undertook to formulate and defend it, namely, Francis Bacon and John Locke.

(1) Francis Bacon (1561-1616), like Descartes, was dissatisfied with the medieval tradition dominant in the universities of his day. What it had supposed to be knowledge, tested and proved, seemed to him, as it seemed to Descartes, built upon quite insecure foundations. And he was convinced, as was his younger French contemporary, that a new method was demanded if the human mind were ever to achieve a body of beliefs that could lay claim to the title of knowledge. This new method, as he conceived it, he undertook to formulate in an elaborate work published in 1620 under the title, *Novum Organum*. His conception of this new method differs radically from that of Descartes or of Spinoza, as the following statement may serve roughly to indicate.

(a) As Bacon views the matter, two things are absolutely necessary if man is ever to attain any insight which deserves to be called knowledge. The first is that the thinker must rid his mind of all preconceptions and thoughtless assumptions, "idols" Bacon calls them, and approach the task of thinking with a mind "swept and garnished." The second is that he shall interrogate nature and by pointed questions wring her secrets from her. In short, for Bacon the true method of knowing consists in forcefully questioning nature without prejudice, with an open mind. If men would only learn to do this, if they would only "force themselves for awhile to lay their notions by and begin to familiarise themselves with facts," Bacon does not doubt that genuine knowledge would be speedily gained and the sciences rapidly advanced.

The "idols" Bacon divides into four classes or groups: those of the Tribe, of the Cave, of the Market-place, and of the Theatre. By the first, he understands the "false notions" or prejudices that "have their foundation in human nature itself, and in the tribe or race of men." By the second, he understands those prejudices or preconceptions that arise from the peculiar circumstances of the individual's own life, such as the traditions of the

social milieu into which the individual is born. The third group of "idols" springs primarily from language; in many ways it happens that "words plainly force and overrule the understanding, and throw all into confusion, and lead men away into numberless empty controversies, and idle fancies." And, finally, there are the "idols" which have "immigrated into men's minds from the various dogmas of philosophies, and also from wrong laws of demonstration"—here Bacon is thinking primarily of the influence exerted on thought in his day by traditional theories, which seemed to him "but so many stage-plays, representing worlds of their own creation after an unreal and scenic fashion."

There can, presumably, be little doubt that Bacon's "idols" are important factors in much of mankind's erroneous reasoning; and his analysis of them should be read by everyone who is interested to learn about the unconscious source of many an illusion and superstition. And Bacon is right, again, when he urges as a requisite to serious thinking that they "must be renounced and put away with a fixed and solemn determination and the understanding thoroughly freed and cleansed." But, as he himself is well aware, this can most effectively be done by turning the mind to the contemplation of nature. "The formation of ideas and axioms by true induction is no doubt the proper remedy to be applied for the keeping off and clearing away of idols." So the second thesis in Bacon's theory of method is, in fact as well as in his own opinion, its basal tenet.

(b) This thesis, as we have already noted, is that the goal of thinking is the apprehension, or, as Bacon prefers to say, the interpretation of nature. And the chief value of what he has to teach us lies in his elaboration and justification of this thesis. Unfortunately for our present interest in his statement, it is rather diffuse and concerns many matters which are foreign to the main theme of our survey. But there are at least two points on which Bacon insists with repeated emphasis and which are directly relevant to our present undertaking. These we shall therefore set down here as constituting the main characteristics of Bacon's conception of the way of knowing.

In the first place, he is quite clear that knowing first of all requires careful application to "experience and particulars." Accurate observation, Bacon is aware, is an indispensable pre-

requisite to fruitful interpretation, and observation must be concerned with particulars. So the reconstruction of knowledge which Bacon sought must, he was convinced, begin with a painstaking examination of direct experiences. This, he realized, is by no means an easy task. "What in observation is loose and vague, is in information deceptive and treacherous"; and to avoid such observation a precision, not easily or lazily attained, is demanded. Carefully controlled observation is called for; and Bacon never wearies of emphasizing the importance of experimentation, though he does little to aid concretely in the development of its technique.

But the careful observation of particulars is not sufficient; interpretation is also necessary. To accomplish this, Bacon urges in the second place, the mind must pass on to the discovery of general laws or (as Bacon usually calls them) axioms. After the "store of particulars has been set out duly and in order before our eyes," what remains is very important; and that is to "educer" from these particulars, by a certain method and rule, the axioms or laws which apply to them. Having done this, we are in possession of instruments by which we may be able to discover other particulars and thus to penetrate further into nature's secrets than unaided observation can carry us; and, in any event, they are instruments necessary to our practical control over nature—which Bacon regards as the *raison d'être* of all knowledge.

Thus, our intellectual voyage of discovery "does not lie on a level, but ascends and descends; first ascending to axioms, then descending to works." The axioms are "educated" from particulars and these, in turn, are rendered more amenable to use by means of the axioms. Furthermore, the axioms thus educated from particulars "in their turn point out the way again to new particulars." So this method of procedure reveals both the details and the "forms" of nature's structure, and as a consequence renders her subservient to our practical interests. "Knowledge is power."

(c) Unfortunately, Bacon does not tell us what, more precisely stated, is this process of "educing" the axioms from the particulars; nor does he give us anything like an adequate description of the characteristics of the particulars themselves. These omis-

sions, of course, leave unanswered some very important questions about his conception of knowledge. But from what he does say it is not difficult to gather what in the main he wishes to emphasize as the chief stages in the inductive method. They are: experimental observation (not further defined) of particulars (undefined, except that they are conceived to be those aspects of nature open to sense-perception) and the "eduction" (not described) of axioms or "forms" (which generally, though not very consistently, seem to be identified in principle with what we should ordinarily call laws). And the assumption on which he proceeds throughout—an assumption, by the way, which later scientific achievement has done much to justify—is that the discovery of these axioms will lead both to the discovery of new aspects of nature and to mastery over her.

This failure on Bacon's part to present a thorough-going analysis in support of his view of method leaves his conception of knowing without secure foundation. Many assumptions are left hanging loose, with no attempt to justify them and even with no indication that they are recognized. He repeatedly avows that the house of knowledge built before his day was largely superstition and error, and that a new method is called for if a more substantial structure is to be erected by future generations; and, as we have already noted, he does succeed in indicating something of the framework of the method which seems to him needed. But the finer aspects of this new method, especially the basal assumptions involved in its structure, almost entirely escape his attention. For this reason the judgment which he himself, presumably playfully, suggested future ages might pass upon him (namely, "that I did no great things, but simply made less account of things that were accounted great") is more apt than he probably would seriously have admitted. In his behalf, however, it must in fairness be said that he did at least see the scientific futility both of "the men of experiment" who "like the ant . . . only collect and use" and of "the reasoners" who "resemble spiders" and "make cobwebs out of their own substance." And he saw quite clearly that true knowledge must spring from "a closer and purer league between these two faculties, the experimental and the rational."

(2) Bacon's failure in analysis cannot be attributed to his

fellow-countryman, John Locke (1632-1704), who gave to the problem of knowing that degree of patient consideration never attained by his predecessor in the tradition of empiricism. Though not free from difficulties, as we shall see later, Locke's very detailed and painstaking analysis of the process of knowing presented in the famous and exceedingly influential *Essay Concerning Human Understanding* (1690) leaves few, if any, of the fundamental issues untouched. Many of the details of this analysis we must leave on one side and concentrate attention exclusively on those points which are specially relevant in the present context. The aim of the *Essay*, Locke informs the reader, is "to inquire into the original, certainty, and extent of human knowledge; together with the grounds and degrees of belief, opinion and assent." The following brief statement will be devoted primarily to Locke's treatment of the first two questions and only secondarily to his discussion of probability; his views about the "extent of human knowledge" will be disposed of in a single paragraph, since they are derivative from the principles developed in his other discussions.

To the question concerning what Locke calls the "original" of knowledge he is very specific in his answer. This question, he thinks, is identical with the question concerning the origin of ideas, since all knowledge is concerned with ideas.¹ Whence, he asks, come those ideas of the human mind which constitute the material of knowledge? And to this question his answer is both negative and positive: (a) There are no innate ideas, but (b) all of our ideas, both actual and possible, arise only from experience. And each side of this answer calls for brief elaboration.

(a) "It is an established opinion amongst men," Locke asserts of earlier generations of thinkers, "that there are in the understanding certain innate principles; some primary notions . . . which the soul receives in its very first being; and brings into the world with it." Such innate principles or ideas, Locke goes on to point out, are supposed to be found both in the field of speculation or logic and in the field of practice or ethics. In logic, for example, such principles as the law of identity ("What-

¹ An idea Locke defines as "whatsoever is the object of the understanding when a man thinks."

ever is, is") and the law of contradiction ("It is impossible for the same thing to be, and not to be") are by some held to be innate. In ethics, also, there are supposedly innate principles or ideas, such as justice or the rule of keeping contracts or the idea of a Supreme Being. None of these principles or ideas, however, nor of any others, Locke maintains, is innate; none of them is an original possession of the human mind. The main considerations Locke advances in support of his denial are psychological and historical: No idea is universally present in the human mind, he contends, as it necessarily would be if it were innate. On the contrary, he insists, no mind, "in its very first being," is possessed of any idea whatsoever; in its original state the mind of man in every instance is, as it were, "white paper, void of all characters, without any ideas."

(b) How comes it, then, to be furnished with ideas? The answer Locke gives to this question is his positive statement, and it is equally definite. "To this," he says, "I answer in one word, from experience; in that all our knowledge is founded, and from that it ultimately derives itself." But the word *experience* is a word of many meanings, and when one uses it one has not thereby necessarily said anything very definite. Locke, however, is quite clear as to what he intends by the word in this context, and he proceeds at once to elaborate his meaning.

On one side, clearly, experience is identical with seeing, hearing, tasting, smelling, feeling—in short, with the activity of the various organs of sense. On this side Locke calls experience "sensation." And sensation, he claims, is one very important source of our ideas. "Our senses, conversant about particular sensible objects, do convey into the mind several distinct perceptions of things, according to those various ways wherein those objects do affect them; and thus we come by those ideas we have of Yellow, White, Heat, Cold, Soft, Hard, Bitter, Sweet, and all those which we call sensible qualities. . . ." Experience as sensation is, in fact, the "great source of most of the ideas we have."

But there is another side to experience besides sensation. On this side experience is identical with the mind's apprehension of its own states and processes, or what later psychologists have called *introspection*. In Locke's description, it is "the percep-

tion of the operations of our own mind within us, as it is employed about the ideas it has got." And here is another "fountain, from which experience furnisheth the understanding with ideas." Such ideas are those of "Perception, Thinking, Doubting, Believing, Reasoning, Knowing, Willing, and all the different actings of our own minds; which we being conscious of and observing in ourselves, do from these receive in our understandings as distinct ideas, as we do from bodies affecting our senses." This fountain of ideas Locke calls "reflection," since "the ideas it affords" are "such only as the mind gets by reflecting on its own operations within itself."

Experience as *sensation* and experience as *reflection*, then, are two sources of ideas. But, we must further note, they are the only sources; there is absolutely no other, according to Locke. "Our observation employed either about external sensible objects, or about the internal operations of our minds, perceived and reflected on by ourselves, is that which supplies our understandings with all the materials of thinking. These two are the fountains of knowledge, from whence all the ideas we have, or can naturally have, do spring." So when Locke says that all our knowledge is grounded in experience, what he explicitly understands by the statement is that all our ideas spring either from sensation (the experience of sensing) or reflection (the experience of introspecting) or from both.

If one asks why the statement that *knowledge* is grounded in experience follows from the proof that *ideas* are so grounded, the answer for Locke is not far to seek. In his opinion it follows, because ideas alone are the material of knowledge. "Since the mind, in all its thoughts and reasonings, hath no other immediate object but its own ideas, which it alone does or can contemplate; it is evident, that our knowledge is only conversant about them." For this reason, therefore, knowledge must be grounded in experience if ideas are; we know only ideas, and apart from them there is no object of knowledge.

(c) Locke's famous definition of knowledge follows directly from the preceding consideration. Since knowledge is conversant only about our ideas, it is necessarily nothing but an insight into relations among ideas; and those relations are either that of agreement and harmony or that of disagreement and repugnancy.

Hence the definition which Locke offers: "Knowledge then seems to me to be nothing but the perception of the connexion and agreement, or disagreement and repugnancy, of any of our ideas. In this alone it consists. Where this perception is, there is knowledge; and where it is not, though we may fancy, guess, or believe, yet we always come short of knowledge." Examples of the two types of perception are "White is not black" (perception of disagreement between the ideas "white" and "black"); "The three angles of a triangle are equal to two right ones" (perception of agreement between the ideas "three angles of a triangle" and "two right angles").

Since perception of the agreement or disagreement of any of our ideas may be either direct and immediate or indirect and mediate, there are two quite distinct types or kinds of knowledge. That in which the perception is direct and immediate Locke calls *intuitive* knowledge; and that in which the perception is indirect and mediate he calls *demonstrative* knowledge. Of the two examples given in the preceding paragraph, the first is said to be intuitive knowledge and the second demonstrative knowledge. For in the first the perception of the disagreement between the two ideas "white" and "black" is supposed to take place without the intervention of any other idea; while in the second the agreement between the two ideas "three angles of a triangle" and "two right angles" is perceived, not directly and immediately, but only through the medium of other ideas interposed between these two.

Intuitive knowledge, Locke maintains, is indubitable, hence is certainly true and carries within itself the guaranty of its validity. It "is irresistible, and like bright sunshine forces itself immediately to be perceived, as soon as ever the mind turns its view that way; and leaves no room for hesitation, doubt or examination, but the mind is presently filled with the clear light of it." It is therefore the clearest and most certain knowledge "that human frailty is capable of"; and he who demands a greater certainty "demands he knows not what, and shows only that he has a mind to be a sceptick, without being able to be so." Such knowledge is entirely impregnable and wholly safe against scepticism.

The certainty that attaches to demonstrative knowledge must

in the end be intuitive, Locke thinks, or demonstration is not solidly grounded. In the process of mediation which constitutes demonstration, the mind "is fain, by the intervention of other ideas (one or more, as it happens) to discover the agreement or disagreement which it searches." This process is called reasoning, and the intervening ideas which reason uses are called proofs. "Now, in every step reason makes in demonstrative knowledge, there is an intuitive knowledge of that agreement or disagreement it seeks with the next intermediate idea, which it uses as a proof; for if it were not so, that would yet need a proof; since without the perception of such agreement or disagreement, there is no knowledge produced." Thus, in demonstrative knowledge intuitive knowledge "is necessary in all the connexions of the intermediate ideas, without which we cannot attain knowledge and certainty." The certainty and truth of demonstrative knowledge, therefore, in the end rests on intuitive knowledge. Hence, the certainty of intuitive knowledge, than which a greater cannot be imagined, is that upon which "depends all the certainty and evidence of all our knowledge."

Besides the two kinds of perception discussed above, Locke admits that there is another "which going beyond bare probability, and yet not reaching perfectly to either of the foregoing degrees of certainty, passes under the name of knowledge." This is the "perception of the mind, employed about the particular existence of finite beings without us." In other words, it is the perception of the physical order of things and events. This sort of perception Locke calls *sensitive* knowledge. Examples of it are: There is a sun in the heavens, Men exist, etc. Any perception of existence exemplifies it.

Strictly speaking, this sort of perception does not properly fall under Locke's definition of knowledge. It is not the perception of the agreement or disagreement of our ideas at all; it is, rather, the perception of the relation between an idea and a physical object supposedly corresponding to it—between, for example, the *sensation of the sun*, or, more accurately, the *seeing of light*, and the thing in the heavens called *the sun*, the astronomer's sun. This difficulty raises a serious question concerning the adequacy of Locke's definition of knowledge, since any definition which is such as to exclude this sort of experience is

rightly to be held suspect. If Locke had steadfastly faced the difficulty he doubtless would have discovered that it arises from the fact that an "idea" is inadequately conceived in his definition of knowledge, being thought of as if it were something too much "in" the mind; and he would have been forced to reformulate his whole theory of knowledge in consequence. We shall have to give the matter independent consideration later on in our discussion, when we come to raise the question concerning knowledge of existence. Meanwhile, we here note that Locke slides over the difficulty without seriously facing it, and admits "sensitive" knowledge despite his inconsistency in so doing.

No sooner has he admitted it, however, than he is confronted by another difficulty in connection with it which he cannot overlook. And that is the problem of its certainty, "whereof," he cannot but recall, "some men think there may be a question made." This problem arises from the fact that our senses so often deceive us. Locke's own answer to the problem is very hesitantly given; and, in the end, he finds himself forced to the conclusion that the certainty in question is largely dependent on feeling and falls far short of the intuitive insight which, as he has already assured us, is the ground of "all the certainty and evidence of all our knowledge." But he is of the opinion that this sense-certainty has a sufficient guarantee. In the first place, we are "invincibly conscious" of the difference between a mere idea (the sun thought of by night, for example) and an idea brought in by the senses (the sun looked on by day). Furthermore, we unquestionably find that our pleasures and pains follow upon contact with objects which we seem to perceive through sensation (as the pain from the fire when touched or the pleasure from the orange when tasted); the certainty of sensitive knowledge is, consequently, "as great as our happiness or misery, beyond which we have no concernment to know or to be." In other words, we seem to be directly conscious of the difference between a mere idea and a "real" idea; and our causal contact with the physical environment serves as a further basis for determining the difference. And all of this, Locke thinks, is equivalent to saying that in the case of sensitive knowledge "we are provided with an evidence; that puts us past doubting." We may therefore conclude that it has a right to be called knowledge and

certainly discloses, not relations among our ideas to be sure, but "a conformity between our ideas and the reality of things."

(d) As to the "extent of our knowledge," Locke thinks that it is very "short and scanty." By its very nature, it cannot extend further than our ideas, since ideas are its material; indeed, it cannot extend so far as we have ideas but only so far as we can perceive their agreement or disagreement. Thus our knowledge is very limited; if only our conceit would allow, we might readily see that our ignorance is much larger in scope. "He that knows anything, knows this in the first place, that he need not seek long for instances of his ignorance." Despite his insistence on the limitation of knowledge, however, Locke is not so pessimistic as to despair of its expansion. On the contrary, he is convinced that it may be indefinitely extended, "if men would sincerely, and with freedom of mind, employ all that industry and labour of thought, in improving the means of discovering truth, which they do for the colouring or support of falsehood, to maintain a system, interest, or party, they are once engaged in."

(e) Besides knowledge, there is another cognitive attitude of mind which Locke calls probability. This he distinguishes from demonstrative knowledge as follows: "As demonstration is the showing the agreement or disagreement of two ideas, by the intervention of one or more proofs, which have a constant, immutable, and visible connexion one with another; so probability is nothing but the appearance of such agreement or disagreement, by the intervention of proofs, whose connexion is not constant and immutable, or at least is not perceived to be so, but is, or appears for the most part to be so, and is enough to induce the mind to judge the proposition to be true or false, rather than the contrary."

While probability is never knowledge and at best is to be called belief, assent, or opinion, nevertheless, Locke holds, there are degrees of probability and not all beliefs or opinions are of equal significance. Some probable statements, he thinks, involve more "likeliness to be true" than others. The criteria by means of which we may distinguish between the more and the less probable, he reduces mainly to two: "the conformity of anything with our own knowledge, observation, and experience"; and "the testimony of others, vouching their observation and experience"—

the credibility of this testimony, of course, being carefully tested. When solidly grounded, probability may on occasion rise to assurance; but it can never be characterized by certainty, which belongs to knowledge alone.

Probability, Locke insists, is much wider in extent than is knowledge. In the twilight of probability lies by far "the greatest part of our concernments." Most of the practical issues of life must be determined on the basis of probability, since there is generally no time to wait for knowledge. "He that will not eat, till he has demonstration that it will nourish him; he that will not stir, till he infallibly knows the business he goes about will succeed; will have little else to do, but sit still and perish." But, despite the admittedly greater flexibility and scope of opinion and faith, Locke never wavers in his fundamental conviction that, in the final reckoning, knowledge, the "certainty of true knowledge," must alone be the criterion in all our "concernments" both theoretical and practical. "Reason," thus does Locke pre-view the basal dogma of the eighteenth century Enlightenment, "must be our last judge and guide in everything."

(f) It is clear from the preceding considerations that, in a sense, Locke is as rationalistic in his theory of knowledge as is Descartes or Spinoza. Like them, he is convinced not only that "reason must be our last judge and guide in everything," but also—and this is a much more important point of agreement—that the ultimate criterion of genuine knowledge is intuitive insight. He differs from the continental thinkers, however, in the emphasis which he places on "experience" as the only source of the materials of knowledge. Here he is at one with Bacon; and the analysis he gives in support of this emphasis goes far toward remedying the theoretical deficiency which, as we saw above, is characteristic of Bacon's more general statements. But this analysis leads Locke into a difficulty, which indeed he did not fail to note, but the full force of which he did fail to appreciate. That difficulty arises, as we have seen, in connection with what he calls "sensitive knowledge," and it lies at the very root of the empirical view of knowledge. So far as Locke's treatment is concerned, it is not clear either that this type of cognitive experience may be called knowledge at all or that a logical criterion is provided whereby its validity can be adequately tested. And with-

out such a criterion the whole structure of Locke's theory, so far at least as knowledge of the physical and social environment is concerned, threatens to fall.

This basal difficulty was much more clearly grasped by Locke's successor in the development of empiricism, namely, David Hume (1711-1776), who in his *Treatise of Human Nature* (1739-1740) dealt at length with the issues arising from it. As a result of his very subtle study, Hume reached the conclusion that Locke's "sensitive knowledge" is, in fact, not properly to be called knowledge at all. It is, rather, only *sentiment*, that is, only opinion or belief based on habit and custom. And from this Hume draws the further disconcerting conclusion that all so-called knowledge of "matters of fact" is logically groundless, which, of course, is equivalent to the contention that every science which pretends to deal with "matters of fact" is only groundless opinion and not strict knowledge. Such a sceptical conclusion seems indeed hard to accept, but on Locke's premisses it seems also difficult to escape; and in working it out Hume vigorously directed attention to those difficulties Locke had passed over too lightly. But the question still remains whether such scepticism necessarily follows from a careful analysis of the nature of knowledge itself. The possibility that Locke's theory of ideas and the conception of sensitive knowledge based on it is mistaken, and may be shown to be so by a more careful examination, is an alternative Hume left standing without serious consideration.

Another thinker, who, by his own confession, was awakened from his "dogmatic slumber" by Hume's attack, explicitly considered this possibility in great detail. This thinker was a German of Scotch ancestry by the name of Immanuel Kant. And the analysis he offered gave to the problem of knowledge a thorough-going re-orientation. Some of his major conclusions we are to survey in the following section.

C. *Criticism: Kant*

The writings of Immanuel Kant (1724-1804) are, by common consent, regarded as marking a turning point in modern philosophy. They are so regarded, primarily because of the theory of knowledge which they defend. To this theory Kant himself

gave the name of *criticism* to distinguish it from preceding theories, all of which he called *dogmatism*. It is expounded primarily in the famous *Kritik der reinen Vernunft* (*Critique of Pure Reason*, first edition 1781 and second edition 1787). Because of the complexities of Kant's own statement I am compelled in the following summary to restate his position largely in my own way. Many of his most fruitful analyses will have to be passed without comment, since they are not amenable to elementary statement. Only his main theses and conclusions can thus be presented; and, of these, only those which seem specially relevant to the purpose of the present general survey will be considered. These may perhaps be reduced to four, which we shall now separately state.

(a) In the first place, Kant begins with the observation that wherever there is knowledge there is always something which is known and which is "given" or "presented" to, not "created" by, the knowing mind. This datum of knowledge Kant generally calls its "matter." It is strictly empirical in its origin, since only experience furnishes it; it comes to us through sensation. This character of it Kant refers to as its *a posteriori* character. Now, since apart from this empirical or *a posteriori* matter there can be no knowledge at all, Kant explicitly agrees with empiricism that, so far at least, knowledge is empirical. "That all our knowledge begins with experience there can be no doubt," Kant unqualifiedly affirms in the very first sentence of the "Introduction" to the *Critique*. And this may be taken as his first thesis.

This thesis is equivalent to the assertion that the object of knowledge is always and everywhere an object such as may be given in sense-experience. And it is quite clear that the statement is very important, if true; for if it is true, then such knowledge as we have in the mathematical sciences as well as in all the other sciences must ultimately be concerned with objects of sense-perception. Whether this is the case is sufficiently dubious to call for definite proof that it is. But Kant offers no proof of it. He simply assumes it to be true, and seems to feel that the problem at issue is satisfactorily resolved by his further discussions.

(b) Continuing his elaboration of the position advanced in the quotation given in the second paragraph above, Kant adds in the

second paragraph of his "Introduction" the following observation: "But though all our knowledge begins with experience, it does not follow that it all arises out of experience. For it may very well be that even our empirical knowledge is made up of what we receive through impressions and of what our own faculty (sensible impressions serving merely as the occasion) supplies from itself." In the first main division of the *Critique*, called "Transcendental Æsthetic," he undertakes to show at some length that this is actually the case, that, in other words, an important part of our knowledge springs from the "faculty of sensibility" (*Sinnlichkeit*) itself.¹ And this may here be taken as his second thesis.

His proof of this thesis runs in outline as follows. That which is given through the faculty of sensibility, namely, the matter of knowledge, is, as given, wholly unrelated; for, as given or presented through sensibility, matter corresponds to sensation, and the relations in which sensations stand cannot themselves correspond to sensations. But, as known, matter stands in relations; it is an ordered whole, a particular thing (like a chair or a house) which is composed of several sense-qualities (such as color, solidity, and the like) related to each other in a common size and shape (configuration) and which itself bears relations (of nearness or remoteness, greater or smaller, before or after) to other things with similar relational structures. This relational character of the object as known Kant calls its "form." Thus every object as known is at once matter and form. Its matter is given in sensation, as we have seen; but its form is not thus empirical in origin, since it is not given with matter through sensibility. Whence, then, is "form" derived? It can be derived, Kant maintains, only from the mental faculty of sensibility itself, which is the remaining alternative source. To designate this mental origin of form, Kant calls it *a priori* as contrasted with the *a posteriori* derivation of matter. In his further analysis, which we cannot follow here in detail, Kant discovers two, and only two, types of sensuous form, namely, space and time. Every object of sensibility (a chair, a house, or any other

¹ By the "faculty of sensibility" Kant means the capacity of our minds to be affected by objects, or the capacity of our minds to receive sensible impressions—what we commonly call sense-perception.

common-sense "thing") is matter which is both spatially and temporally ordered. We may therefore reach the general conclusion that every object of sensibility is partly empirical or *a posteriori* and partly non-empirical or *a priori*; its matter is empirical in its origin, and its form is non-empirical. Thus, while all knowledge begins with experience, it does not all arise from experience; even in the realm of sense-experience, the object as known is partly *a priori*, since it is partly constituted by the "forms of sensibility."

(c) But, Kant further observes, sensibility (*Sinnlichkeit*) is not the only faculty of knowledge. Sensibility is, indeed, basal, since it is the faculty of apprehending the matter apart from which no knowledge whatever is possible. But we must now note that in knowing this matter we not only apprehend it, we also "think" or "interpret" it. For this function of interpretation Kant discovers another faculty of cognition, which he calls *understanding* (*Verstand*). And it is Kant's contention that this faculty, also, contributes *a priori* forms to the object of knowledge. When the matter of experience is interpreted, it is brought under other relations than those of space and time—such other relations, for instance, as unity, substance-accident, cause-effect. But these relations, Kant maintains, like spatial and temporal relations, are not given with the matter of experience and are therefore not empirically derived; on the contrary, they spring from the understanding itself and are *a priori*. They are, in short, *a priori* forms of the understanding, as space and time are *a priori* forms of sensibility. To these *a priori* forms of the understanding Kant gives the name, *categories*, borrowing the term from the Aristotelian logic. And he undertakes to prove that they are precisely twelve in number, just as there are two and only two forms of sensibility. It is commonly agreed among competent students, however, that Kant's list of the categories is inadequately conceived; its number is arbitrary, and the special categories listed are more or less artificially derived. But the important matter is not Kant's table of twelve categories; it is, rather, his main thesis. And that thesis is simply this: When the human mind thinks or interprets the matter of sensible experience, that matter is brought under relations or conceptions (such as, substance or causality), called categories, which are not given

empirically with the matter but are supplied by, and hence must be said to be *a priori* forms of, the faculty of interpretation itself, namely, the understanding. And this is the third of the Kantian theses here to be noted.

(d) Thus far we have spoken of "sensibility" and "understanding" as if they were quite distinct and wholly separate faculties of knowledge with functions that have nothing to do with each other. And in so doing we have been following the lead of Kant himself, who not infrequently speaks in this manner. But this is not the position which Kant maintains in the end, and he leaves us in no doubt that it is not so. Not only does he on occasion explicitly state that sensibility and understanding are interdependent in function, that "by their union only can knowledge be produced." He also devotes the central analysis of the *Critique of Pure Reason* to the task of establishing the thesis that the categories of the understanding are meaningless except as they refer to the objects of sensibility, in the structure of which they are logically foundational. And this, for our present summary of his view, may be called his fourth thesis.

Kant's proof of this thesis is so complicated that even a pretense at a summary statement of it here is impossible. But the significance of the thesis is fairly readily grasped, and it must not be overlooked by anyone who is seriously concerned to comprehend the full scope of Kant's theory of knowledge. What is maintained is that the *a priori* forms of the understanding, the basal conceptions of human thought, are logically indispensable factors in every object of human knowledge—in the objects of common sense, the ordinary "things" of sensible experience, as well as in those more recondite objects, those elaborate and complicated constructions, which constitute the content of our so-called scientific knowledge. In other words, Kant intends to affirm that the categories of human understanding are the logical condition of all possible cognitive experience, that all knowledge, common-sense and scientific alike, is logically grounded in them. One might therefore say, as in fact Kant does say, that, in so far as nature is taken to be identical with what we actually know or can possibly know about our spatio-temporal environment, the understanding makes nature; for, as thus understood, nature is

partially and significantly constituted by what the understanding alone supplies.¹

(e) So much, then, for the four main theses of the "critical" theory of knowledge. In concluding our survey of the theory, we now turn to some of the more important consequences following more or less directly from these theses.

The first of these consequences is that all of our conceptual constructions or ideas are entirely without meaning except in so far as they have a reference to the "matter" of experience. In other words, all of our thinking, if it is to be meaningful, must concern itself alone with "objects of possible experience." Apart from this empirical reference, thinking is "a mere play" of the understanding with abstract conceptions or empty ideas and can lay no claim whatever to "objective validity." This is the case even in the most abstract of the sciences, namely, mathematics: "Although such principles as 'space has three dimensions' or 'between two points there can be only one straight line' . . . may be produced in the mind *a priori*,² they would have no meaning, if we were not able at all times to show their meaning as applied to phenomena (physical objects). It is for this reason that an abstract concept is required to be made *sensuous*, that is, that its corresponding object is required to be shown in intuition,³

¹ But, Kant is careful to remind us, it is not thus wholly constituted, since in every object of knowledge there is an *a posteriori* constituent, something given through sensibility, the matter of experience which is correlated with sensation; and this the understanding does not make or supply. So, while Kant does insist that the understanding makes nature in the sense above described, he equally insists that the understanding does not "create" nature. The crucial point, of course, is that every object of knowledge is held by Kant to be both empirical and non-empirical in its structure.

² The term, *a priori*, is here used by Kant with a different connotation from that which belongs to it in our discussion thus far. He here uses it to refer, not to a "form" of the faculty of knowing, but to that which can be thought with strict universality and necessity (that is, as obviously true and admitting no exceptions). Kant persistently uses the term in these two meanings, though as his discussion advances the latter meaning is more commonly employed.

³ *Intuition* is a term of which Kant makes considerable use, but he is by no means consistent in his usage. Generally, he uses it to refer either to the direct apprehension of objects through sensibility or to the objects (intuitions) thus apprehended. In the quotation above, clearly, the first reference is intended.

because, without this, the concept (as people say) is without sense, that is, without meaning."¹ And the same holds in principle throughout the realm of our cognitive experience. "That this is the case with all categories and all principles drawn from them, becomes evident from the fact that we could not define any of them . . . without at once having recourse to the conditions of sensibility . . . it being impossible, if we take away these conditions, to assign to them any meaning, that is, any relation to an object, or to make it intelligible to ourselves by an example what kind of thing could be intended by such concepts. . . ." Thus, in short, the very meaning of the categories of the understanding necessarily involves a reference to the objects of sensibility, and therefore all knowledge is in the end grounded in the matter of experience.

A second conclusion concerns the cognitive status of things as they really are, or, as Kant usually prefers to name them, things-in-themselves (*Dinge an sich*). And that conclusion is that they cannot possibly be known by minds like ours. This follows at once from the consideration that every object of knowledge is, partially at least, constituted by the faculty of knowing. For if this be the case, then what is known can never be objects in the sense in which objects are understood to be entities existing apart from, independent of, untouched by the constructions of the human mind. In other words, the "object itself" is not, and can never be, an "object of knowledge," because the structure of the latter involves the *a priori* forms of the mind which are wholly foreign to the structure of the former. The technical term which Kant uses to designate the object itself is *noumenon* (plural form, *noumena*), and he refers to the object of experience as a *phenomenon* (plural form, *phenomena*). Translated into this new terminology, the conclusion before us is that we have knowledge only of phenomena, never of noumena. In insisting on this conclusion, Kant does not intend to deny the existence of noumena; on the contrary, he not only admits that they may exist, but, in the later stages of his analysis at any rate, he even urges that we must assume they do in fact exist and that such

¹ The above quotation and the one following in this paragraph are taken from the third chapter of the division of the *Critique* entitled "Transcendental Analytic" (*Selections*, ed. by T. M. Greene, pp. 148, 149).

an assumption is no "arbitrary invention" on our part. What he does intend to maintain is: (a) that we can have positive knowledge only of phenomena, and (b) that the assumption of the existence of noumena, even though that assumption arise necessarily out of knowledge, must not be supposed to be equivalent to the affirmation that we know (either actually or possibly) "anything positive beyond the field of sensibility." Or, otherwise expressed, his position is (a) we have positive knowledge only of things as they appear to us in sensible experience, and, consequently, (b) we can never attain positive knowledge of things as they really are in themselves apart from our experience even though we have logical justification for assuming that there are such things. Our cognitive experience, in its positive pronouncements, is limited to phenomena only; noumena or things-in-themselves must ever remain for human knowledge at its best merely "problematic" and hypothetical. In short, Kant admits no positive knowledge of reality.¹

(f) To the question concerning the criterion by means of which we distinguish between knowledge and erroneous opinions or beliefs, Kant gives no very explicit answer. But he does draw certain general conclusions that have an important bearing on the question, and in the end he at least implicitly outlines an answer. We may end our brief survey of his theory of knowledge by looking at his conclusions relevant to this perplexing problem.

And, first of all, it is necessary to note his important distinction between what he regards as two radically different sorts of judgment, namely, *analytic* and *synthetic* judgments. This distinction Kant states in the Introduction to the *Critique of Pure Reason* as follows: "In all judgments in which the relation of a subject to the predicate is thought (I take into consideration affirmative judgments only, the subsequent application to nega-

¹ This scepticism concerning reality Kant defends only with reference to knowledge, cognitive experience. Something very positive about the nature of reality may, he thinks, be affirmed on the basis of moral experience. This experience and the law in which it is grounded (the moral law or "Categorical Imperative") furnish, in his opinion, ample evidence for significant insight into the structure of things-in-themselves, the real world. This position Kant defends at length in his second *Critique*, namely, the *Critique of Practical Reason* (1788).

tive judgments being easily made), this relation is possible in two different ways. Either the predicate B belongs to the subject A, as something which is (covertly) contained in this concept A; or B lies outside the concept A, although it does indeed stand in connection with it. In the one case I entitle the judgment analytic, in the other synthetic." Kant then proceeds to illustrate the distinction. "All bodies are extended" he gives as an analytic judgment, because (as he supposes) the concept of extension is logically involved in that of body and may be derived from it by mere analysis; in other words, the very notion of "body" involves extension in space as one of its integral constituents, to think "body" is to think of something extended. But "All bodies are heavy" is different. It, Kant says, is a synthetic judgment, because "the predicate is quite different from anything that I think in the mere concept of body in general"; in other words, heaviness is not an essential constituent of the notion "body" and one must derive it as a characteristic of body in some other way than by mere analysis of the general notion. In the analytic judgment, then, the concept of the predicate is "contained in" the concept of the subject; whereas in the synthetic judgment the concept of the predicate involves something which is not thus contained in, but adds a new character to, the concept of the subject.

It is doubtful whether this distinction, as defined by Kant, can be allowed to stand. Much can be said, as Hegel later urged, to support the view that all significant judgments are synthetic, and that the only strictly analytic judgment in Kant's sense is the meaningless tautology, "A is A." But the distinction is important for Kant's own treatment of the problem of truth, which is here our immediate concern. And Kant himself never questions it.

Holding on to the distinction, then, Kant says in effect that we are compelled to differentiate between two different criteria of true judgments, the one being adequate for analytic judgments but only negatively valid for synthetic judgments and needing here supplementation by the other. These criteria we may call *contradiction* and *coherence*. Their application may to advantage be separately considered.

So far as analytic judgments are concerned, Kant maintains,

the principle of contradiction is wholly adequate. No analytic judgment which is contradictory can be true; and, on the other side, every analytic judgment which does not involve contradiction must necessarily be true. Thus, to take our example, "body is extended" is an analytic judgment which does not involve any contradiction and is, therefore, necessarily true; "body is not extended" does involve contradiction and consequently is necessarily false. And the same criterion applies throughout the realm of analytic judgments. "The *principle of contradiction* must therefore be recognised as being the universal and completely sufficient principle of all analytical knowledge." Of synthetic judgments, however, the principle of contradiction holds only negatively. It is the indispensable condition of the truth of synthetic judgments, since no judgment (synthetic or analytic) which involves contradiction can possibly be true. But this principle in itself is not adequate to determine whether a given synthetic judgment (for example, "All bodies are heavy") is in fact true. If the synthetic judgment involves contradiction, it cannot be true; but if it does not involve contradiction, it may nevertheless be false. Such is Kant's contention. And he therefore asserts, in general, that the principle of contradiction is a "universal" criterion of truth, holding negatively of analytic and synthetic judgments alike, but that it has positive significance only in the case of analytic judgments and is therefore not a "sufficient" criterion. As an adequate or sufficient test of synthetic judgments some other criterion is needed in addition to the principle of contradiction.

What, then, is this additional criterion called for in the case of synthetic judgments? In the case of *empirical* synthetic judgments, such as "All bodies are heavy," Kant thinks that the criterion is to be found in the empirical observation that the two concepts functioning as subject and predicate in each judgment (in the example given, the concepts "body" and "weight") belong together as aspects of one total situation; that the affirmation of the relation between the two concepts is true, because experience shows that they do in fact belong to each other in the manner affirmed. There is, of course, a basal difficulty in Kant's position here, and that difficulty arises from the vagueness of the term *experience*. It sometimes happens that "experience" shows

us what is not so, that, for instance, the earth is at rest and is central in the astronomical universe. And if one objects that it is experience taken in too narrow scope which teaches us this and that in its broader scope experience itself will correct the error, the obvious reply is a question: What is the ground of the distinction between the "narrow" and "broad" aspects of experience? And the answer to this question is not obvious, as a little reflection on it will disclose. But Kant slips over the question without directly facing it and seems satisfied that the problem of the truth of empirical synthetic judgments presents no particular difficulty.

But there is another sort of synthetic judgments, exemplified in such judgments as "Every event must necessarily have a cause" or "Between two given points in space only one straight line can possibly be drawn." Kant calls these *a priori* synthetic judgments. In the case of such judgments, actual experience seems inapplicable as the criterion; there is no actual experience in terms of which their validity can be tested, because we can have no actual experience sufficiently comprehensive. We cannot experience every event as standing in a causal nexus, for example, nor every two points in space as having between them only one straight line. Kant, of course, recognizes this and appeals here to the "possibility of experience" as the criterion. Such judgments are true, he seems to say, if it can be shown that without them experience of the objects in question would be impossible; the possibility of experience is our only test of their validity. "The highest principle of all synthetic judgments is . . . this: every object stands under the necessary conditions of synthetic unity of the manifold of intuition in a possible experience." Here, once again, Kant's position presents a difficulty. The phrase "possible experience" is quite obscure and needs clarification; and its obscurity arises from the vagueness of the term *experience* already noted. And, once more, Kant fails to give the difficulty the serious consideration it demands. Despite this, however, his general conclusion with reference to the criterion of the truth of synthetic judgments is tolerably clear. And that conclusion may perhaps be stated in the following way: A true synthetic judgment is one, the assumption of which serves to bring into a harmonious and non-contradictory

whole or system the relevant objects of sensibility ("the manifold of intuition") and, so, to render possible a systematic experience (rational acceptance?) of those objects as thus interpreted. In short, the criterion of the truth of a synthetic judgment is its systematic linkage with other judgments, the entire system being in the end empirically grounded.

This theory of the criterion of truth is essentially that which is commonly called the *coherence* theory. Kant develops it only incidentally and, therefore, does not work it out in a very clear or thorough manner. It receives detailed exposition at the hands of Hegel, however, as we shall see in the next division of our study.

(g) In the preface to the second edition of the *Critique of Pure Reason* Kant contrasted his own "critical" theory of knowledge with those of his predecessors by saying that, while it had hitherto been generally assumed "that all our knowledge must conform to objects," his own contention is "that the objects must conform to our mode of cognition." This reversal of view, he thought, amounted to a revolution in philosophy comparable to that wrought by Copernicus in astronomy: "We have here the same case as with the first thought of Copernicus, who not being able to get on in the explanation of the movements of the heavenly bodies, as long as he assumed that all the stars turned round the spectator, tried, whether he would not succeed better, by assuming the spectator to be turning round, and the stars to be at rest." It is, indeed, questionable whether Kant's analogy is quite apt when applied to his own work in the field of epistemology; but his meaning is clear. And there can presumably be no doubt that his statement of the basal emphasis of his "Copernican revolution" expresses rather neatly the fundamental thesis of the "critical" theory of knowledge.

D. *Dialectic*: Hegel

Georg Wilhelm Friedrich Hegel (1770-1831) builds his philosophical system, commonly spoken of as absolute idealism, by means of a method which he calls *dialectic* and which in important respects is different from those we have thus far considered. As he himself recognizes and explicitly insists, his conception of

method is in principle very old, certainly as old as Socrates and Plato. But he makes it peculiarly his own by subjecting it to detailed exposition and consciously utilizing it in his philosophical construction ; and for this reason it may justly be designated as the Hegelian method. The books in which he presents his analysis are chiefly two: his remarkable "voyage of discovery" entitled *Phänomenologie des Geistes* (*Phenomenology of Mind*, 1807), and the *Wissenschaft der Logik* (*Science of Logic*, 1812-16—a work of two volumes commonly referred to as the *Larger Logic* to distinguish it from the one-volume *Smaller Logic*, which reproduces in summary fashion, though with considerable modification in detail, the principles of the larger work and which appeared as the first of the three volumes constituting the *Encyclopædia of the Philosophical Sciences*, 1817).

Hegel insists that both conscious activity and abstract speculation, both living and thinking, are essentially dialectical. The *Phenomenology* undertakes to exhibit the essentially dialectical character of concrete conscious attitudes expressed in life, while the task of the *Logic* is to show the dialectical character of the more reflective life. It is impossible here to follow through the details of either analysis ; all that can be done is to give some indication of the general drift of each. Having done this, we shall in concluding the survey present a summary of the results which will serve to stress the main characteristics of dialectic as Hegel conceives it.

(a) The subject-matter with which the *Phenomenology* deals are the sundry conscious attitudes (phrases or *Gestalten* of consciousness) which human beings assume towards their environment, both physical and social, while engaged in the business of living within it. Examples of such attitudes are: the feeling of certainty that objects directly experienced through the senses are there and are there as they are experienced (compare Locke's criterion of what he calls "sensitive knowledge"); the feeling of certainty of the existence of the self (compare Descartes's "I think, hence I am"); the attitude of the master to the servant, or of the servant to the master ; the attitude of contrition over a mis-spent life, what the religious call sorrow for sin ; the attitude of reverence for the moral law, or the sense of moral obligation ; the attitude of reverence for God, the basis of all religion ;

and the like. Such attitudes the *Phenomenology* undertakes to subject to critical analysis, and, by so doing, to exhibit their essentially dialectical nature.

In the very first proposition of the outline of the *Phenomenology* which he prepared for the guidance of his own students, Hegel states the basal thesis upon which the whole analysis of the book rests and the truth of which, he thinks, the entire analysis exemplifies. That thesis is there given this formulation: "Our ordinary knowing has before itself only the object which it knows. . . . But the whole which is extant in the act of knowing is not the object alone, but also the ego that knows, and the relation of the ego and the object to each other, *i.e.*, consciousness." The point of emphasis here is the *complexity* of cognitive experience and the constituents of which the complex whole is made up. Cognitive experience is not a simple and indivisible mental state, atomic in structure; on the contrary, it is two terms standing in a unique relation to each other. The two terms are the subject and the object; and the unique relation is that indicated by the phrase "conscious of" when it is said that the subject is conscious of the object. Thus cognitive experience, when analytically considered, is disclosed to be a complex whole roughly describable by the hyphenated expression, subject-conscious-of-object. And this complexity of cognition is for Hegel the fundamental characteristic of it.

But the complexity of cognitive experience, Hegel further contends, is greater than is explicitly brought out in the preceding paragraph. Not only is cognition a complex whole of two terms in relation to each other as indicated, but each of these terms (subject and object) is more complex than is explicitly manifest in the momentary experience. In other words, the subject which is "conscious of" the object is in fact much more than is explicitly indicated by that relation; and the same in principle holds of the object. The subject as *that particular subject which is conscious in the given occasion* is not the whole of the subject which functions in the consciousness of the moment; and, likewise, the object as *that object of which the particular subject is conscious in the given occasion* is not the whole of the object. As thus taken, each is incompletely and fragmentarily taken; there is more to each than in the given occasion is manifest. For instance, the

subject which is conscious of a color in sense-experience is not all of the subject, since the same subject may also be conscious of an odor or a taste ; nor is the color, of which the subject is thus conscious, all of the object, since the same object may also be pungent or bitter. The complexity of cognitive experience, then, involves its fragmentariness ; any given "phase" or *Gestalt* of consciousness is by its very structure incomplete.¹

This characteristic of the various phases of consciousness Hegel undertakes to show by detailed analyses of the types (drawn from common sense, science, literature, morality, law, religion) with which the *Phenomenology* deals. The phase or attitude of cognition with which the book begins is a relatively simple example, and for purpose of illustration we may note the chief points in the analysis of it. This phase, called by Hegel "sense-certainty," is the simplest, because most primitive, form of cognitive consciousness, namely, the feeling of certainty that the object of direct sense-consciousness is precisely as it is experienced to be. If, now, you seriously try to accept this feeling as adequate in respect of both the object and the subject, you will find it logically impossible to do so. The object, to begin with it, is in this experience merely that which is immediately present at a specific moment of time ; in Hegel's terminology, it is a mere "this" and a mere "now" or a "this-now." But it cannot, without arbitrariness, be taken as just "this-now" and nothing more. It is, to be sure, a "this" (let us say, a specific color) and it is also a "now" (the color of the moment). But it is, beyond that and equally, another "this" (a color of *something* with many other characteristics), and also another "now" (a color lasting through a period of time, and therefore having a past and in some sense presumably a future). In short, the object of direct sense-experience is much more complex in its structure than the "this-now" which is immediately presented in that experience, and consequently the "certainty" of that experience is partly at least erroneous. Again, on the side of the subject (or "ego" as Hegel prefers to say) in such a phase of consciousness, the same holds in principle. The subject, too, is a "this-now," since it is a particular experience at a specific moment of time. But, like

¹ There is, indeed, one exception which Hegel admits, but only one. This is the phase which he names *das absolute Wissen* ("absolute knowledge").

the object of which it is conscious, it is also other "thises" and other "nows"; it is more than *this consciousness* since it is other consciousness as well, and it is more than "now" since it has a past and presumably a future. The full natures or essences of both subject and object, then, are not completely manifest in the specific conscious attitude of the moment. This phase of consciousness is consequently partial and fragmentary; *its* subject is not the whole subject involved, nor is *its* object the entire object. And what is true of "sense-certainty" Hegel argues is true of all phases or types of conscious experience, with the single exception noted at the end of the preceding paragraph.

But it is Hegel's further contention that, when by analysis you have thus disclosed the fragmentary character of any special instance of consciousness, you have not thereby destroyed it utterly. Through such disclosure you have merely resolved (Hegel would say, "transmuted") it into another type, which is less incomplete and fragmentary; and you have thereby revealed more of its own essential nature. For both its subject and its object have thereby been further described and their fuller characteristics elaborated. If your analysis is carried through to its logical conclusion, you will not stop until an ultimate phase of consciousness is reached which defies further analytical expansion because within it is disclosed the full nature of both subject and object in their relationship with each other. Such an analysis Hegel tries to work out in the *Phenomenology*; and the ultimate attitude of consciousness he arrives at, as we have already noted, is named by him "absolute knowledge." In it alone of all the phases of consciousness examined, he maintains, subject and object are both explicitly revealed as what they really are. The details of Hegel's attempted (and, in the writer's opinion, unsuccessfully attempted) justification of all of this cannot be here summarized; but, fortunately, such a summary is not necessary for the present purpose. It is sufficient merely to note that his analysis of the series of phases of consciousness is conceived as a progressive expansion of the inter-related subject- and object-aspects of conscious experience, and that it logically stops only when both aspects are disclosed in their complete natures.

From such considerations as those above, Hegel draws his

famous (some would say infamous) doctrine of degrees of truth. Any given phase of consciousness, he holds, is true in the sense that it in some measure embodies the characteristics of subject and object in relation. But, in so far as it embodies them only partially, he would insist that it is only partially true. The succeeding phase into which analysis resolves it is a more nearly adequate embodiment of both subject and object and is, therefore, more nearly true. For instance, the present moment's experience of a bare color ("sense-certainty") is true, since both subject and object are in fact what such an experience reveals they are; but the type of consciousness (consciousness of a thing with qualities, called by Hegel "sense-perception") into which analysis resolves sense certainty expresses a higher degree of truth, since the conception of "the thing and its properties" characteristic of this latter consciousness is a more nearly adequate embodiment of the complete nature of the constituents of consciousness (namely, subject and object) than is the conception of the bare quality, the "this-now," characteristic of the former. Thus, the series of phases of consciousness traced in the *Phenomenology* Hegel conceives as a series in which varying degrees of truth are manifest: each phase is true, but only partly so, and its logical successor in the series is in a fuller measure true because it more nearly adequately embodies the genuine natures of both subject and object. The final phase in the series, namely, "absolute knowledge," he holds to be absolutely true, since in it the subject-object relationship receives its adequate realization.

The criterion of truth which Hegel here applies is that of *systematic coherence*. The degree of truth characteristic of any special phase of consciousness is measured in terms of the degree of organization it introduces into experience. The succeeding phase of consciousness into which analysis resolves it is truer, because the insight it brings is more comprehensive and consequently introduces into experience a greater degree of organization. In short, "truth is the whole" as Hegel expresses it in his much quoted statement in the Preface to the *Phenomenology*. And this may be said to be an explicit formulation of the coherence theory of truth, which, as we have seen, was implicitly accepted by Kant. According to this theory, the criterion of a true propo-

sition is not its intuitive character, but the measure of organization and harmony it introduces into reflective experience.

Another point which emerges from Hegel's analysis in the *Phenomenology*, and which he thinks is amply justified by that analysis, is that the object of knowledge is the object as it really is, and not merely an idea or representative of it. The distinction drawn by Kant between *phenomena* and *noumena* is thus in principle denied by Hegel's analysis. Hegel does, indeed, distinguish between "appearance" and "reality"; but he means by this distinction only that between the real object fragmentarily experienced and the real object adequately experienced. Nowhere is he willing to admit that the subject in consciousness is sundered from real objects and shut up, so to say, within the four corners of its merely subjective "ideas" (as Locke and Descartes at times suggest), or that the independently existing object is logically beyond its apprehension (as Kant contends). On the contrary, reflective consciousness is for Hegel an indiscerptible relationship of subject-object, and the object is always the independently existing object—what, in short, we ordinarily intend when we speak of the "real" object.

(b) In the *Logic*, as has already been indicated, Hegel is concerned with a subject-matter somewhat different from that with which he deals in the *Phenomenology*. Instead of phases or concrete attitudes of reflective conscious experience, the matter under survey in the *Logic* is abstract thought. But the main outcome of this survey, so far at least as the dialectical character of knowledge is concerned, is essentially that of the *Phenomenology*.

The discussion of the *Logic* begins with that category of thought which Hegel takes to be the one with which all thinking must begin, namely, the category of Being. This is the logical beginning of all thinking, Hegel maintains, because it is the general conception involved in the most indubitable proposition we can make. That proposition is: Something exists, or has being. This is a proposition which is certain and impregnable even to the most thorough-going scepticism.

But (and herewith the dialectical advance of critical thought begins) the assertion that something is or has being is indisputable only in the sense in which the assertion is taken as equivalent to the affirmation of bare existence left undefined.

For if the assertion is equivalent to the assertion that something exists *with qualities*, that, for instance, something exists and is red or hot or cold, then the question is at once raised whether such is the case and on what grounds it can be said to be so. Mere Being without qualities, then, is alone immediately certain. In such certainty, however, critical thought cannot possibly come to rest ; it is the beginning of thought, the indubitable starting-point, but not the final resting-place. For when we try to *think* mere quality-less Being, when we ask for the meaning of the mere assertion that something barely *is*, we find ourselves thwarted ; under such limitations our thought is without positive meaning, without content or object, and we discover that we are trying to think nothing at all. If held strictly to what is explicitly affirmed, the affirmation that something barely is asserts nothing specific about the something which is said to exist. The logical correlative of the category of bare Being, thus, is precisely Nothing. Once more, however, we cannot *think* nothing ; serious thought necessarily demands an object or content. Nevertheless we must employ the category of Being, since it is indubitably certain that something exists or has being. How, then, can we think Being and at the same time escape the blankness of the conception of Nothing ? Only, Hegel replies, by passing to the concrete conception which harmonizes, or, as he prefers to say, synthesizes the two conceptions. And that concrete conception he names Becoming. Thus, Becoming is the first "determinate" conception involved in the affirmation that something is, because it is the conception through which thinking escapes the blank notion of Nothing when it tries to grasp the meaning of that affirmation.

In Hegel's peculiar terminology, of the three conceptions or categories discussed in the preceding paragraph the category of Becoming is the "synthesis" of the categories of Being and Nothing, which are "thesis" and "antithesis" respectively. Being is the "thesis" because it is the category involved in the proposition taken as certain ; Nothing is the "antithesis" of Being because it is the category into which thought finds itself driven in its effort to apprehend the meaning of the original proposition when taken as exactly equivalent to what it explicitly affirms ; and, finally, Becoming is the "synthesis" of both because in it we find

the conception at which thought arrives through its endeavor to apprehend the certainty of the "thesis" and at the same time to escape the blankness of the "antithesis." The relationship of thesis, antithesis, and synthesis, taken as a logical unit, is commonly called a "triad" by the commentators.

This first triad of the *Logic* is conceived by Hegel as furnishing the starting-point of another triad. Becoming, the synthesis of the first triad, through analysis turns out to be a thesis for another triad; on analysis, it gives rise to its opposite (antithesis) and another conception which combines the two (synthesis) is demanded. Now this continues, Hegel undertakes to show in detail, until a category is attained which is a synthesis void of all contradiction. Such a category Hegel discovers in what he here names the Absolute Idea; and the details of his analyses in the *Logic* are designed to show that this category is the final synthesis for critical thought. Thus the course of the *Logic* runs from Being to the Absolute Idea, and the way lies through a series of numerous triads supposedly expressing all modes of abstract thought.

In this series, it is to be noted in the first place, Hegel thinks we have a logically necessary series from beginning to end. The beginning is logically necessary, since it is not open to sceptical attack; it is indubitably certain. The end is necessary, because it is the logical outcome of the triadic development which starts from the indubitable beginning; the first triad is resolved into the others and, finally, into the last by a rigorous analysis of its own logical structure. In other words, the meaning of the first triad, grounded in the indubitable proposition that something exists, gradually expands through the series and comes to full flower in the final synthesis. The first thesis, Something is or exists, implicitly means the final synthesis, What exists is the Absolute Idea; and in Hegel's view, at any rate, the analysis of his *Logic* does but make explicit at the end what was thus logically implicit from the beginning.

Once more, Hegel thinks that the series of categories traced in his *Logic* exemplifies varying "degrees" of truth. The starting-point is true, indubitably true, but only partially so. The synthesis into which it is resolved is truer or is a "higher" truth, because it is a more determinate conception—that is, a concep-

tion which is more systematic and involves fewer logically possible contradictions or antitheses. And so on throughout the series until the final synthesis is attained, which is the "highest" truth of all. It is, indeed, absolutely true, since it is a self-contained logical whole which cannot be rationally contradicted (has no antithesis) and, therefore, demands no synthesis beyond itself. Every category, then, expresses some degree of truth, but none of them except the Absolute Idea is completely true; for the Absolute Idea alone is a logical system whose contradictory must be mere nonsense and inanity.

The criterion of truth which Hegel is here applying is, once again, the criterion of *systematic coherence*. That is true which can successfully withstand contradiction, or, more positively expressed, which manifests rational coherence and systematic structure. A proposition is true in so far as it exemplifies rational system; it is false in so far as it can be rationally contradicted. Its "degree" of truth is measured by the stability of its logical structure. The absolutely true is entirely stable, since it is a coherent system which omits from its scope nothing logically relevant to it and therefore cannot be logically contradicted.

Finally, Hegel proceeds in the *Logic* on the assumption that the categories of thought disclose the real nature of things. When he traces the series of categories in their logical interrelations, he supposes that he is also and *ipso facto* tracing the interrelations of the constituents of the environment. This assumption, indeed, he does not stop to justify in the *Logic*, though it is more or less explicitly present throughout. The assumption is quite definitely affirmed in the introductory remarks of the *Logic*. There it is asserted that thought must be said to have genuine objectivity and that this means (in opposition to the position defended by Kant) our thought, "far from being merely ours, must at the same time be the real essence of things, and of whatever is an object to us." And upon this assumption the entire analysis of the *Logic* is founded. The justification of the assumption, Hegel supposes, is amply furnished by the *Phenomenology*, which in this respect at least may be said to be presupposed by the *Logic*.

(c) Presumably enough has been said to show that in principle the analysis of the *Logic* and the view defended in it closely parallel those of the *Phenomenology*. And this is sufficient for

our present purpose. It remains to state briefly what is to be understood by dialectic as expounded in these two works.

A study of the *Phenomenology* discloses that Hegel's conception of consciousness as dialectical includes the following items: (i) consciousness is basically a subject-object relationship; (ii) every concrete example (phase) of the relationship is characterized by a fragmentariness in respect of both subject and object, since each of these is more than it is explicitly disclosed to be in the particular phase of consciousness under observation; (iii) the fragmentariness of any given phase is logically such as to demand its completion, since its complete meaning is not revealed in its own structure alone; (iv) the completion of this demand proceeds through the progressive resolution of one phase of consciousness into another, which is a more nearly adequate manifestation of the essential natures of both subject and object; (v) this progressive fulfilment of the demand, therefore, exemplifies various degrees of truth; (vi) the criterion by which truth is determined throughout is the logical whole or system implicitly present in the various phases of conscious experience; and, finally, (vii) this logical whole is what alone may be called the real, since it alone is the rational and the final truth of the subject-object relationship. So much may be drawn from the analysis of the *Phenomenology*. That of the *Logic* emphasizes the following points: (i) each category of thought is incomplete in its meaning, and incomplete in such a fashion as to demand its own completion; (ii) the satisfaction of this demand is progressively accomplished in a series of logically interconnected categories in which the later more nearly express the meaning implicit in the earlier categories; (iii) the series, thus, constitutes a necessary order grounded in a logical system; (iv) each category in the series is in its own proper sphere true, but the later are more true than the earlier; (v) the criterion of truth throughout is the logical whole or system in which the categories are embedded, the categories which express the system incompletely being only partially or relatively true and the category which expresses it completely being absolutely true; (vi) this logical system must be equated with reality, since the categories expressing it are "not merely ours" but disclose "the real essence of things."

The conceptions of the dialectical character of reflective expe-

rience resulting from these two books, are thus, essentially one. Telescoped and translated into more familiar terms, they may perhaps be made clearer. Reflective experience, whether as concrete consciousness of objects or as abstract thinking, is always and everywhere experience of entities independent of us human beings who happen to be conscious of them or to think about them. When taken in its different forms, this experience is in its meanings incomplete and is characterized by a logical drive towards its own completion. It is incomplete because what it means explicitly is only a partial expression of its full meaning. It is logically driven to seek its completion, because this its fuller meaning is but the fuller manifestation of its own subject-object structure. In seeking its completion, then, reflective experience is simply discovering or disclosing the fuller nature of its constituent elements. And from this it follows that the criterion controlling throughout the process is the systematic whole or logical system of which the particular experience under scrutiny is a partial, but only a partial, manifestation. Viewed specifically as functioning within the given cognitive occasion, this system is what is actually known relevant to the occasion. But the total system, which is the ultimate criterion, is more than such a body of historical knowledge; it is also what is knowable relevant to what is actually known. If we say, then, that the criterion of truth of a given proposition is the systematic coherence of that proposition with its relevant body of knowledge, we have, in Hegel's opinion, only partially stated the case; we must add, he would urge, the further consideration that what is relevantly knowable, fragmentarily manifest in what is actually known, is also a constituent element within the logical "whole" which in its totality is the ultimate criterion.

The entire matter may, perhaps, be put more briefly. For Hegel, historical reflective experience is driven by its own logical incompleteness towards its completion; in other words, it is a search for its own meaning. In its fullness, this meaning is partially disclosed and partially hidden in the experience in question; as disclosed it is what is actually known relevant to the experience, as hidden it is what is relevantly knowable. The test of true insight as opposed to erroneous belief is, on the one side, the meaning patently expressed by the knowledge had on

the occasion and, on the other side, the system of hidden meaning yet to be disclosed. Such, in short statement, seem to be the essentials of the Hegelian conception of knowing as a dialectical process.

E. *Summary of divergencies*

As is presumably clear from the preceding survey, the several thinkers discussed, while agreeing on many points, differ rather sharply on others. These differences are important, touching as they do some of the fundamental issues in a theory of knowledge. It may therefore be well, in conclusion of this historical note, to bring them to a focus.

One of the points on which important differences turn is indicated by the term *experience*. For Locke, experience is either sensation or reflection, that is, experience is identified with *immediate* or *direct* experience; and as thus conceived it is said to be the exclusive source of all the material of our knowledge. For Locke, in other words, experience is direct observation, through the senses or through introspection, and furnishes all the objects of knowledge. At the beginning of his analysis in the *Critique of Pure Reason*, Kant accepts in principle Locke's view of experience, though he places the emphasis exclusively on what Locke calls *sensation*.¹ Even so, however, he uses the term sometimes to indicate the act of sensing (named by him the activity of *sensibility*) and, at other times, to indicate the object (or, as he commonly says, *matter*) sensed—a confusion from which Locke, on his side, is not entirely free. Furthermore, as Kant progresses in his analysis, experience is given an organizational character, which is largely neglected by Locke but which becomes more and more important for Kant; experience, he urges, is a "compound" of the raw material supplied through sensation and the relations supplied by "our own faculty of knowledge"—the relations of space and time (the *a priori* forms of sensibility) and of the categories (the *a priori* forms of the understanding).

¹ Of course, in his other writings, especially in the *Critique of Practical Reason* and the *Critique of Judgment*, Kant insists that there are other types of experience, namely, moral and esthetic. But these, he thinks, are entirely irrelevant to knowledge; consequently, he takes no account of them in the analysis of the *Critique of Pure Reason*.

Hegel accepts this organizational character of experience as its essential character, denying in principle that any special act, whether of sensation or of reflection, can be identified with experience. He would, indeed, agree with Locke that experience includes such acts; but he would insist that it includes much more, that it is essentially systemic (synthetic) in nature, and that any analysis which fails to note and emphasize this character is inadequate. In other words, reflective experience is, for Hegel, never merely direct and immediate, as it generally is for Locke and Kant; on the contrary, it is everywhere mediated or inferential.

Again, interesting differences of view emerge in connection with what Descartes calls the "undoubting conception of an unclouded and attentive mind" and the indubitable certainty supposedly linked with it. For Descartes, such conception is sun-clear insight into a specific situation (such as is exemplified in the famous *Cogito ergo sum*)—an insight which, when achieved, shines by its own light, its certainty being guaranteed by its own clarity, and is therefore indubitable. Locke seems to be at one with Descartes here. There is, for him, "direct perception" of agreement or disagreement among our ideas; such insight is the most certain that "human frailty is capable of" and he who demands a greater certainty only proves that he "has a mind to be a sceptick" without being able to be one. Spinoza, too, insists that *intuition* is the most certain insight we have or can have. But, for Spinoza, such insight has a character which neither Descartes nor Locke specially notes—the character, namely, of being systemic or relational (*scientia intuitiva*). Spinoza conceives it, in other words, as direct insight into a systemic whole, rather than as direct insight into an atomic or non-systemic situation. In Kant's usage, intuition refers either to the act of apprehending objects (or, *matter*) through the special faculty of sensibility or to the matter of experience thus apprehended; in neither usage does the term indicate what the other thinkers have in mind when they make use of it, since in neither usage would Kant equate it with knowledge. But in his consideration of what he calls *analytic* judgments, Kant approaches nearer the sort of insight with which Descartes, Locke, and Spinoza are concerned. In such judgments, Kant admits, we do have direct insight which is determinable by the application of the principle

of non-contradiction alone ; it shines by its own light. But such insight he regards as relatively insignificant, so far at least as our knowledge of the external world is concerned ; such knowledge, he holds, comes only through the *synthetic* judgments, and these fall beyond the reach of any sort of intuitive insight. With this view of Kant's, Hegel most heartily agrees ; indeed, it is because of this that he deems all knowledge essentially dialectical. And since knowledge is essentially dialectical, he denies that any knowledge can be said to be intuitive in the sense of Descartes's "clear and distinct conception" of an unclouded mind : everywhere, rational insight must grow out of previous analysis and reflection. And that it actually does so, he thinks, is not difficult to illustrate. "We need only note, as the commonest of experiences, that truths, which we well know to be the results of complicated and highly mediated trains of thought, present themselves immediately and without effort to the mind of any man who is familiar with the subject. The mathematician, like everyone who has mastered a particular science, meets any problem with ready-made solutions which presuppose most complicated analyses : and every educated man has a number of general views and maxims which he can muster without trouble, but which can only have sprung from frequent reflection and long experience. The facility we attain in any sort of knowledge, art, or technical expertness, consists in having the particular knowledge or kind of action present to our mind in any case that occurs, even we may say, immediate in our very limbs, in an out-going activity. In all these instances, immediacy of knowledge is so far from excluding mediation, that the two things are linked together,—immediate knowledge being actually the product and result of mediated knowledge." According to Hegel, then, the supposition that there is intuitive insight, in the sense in which such insight is supposed to be direct and immediate, is grounded in nothing more significant than mistaking a psychological feeling of "ease" in the solution of a problem for logical insight into the relevant data. The latter insight, which alone he would call knowledge, always and everywhere springs, he thinks, from previous reflection.

Finally, Kant's conception of *noumena* separates his theory of knowledge rather sharply from all the others. That concep-

¹ *Smaller Logic*, Section 66 (translation by William Wallace).

tion, it will be recalled, involves and even emphasizes the unknowability of independently existing things: things as they are in themselves (*noumena*) can, under no conditions, become objects for knowledge (*phenomena*). It is true that Kant insists upon the logical necessity of assuming the existence of such *noumena*, and so grants them a sort of cognitive status; in this way he thinks he escapes scepticism. But he persistently denies to them any positive cognitive status, maintaining to the end of his analysis that we can never have knowledge of their structure and characteristics. In such a position, however, Kant stands alone among the thinkers here under survey. Descartes, while not explicitly raising the issue, assumes that it is possible for the human mind to have knowledge of existents; indeed, his very first intuitive proposition is a proposition about an existent ("I think, hence I am or exist"). Locke, on his part, finds difficulty in fitting such knowledge into his general definition, which tends to limit knowledge to "ideas" and to exclude existents from its scope. But he remains convinced, with common sense, that there is such knowledge and that, in the end, a sufficient criterion of its verity is available, each of us being "invincibly conscious" of the existence of objects around us. Neither Spinoza nor Hegel entertains serious doubts on the point. For Spinoza, a true idea is *eo ipso* insight into the "essences" of things, its verity being adequately guaranteed by its own nature—whoever entertains a true idea cannot be in doubt that it is true. And Hegel holds essentially the same view, though with a decidedly different emphasis. For him, the nature of reflective consciousness includes its object, since it is always and everywhere characteristic of consciousness to be *of* an object; and this object is a real object, not a mere *phenomenon* in Kant's sense, the complete nature of which is disclosed by veridical thought.

These differences are motivated by the complexities of cognitive experience, and not by any arbitrary whims on the part of the philosophers whose views we have outlined. They are, thus, indicative of the basal issues with which any theory of knowledge must concern itself. The various analyses in support of them offered by the several thinkers go far towards clarifying the issues, and therefore supplement in significant manner the independent discussion of the issues presented in Part I of the present study.

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