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THE SELF AND NATURE

BY

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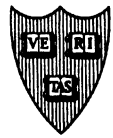

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TO

MY MOTHER

FOREWORD

THE task of metaphysics, as I conceive it, is twofold. Accepting experience as a fragment of reality which is unimpeachably given to us, metaphysics undertakes first, to analyze and describe its omnipresent aspects and fundamental structure: its relation to the self, to the body, to nature, to knowledge; its changefulness; its spatiality; the spontaneity and causal determination of its elements; its relatedness. This is the more certain part of the study, where truth will reward any one who examines attentively and without prejudice, and who constructs with skill and fidelity the concepts which he uses to describe what he finds. But metaphysics has a second, a synthetic task: to project a total vision of the world. By following along the lines of the outward going relations of given experience, the philosopher seeks to discover the whole of which it is a part. As necessary materials for this purpose, he has to use the larger facts and broader generalizations of science, interpreting them, however, in the light of his analysis of experience. Hence, despite this dependence, metaphysics differs fundamentally from science in being radically empirical and critical, and in passing from the part to the whole. This is the less certain portion of the study, because it requires a freer use of hypothesis; yet the extension of experience which it demands is no different in kind or certainty, I believe, from

that involved in any special science where the facts are not all open to inspection.

The method of metaphysics is, therefore, radical empiricism extended through the imagination. The source of all of our knowledge of reality is given experience — without a careful analysis of this, there can be no sound metaphysics. There are, however, within given experience itself motives for going beyond it, and for this, the use of the imagination is not only legitimate, but necessary. Yet the meaning and value of every concept employed either in the description of given experience or in its imaginative extension is literally equivalent to the images and concrete experiences from which it has been derived or into which it might lead.

In the present work I aim to study in a direct and simple fashion the great problems of metaphysical philosophy so conceived. Each of these problems receives independent treatment in a separate chapter, yet the work is, I believe, a consistent and fairly complete whole. The doctrine of the nature and unity of mind expounded in the early chapters, as the reader will discover, determines the point of view of the entire book.

Anybody familiar with the history and recent literature of philosophy will recognize how large a debt I owe both to the living and the dead. For the sake of simplicity and continuity of writing I have not made all the acknowledgments which I might have made in the body of my text. I wish therefore to make my chief acknowledgments here at the outset. Although I do not think that I am in total agreement with him anywhere, I am throughout indebted to

James for the radically empirical, dramatic conception of the universe which I accept. In the early chapters my inspiration for the view that sensations are a real part of the system of the physical world has been drawn chiefly from Berkeley and Mach and Bergson; in the chapter on Causality, for the derivation of law from spontaneity, I am directly dependent on Charles Peirce; my emotional and moral attitude towards nature, as expressed in the Conclusion, if not the same as Santayana's, is at least, I feel sure, colored by the *Life of Reason* and the personal teaching of its author. Although disagreeing with them on many topics, I am deeply indebted to my teachers Royce and Perry, and to Russell and Bradley and Ward for my method of approach at several points and for abundant suggestions. Finally, to my colleague and chief, Wenley, I owe much for inspiration and encouragement during the writing of the book.

Despite all these acknowledgments, a large part of my work is, I believe, original. There is something especially new, I think, in my treatment of personal identity and the relation of the self to nature. The work is, at all events, a first-hand attempt to think through the great problems of philosophy. It has been for me a personal, an unavoidable quest, an intellectual adventure, upon which I now invite the reader to follow me.

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THE SELF AND NATURE

CHAPTER I

THE SELF AND THE MIND

IN the intellectual adventure which lies before us we might start anywhere; but let us begin at the point nearest, — with ourselves.

What is the self ? Which of all the many things which I can find or know can I identify as myself ?

I certainly am not, for example, this gray and shape of table, this color and odor of fruit, this sound of typewriter. I am, to be sure, very intimately bound up in some way with these things; they are very close to me; yet they are not me. On the other hand, among the things which I can find, there are some which seem to be unquestionably a part of me: my interest in this search, the pleasure in the search as I proceed with it, the various thoughts and opinions which I find and somehow own or hold with reference to it. If, at the moment, I were to suppose these things not to exist, I should be at a loss to find anything left of myself. And when I look back over my past and ask myself what I have meant to myself, I find that I have always meant certain instincts, purposes, choices; certain satisfactions and dissatisfactions; and certain opinions, thoughts, memories. Let us call all these things activities.

We cannot doubt that the activities are an essential part of the self; but are they the whole self ? For there are certain things which I stumble upon when I search for the

self about which the question may fairly be raised whether they belong to the self or not. They are often attributed to it. They are such things as strains in the joints and muscles when I move, beatings of heart and shivering when I am afraid, tensions in the forehead and neck when I think — in fact all that part of existence which I call my body, especially when my activities have results there. Another set of things which seem to be myself are my images. These, too, accompany most, if not all, of my activities. My strivings are always inwrought with strains; my desires are always hugging some image of shape and color; my pleasures and pains are penetrated with organic pressures and touches; my thoughts and memories are constantly interwoven with pictures of their objects. And this intimate relation of all these doubtful things to the activities is, I think, the ground of our identification of them with the self. In themselves, they do not belong to the self; but because of their inseparable connection with it, they are effectively a part of it.

The result of our search for the self was the discovery of the activities. Besides these, we came upon certain things which are so closely knit into the activities that the latter never exist separate from them. Hence they, too, while strictly not the self, may nevertheless be called by its name. Then there were the other things which we found in our search, colors and shapes and sounds, with which the self is never confused because never in so intimate a connection. But even they, although separable, are nevertheless bound tight to it. The mere fact that I could find them is evidence

of this tie. I find myself connected with all found things in a way which does not exist between me and things which I do not find. I find, of course, thoughts of these latter things, a thought of my reader and of New York, for example; but what these thoughts mean, the things themselves, I do not find. The things which I both mean and can find — the blue of sky and sound of typewriter, for example — are all in contact with one another and with the self, with the thought that means and the pleasure that is taken in them; but between the things which I mean and cannot now find and those which I do find there is no such contact. The blue of sky and as much of the typewriter as I see make a whole with my feelings and desires from which the part of the typewriter which I do not see and my reader and London are excluded. There is, of course, a connection between what I see of the typewriter and what I do not see; but this connection is not itself seen. There is, therefore, a contact of the self with things which are no part of it; with these it makes a whole from which all things which it cannot at the moment find are excluded. Let us call this whole of things findable a mind or consciousness. This whole is often called a self, but improperly; for the self, as we have seen, is only one part of it. Let us call everything in such a whole which is not self, content. Since the relation between the two parts of the mind is so intimate, it is not surprising that the distinction between them has not always been recognized. I never find myself without some contact with content, and, since I cannot find anything without coming into contact with it and so making a whole

out of it and myself, I never can find any content separate from the self.

The account of the self which we have given may be deemed inadequate for several reasons.

First, one may object that we have described the "me," the objective self, not the "I" or true subject. Our supposition that we could find the self at all may be declared false. How, it is often said, can I find myself; how can the subject become its own object? And if somehow the subject can become its own object and so be found by itself, perhaps its mode of discovery and of knowledge must be different from the mode of discovery and of knowledge of other things; it may be a mistake to suppose that we can search for the self, as we have done, just as we should search for other things.

The basis of this objection is, I believe, a false doctrine of the unity of the self, an exaggeration of that unity. In finding the self, the finding act is not, to be sure, itself found; yet every other part of the self is found. At any moment the self is a whole complexity of interwoven acts; yet there is sufficient independence among them to permit of the direction of one upon another. In other words, a part of the self discovers the rest. And this discovery does not involve, as is often supposed, that the part discovered be a merely remembered self; for the act of discovery may be contemporaneous with the acts discovered. At the moment of discovery I am at once the act of discovery and the other acts. This is undoubtedly a difficult situation, as every psychologist knows, and is the source of all the uncertainties in the

theory of the self. A content is easy to find; not so an activity; for the diremption of the self, the setting of one activity over against another involves, since the self tends towards integration, the unclearness of one of the acts: either the introspected act becomes indistinct, or else the attitude of introspection becomes unsteady and is relaxed. Yet this difficulty is not insurmountable and we do actually find our activities.

The objection may still be pressed that we have admitted the main contention of the objector; for we have provided for no finding of the finding activity itself. Does not this, the pure subject, remain the constant accompaniment of all our activities, forever undiscoverable by the ordinary means? Well, as we have asserted, a given act of finding does not and cannot find itself; yet it can be found — by another act of finding. Of course there will always be one act of finding which is not found; otherwise there would be an infinite complexity in the self, which is not actual; yet any given act can always be found by another directed upon it. We should admit, then, that at any moment the whole self cannot be found; that the ultimate act of finding is not itself found; but we deny that this last act is by nature different from any act of finding which we do discover; for the fact that any given act can be found, and when found has essentially the same nature as all other acts, is proof that there is no aspect of the self which is inscrutable or essentially different from all the rest.

And the admission that the ultimate act of finding is not itself found does not imply that it is known in some peculiar

fashion different from the knowledge of other things. There is only one type of knowledge, that through concepts. The self is known when there exist concepts which represent it; the self is found when such concepts are in contact with, are realized in the activities which they mean. Now the ultimate judgment in which these concepts are embodied is not itself known; for, by hypothesis, there is no judgment directed upon it. It simply exists. The supposition that it must be known and, since it cannot be known in the ordinary fashion, that it must be known in some occult mode, is based on the dogma that an experience cannot be without being known, that its very essence somehow involves a knowledge of it. But, although most of our adult experiences are actually known, as will appear shortly, they nevertheless are in themselves simply what they are: blue and soft, cold, strife and peace.

The conception of the self which stands opposed to the one which we have been advocating is, of course, that of the so-called "pure ego." There exists, it is asserted, a something *to* which content and activities are given, an awareness or consciousness, without the accompaniment of which no experience can exist. This conception has received so much able criticism in recent times that it may seem superfluous to consider it again. A re-examination of it will, however, throw light on our subject. Let us review the supposed data for this theory.

First, there is a seeming complexity, a duplicity about every experience, even the simplest, which is the reason why we use the term experience to denote the elements of mind

and are not content to refer to them as blue, green, hard, as mere qualities or whats. For example, blue as an element of mind seems to be something in addition to just blue — an experience or perception or consciousness of blue.

There can be no doubt of the fact referred to here; but the fact is insufficiently analyzed and is no proof of the existence of mere awareness. For the complexity of any content or activity is due to its involution in other activities. Blue, as an element of mind, is almost always suffused with some feeling, some interest; and even when there is no feeling attached to it, there is a recognition of it which penetrates it likewise and is not externally related to it. And when as philosophers we examine the mind, we cannot find any content or activity which does not forthwith become a known content or activity; so that, when we reflect upon this, we discover not only the original data but our own knowing of them also: a knowledge of the new whole, *known blue*, supervenes upon the mere blue to be known. But this knowledge is, of course, an activity, not a mysterious something distinct from all activity. It is this constant discovery of his own recognition of the elements of mind by the reflective act of the thinker which accounts for the doctrine of the pure ego, rather than, as James supposed, the discovery of some attendant muscular or organic sensation; the latter is far too irrelevant a thing to mislead thinkers of the rank of those who have embraced this doctrine. We admit therefore the duplicity — why not the multiplicity ? — of most of our experiences; but we deny that one of the threads of the skein is anything unique; we assert rather that it is just an ordinary activity; usually it is knowledge.

A second datum for the theory of the pure ego is the following: There seems to be something which remains identical through the flux of different contents and activities; observe how, in the shift from this to that, there is something which abides throughout and seems to embrace the changing items; when the clock ticks, for example, there seems to be something which spans the successive sounds. But is the permanence here anything more or less than some relatively stable elements of the mind which contrast with those in flux? Is it not they which, through their successive contact with the different inflowing elements, span the transition? In particular, is not the attitude of recognition and expectation just the permanent element in question? If, on the other hand, the point of this argument is to insist on the identity of the self and mind despite equally obvious change, we frankly admit that there is a problem; only we claim that its solution does not involve the existence of the pure ego, but is possible in terms of the nature of the mind as we have defined it, as we shall try to prove in our next chapter.

In the third place, one might claim that consciousness or awareness is different from its content because it may be more or less; while the latter does not offer any differences in degree. There is, for example, a difference of degree between the present activity of my thinking and the sound of my heart-beat; yet the quality of both would be the same if the degree were reversed; for the difference is in the awareness of these things, not in the things themselves. But surely the fact referred to here is nothing more or less than

what the psychologists call clearness, and clearness is an attribute of the elements of mind, not itself the mind. It is no doubt true that elements can have degrees of clearness only in the mind, acquiring these differences through their relations to one another there. Clearness has, furthermore, some close relation, as Titchener says, to the " existence or being of mental elements; their becoming, their existence more or less, their temporal course." Yet these facts prove again only that clearness is an attribute of the elements of mind, not that it is mind itself.

A final objection to our view would run somewhat as follows: The activities with which you have identified the self are manifold, whereas the self is one; desiring, feeling and thinking are different, but the same self desires and thinks and feels. Well, the self is certainly one, yet just as certainly a multiplicity; for it owns the many activities indefeasibly. Its oneness must therefore be compatible with its plurality. And it need not be anything besides or in addition to them. For the fact that we use the simple concept " I " or self does not prove that the self is distinct from its many acts; for we use this concept to denote the unity of the acts rather than the acts singly and to contrast them as members of this unity with " yours," which do not belong there. Just so, we speak of " the rose " in order to indicate it as a whole; yet we do not imply that it is something in addition to its various parts — stem, root, petals and the rest.

It is plain from our discussions that the unity of the self is, next to the problem of what the self really is, the burning question in this field. This is a problem, moreover, the

answer to which is of decisive importance in determining the answers to most other metaphysical problems. It is also clear that we cannot separate this problem from that of the unity of mind, of which the self is a part. For the self is intertwined with content and both together form a single whole. Hence we must first investigate the pattern of the entire web, the mind, before we can discover the minor design of the self. Let us proceed, then, to this larger problem. Throughout we shall have to confine ourselves to the broader aspects of the subject in their bearing on metaphysical topics. The unity of mind has two dimensions — contemporaneous and sequential: at any given moment the mind is one whole, and, in some fashion or other, the same as that which existed a moment before and throughout all moments of its existence. The two dimensions are interrelated, but we shall start with the first, leaving the other for our next chapter.

The mental unity which we are studying must be clearly distinguished from that which is studied by psychologists. They try to find the causes why this or that element is in the mind; the conditions for its existence there. The laws of association and habit serve this end. Our task is a quite different one. We are not inquiring into the conditions for the existence of any element in the whole, but into the distinctive character of the whole, once it exists. We are interested in its cross-sectional, not in its dynamic unity. Our interest is in the former rather than in the latter, partly because the latter has been studied with some success by psychologists, while the former has been largely neglected

by them; but chiefly because the former is of supreme importance for the solution of certain philosophical problems.

An examination of the mind readily reveals the fact that there are many types of unity there. One of these is usually taken to be fundamental. For if there are many unities in the mind, it is clear that there must be a basal one to weave the many themselves into a unity. I do not mean, of course, that the larger unity is independent of the smaller ones, but simply that it cannot be identical with any of them, and must have its own specific nature. We shall begin with a criticism of some of the more fundamental of the lesser unities to the end of discovering the fundamental one which they all imply.

One minor type of unity among mental elements is that of class. It is important to scrutinize this because it has recently been regarded as fundamental. The mind has been defined as a class of elements and the problem of mind described as that of finding the defining relation of the class. Now things form a class either because they resemble one another in some respect or, most generally of all, because they have a given relation to some term.

That the fundamental type of unity is not that of class defined in the first way is clear, because there is no unique point of resemblance which at once embraces all the elements of a mind and distinguishes them from every other mind. The elements of a mind form a multitude of exclusive or intersecting classes: the visual, auditory, tactual, clear and unclear, and so on, indefinitely. But no one of these classes unites them all. And those classes which do

It turned out that she lived just around the corner from my own home, having moved there very recently. Thus, by obeying an impulse, I made the acquaintance of a delightful new neighbor.

▼ ▼ ▼

Recently I was having dinner on a train. The soup was especially good. On impulse I said to the waiter, "Please tell the chef this mushroom soup is delicious."

The waiter looked surprised, then pleased. So, apparently, was the chef, for when the vanilla ice cream I ordered for dessert was served, it was smothered with crushed strawberries, though they were not on the menu. The chef had obeyed an impulse, too—and surprised me!

You just never can tell *what* will happen when you act on a giving impulse!

▼ ▼ ▼

I am sometimes asked, "When you obey your impulses, aren't you likely to be *too* impetuous and get yourself into embarrassing situations?"

Yes; every so often. But what of it? We are supposed to be getting fun out of life. We lose so much by *not* obeying our impulses that I figure we can afford to take a few risks for the sake of adventure.

▼ ▼ ▼

There is a serious aspect to impulse-giving, too. We never know when some impulse action of ours may mean much in the life of a friend or neighbor.

existed. This the new realists recognize, because in defining mind through the psycho-physical relation they proceed on the basis of a definite notion of that relation — reaction. The mind, they say, is the class of elements selected out of the whole universe of things through the reactions of the body to them. Whatever a body reacts to forthwith becomes an element in a corresponding mind; a mind is just the class of such elements. But you cannot define mind as the class of elements reacted to by a body, for this one reason at least, namely, that many of the elements do not exist previous to their existence as elements of mind, and so are incapable of being selected out through the body's action. It is absurd to think of the brain as reacting to feelings and memories in the same way that the organism reacts to light or heat. I do not mean, of course, that there is no psycho-physical process of memory or feeling; I mean that you cannot start with these things as given independent of the mind and then define their presence within the mind by means of the psycho-physical relation; above all, you cannot think of the brain as selecting them by reacting upon them. You cannot start with the universe of all elements undifferentiated into mental and non-mental, and then define the former as a group selected out of the whole through organic action, because a large share of the elements of mind do not exist at all except as mental elements.

But there are other reasons closer at hand for rejecting this method of describing the unity of mind. In the first place, the unity of mind is a fact of immediate experience, something patent to the direct inspection of mind; it can be

known quite apart from any knowledge of the body or the brain. In the second place, when we do appeal to the testimony of the mind as to its own unity, we find that its unity is misrepresented if described as a class or collection. It is characteristic of a class or collection that when you take away or adjoin an element you alter only its numerical and ordinal properties. But this is not true of the mind. The loss or adjunction of an element produces changes both in the mind as a whole and in the individual elements of the whole. The sudden emergence of an acute pain, for example, will cause a disappearance of many elements from the mind and the suffusion of the remaining ones with a mood of dissatisfaction; thoughts and purposes will take flight; a complex pattern will be reduced to a simple one; the relative clearness and unclearness of elements will be reversed; the body which was marginal will become focal and the once dominant ideas will be scattered to the background or disappear. Again, a class can be defined by a mere enumeration of the elements which compose it; but not so a mind. There is a mode of combination of one element with another, an interfusion, which no mere enumeration can describe. Wistfulness and violet color will not describe that suffusion of one by the other which characterizes the sensitive intuition of the flower. In short, the elements of a mind are a whole, not a mere class. No indication of the reactions of the body to elements of its environment can explain or describe this wholeness.

Another type of unity within the mind is that of meaning. Thus all the words on this page as I write them, as they be-

come elements of my mind, are united with one another through the one thought which they convey, and with the keys of the typewriter through the apperceived causal relation between the striking and the printing. Similarly, each part of the machine, for one who knows the scheme of the whole, refers to or means every other part. Almost, if not all, the things in the room, books, pictures, chairs, tables, as elements of the mind, are meanings, items of experience which refer beyond themselves to other things. And meaning is a mode of union which seems to be uniquely characteristic of mind. Apart from mind things may perhaps have causal, spatial and other relations, but they do not mean one another. Only when they are apperceived in their relations to one another, so that one may suggest another to a mind, do they mean one another. For example, clouds may perhaps cause or be followed by rain independently of mind; but they can mean rain only to a mind which uses them as signs from which to infer rain. Yet meaning is not the fundamental unity of mind. In order for it to be this, each item of mind would have to mean every other item. Now each item may do this — for reflection; there is surely some respect in which each may suggest every other. But before reflection there are countless elements which do not do this. The sight of the child in the street did not mean my elbow, yet both were present within the unity of my mind. And that meaning is not the essence of the unity of mind is also clear from the fact that an element of one mind may mean an element of another without thereby forming with it a single mind. For example, the sound of your voice means to me a certain

emotion of yours, which can never be an element in my consciousness. Meaning is one of the characteristic modes of union between the elements of different minds; hence it cannot constitute the unique principle of union within a single mind.

A fourth type of unity of which much has been made is that of purpose or interest. At any given moment of experience a large number of items are clearly united through some single purpose which they are all subserving or some one interest which they all arouse. For example, when a botanist examines a flower, the multitude of his impressions are bound together by the interest which he displays in them, and the movements of his fingers, so far as they reach consciousness, are all connected as serving the purpose of study. But this type of unity — through an activity of the self — although another very important one, is not the most fundamental, for reasons exactly the same as in the preceding case. For at any moment there are items of mind which are not united in this way. The crying of the child is irrelevant to the purpose of writing. One might answer, of course, that it is connected just as a disturbing element. But what of the thousand impressions in the field of inattention? These are related neither as serving nor as hindering purpose; yet they are present along with the rest in the one mind. And how is the mind united when there is a conflict of interests within it, as when I try to write and to listen to what is going on upstairs? There is no higher purpose or interest which spans both. Finally, interest may be directed upon things which do not thereby come within the circle of one's

mind. Thus, when we take an interest in each other, we are not made into one whole of experience. The unity of mind cannot, therefore, be described in terms of mere interest alone.

Another type of union is that which is made by the relation of the elements of mind to the idea of the self. A large mass of experience is continually suffused by this idea. The emotions awakened during social intercourse and the elements of the conscious body with which they are connected are notably so. As has often been observed, the idea of the self serves to mark off the elements of one mind from those of another; it is therefore uppermost when social life with its contrasts occupies attention. Its sphere of application is properly, of course, the activities which constitute the self and those elements of mind with which they are most closely interwoven. But since all the elements of the mind are connected more or less closely with the self, it is possible to refer them all to the idea of the self. In aesthetic perception, for example, one may connect the idea of the self with the colors or lines or sounds of a beautiful thing — feeling oneself into them, as the Germans say. Yet this reference to the idea of the self is intermittent. We must remember that this act is one of reflection. The idea of the self is a concept under which certain elements are subsumed. The idea of the self is not the self. It serves most effectively to unite the elements which are referred to it; yet the mind can and does exist without it. Before the development of ideation, it could not exist at all. The self, of course, is as old as the mind, but not so the idea of the self. The greatest

confusion has arisen through failure to distinguish between the two. Because the idea of the self can easily be shown not to be an original existence, people have supposed that the self was also derivative; but such an argument would demolish all experience; for the concepts under which we subsume any part of it are, of course, genetically secondary. The confusion leads also to grave ethical consequences; for the idea of the self is created more by wish than by observation and therefore misleads us constantly into thinking that we can do things of which we are really incapable — the source of all the great illusions. Again, the idea of the self is more largely reflective of what other people think we are or want us to be than of what we are or want ourselves to be; hence when we act according to it, although we may satisfy others, we often fail to satisfy ourselves. The self is primary, not the idea of the self, which may, and usually does, partly misrepresent the self; the self accompanies all of our experiences; the idea of the self only certain ones under certain conditions, mostly of a social origin and character. The self-conscious man is one in whose mind there is clear and uppermost an idea of the self. Yet even such a person is at times without it. When he is alone and quietly working, it is not present with him. Hence the suffusion of the elements of mind with the idea of the self creates only a subordinate type of unity.

The fact that the self and the idea of the self are distinct, although related, elements of mind has caused much confusion of terminology. The terms, consciousness, self-consciousness, self and mind are not always clearly distin-

guished. Let us fix our own use of them. We have already agreed to employ mind and consciousness as equivalent terms to mean a personal whole of experience. By self we have agreed to mean the activities in their unity. Now, although the self and the idea of the self, the mind and the idea of the mind are distinct things, and both mind and self may exist without being known; nevertheless, consciousness and self-consciousness are continually being confused. This is perhaps most strikingly brought out in the use of the negatives of these terms. Thus the term " unconscious " is employed not only with the proper meaning of the absence of something from mind or the non-existence of a mind, as in the phrases " I lost consciousness " and " I was not conscious of the noise "; but also with the improper meaning of the failure to know something which is in the mind, the absence from the mind of an idea which means it, as when one is said to work " unconsciously " when one works without plan or criticism, when one forgets oneself, that is, remits attention to one's acts, and so lets the idea of them, which is their reflex, lapse. One is even said to be conscious when what is really meant is that one is self-conscious; the person who is " conscious " about his behaviour being, of course, the self-conscious person. Yet the poet is conscious during the most unreflective, inspirational activity, although not self-conscious; the most intense moments of consciousness are the most " unconscious " in the improper meaning of the term — the most free from self-consciousness.

The discussion of the last paragraph leads to the consideration of a final method of describing the unity of mind.

The mind, one may say, consists of all those elements of reality in which one can get an adequate realization of an idea which means them; it consists of all those things which can be brought into contact with the idea of them. Other things, outside of the mind, cannot be brought into contact with such an idea. Now we have already used this method to find the elements of mind and to delimit them from things not in the mind. And it is true that the finding of elements by an idea which was " looking for them " does bring them into unity with the idea, in the first place, and with the rest of the mind, in the second place. But it is easy to see that this type of unification cannot be the fundamental one. For not all elements of the mind are found; they exist in the unity of mind before we reflectively look for them. The primary unity of mind exists before any one seeks to test whether an element belongs within it or not. This type of unity is, therefore, like the others which we have examined, a secondary one which may be superposed, along with the rest, upon the original type.

Let us now turn from a critique of current accounts of the unity of mind to a somewhat independent investigation of the matter.

The mistake of most of the accounts which we have examined was to substitute some secondary type which may be present, but is not uniquely characteristic, for the primary one upon which it depends. Thus the unity through interest, as we saw, was not in itself a unification of the elements of mind, since it may embrace things, like other minds, which do not form elements of the one mind in ques-

tion. The same we saw to be true of meaning and of knowledge. It is only when an interest in things is in contact with them that it serves to unite them in the whole of mind; it is only when an idea which means a thing can also touch it, as it were, that the two form elements of a single mind; it is only when one thing which suggests another is in contact with that other through contact of both with an apperceiving idea, that the union which we seek is effected. The primary unity of mind consists in the contact of the self with content; upon this as a basis is built more complex types of unification.

Let us develop this. First let us recall what we mean by the self. The self consists of the activities, of striving, feeling and thinking, in their various modes and with their attendant images and organic reverberations. Now the presence in mind of any content is its contact with them. For example, I am conscious of, have in mind, the clock tick when I, this whole of striving, feeling, thinking, am welded together with it, when it penetrates this mass, touching an interest or a judgment of recognition or a mood, and so soliciting and usually receiving the direction of these things upon it. Contact with the self does not depend upon the direction of interest or judgment upon content; when a content enters the mind, these functions are usually engaged upon content already present. No; the contact of the content elicits this direction; the contact with the activities comes first; the direction of the activities follows. Elements of content may belong to all kinds of other wholes, qualitative and causal, like a chord or a mechanism; but I am con-

scious of them, they are "in mind," only when they come into contact with the self and bring one of the activities to bear upon it. A bit of content comes to mind when it touches the self; it passes from consciousness when this contact is ruptured. Thus, when I open my eyes I am brought into contact with the landscape; when I close them I am shut off from it. Through an idea which remembers it, I may still take an interest in it, may take pleasure in it and know it; but my interest can no longer play upon it or my pleasure encircle it or my knowing idea melt with it.

In describing the unity of the self with content as a contact of one with the other, I do not wish to imply that this relation is spatial. I use "contact" as the most expressive term which we possess to indicate that unique being together of content with the self which everybody who observes his own mind will understand.

The unity of the self with content may be greater or less. Data in the field of inattention are only loosely connected with it; they touch the self without being embraced by it. Elements are closely connected when they are interwoven with many activities simultaneously. Thus, in aesthetic manufacture, color and line and touch are suffused with pleasure and interest, and even at times with the idea of the self. Or in longing for spring there is a meaning which inheres in images of warmth and green, around which circle desire and pleasure and the idea of the self. The most impressive cases of complete unification are excited perception, as in watching the acts of an enemy, beauty, and the abandon of passion. Very seldom, however, is the mind com-

pletely integrated; seldom, if ever, are all the activities concentrated at a given point; they are usually diffused over a wide area, so that few elements of content penetrate the whole self, but, remaining at the periphery, fail to reach the center. An element may, however, gradually work its way to the focus. Thus, when occupied in writing, a bit of color in the landscape will at first be scarcely seen; presently, however, more and more of the interest of the self will be bent towards it; thought, feeling and memory will be brought into touch with it — it will at last have become entwined with the whole self. And the reverse process may occur. A pain will at first draw to itself the thoughts, feelings and energies of the self; soon, however, while remaining just as acute, the activities will be drawn away from it to other things, until, finally, it will exist only on the outskirts, ready at any moment to break contact with the self and so to disappear from the mind. What is called the clearness of content is in general a function of the closeness of this contact of the self with it.

Thus the primary unity of mind consists in the contact of the self with content: I am conscious of, have in mind, whatever I am in contact with. If, then, this constitutes the unity of mind, what, we must inquire next, constitutes the unity of the self ? The unity of the self is something similar, only more closely knit. Of what sort, for example, is the unity of this memory of injury, this indignation and desire for vengeance and thoughts seeking impetuously a scheme of retribution — all present simultaneously in the breast of a man ? It is clearly not the convergence of the many activi-

ties upon one topic; for the activities of many men may similarly converge, yet do not form one self; and a man still remains one man when his activities are distraught; when impulses tear him in diverse directions or when he tries to think of many things at once. Well, the unity within the self is open for any man to inspect; let him compare the appropriateness of the expressions which we shall use to describe it with the evidence of his own experience. The unity, we say, is an interweaving of the activities. It is nothing besides them; it is a growing together of them, an interpenetration of them. Just as color and shape are grown together in a flower, so thought and feeling and striving are grown together in the self. And this interweaving of activities is, we repeat, different from their ideal unity in the direction of them to the same end. The ideal unity is correlated with a real unity, but does not suffice to create it.

Just as the unity of the self with content has degrees, so the unity of the activities may be more or less. It is greatest in states of what we call concentration; it is less in distraction; and least of all in those pathological conditions when it threatens to be disrupted. We may compare the state of concentration of activities to a pencil of rays which lie so close together that they almost form a single strand; in distraction the rays diverge, yet keep their point of contact; in pathological conditions the divergence is still greater, until, in dissociation, the pulling apart is successful and the tie is broken. When I say that it is the one self which thinks and desires and feels I do not imply that there is some bare unity which enters into each of these activities and makes

them all one; I mean that the desire is interwoven with the thinking and with the feeling; that one activity is penetrating another, so that, in a true sense, the whole self — all the activities — is present in any one of them.

Thus, to conclude, we have found that the unity of the mind consists, in the first place, of the contact of the self with content; and, in the second place, of the interweaving of the many activities, which are the self, one with another. The activities are interwoven among themselves and with the content, and this woven web is the mind.

CHAPTER II

PERSONAL IDENTITY

IN the present chapter we shall discuss the sequential unity of the mind. In what sense does the mind of one moment form one mind with that of another moment? From the cradle to the grave, the life of the individual is a continual process of change; yet to itself and to others, it seems to be one life; the self that dies is the same self, we believe, as that which was born. Let us begin our discussion with leading theories of the subject and then offer our own. We shall find that the identity of the mind has always been denied under cover of accepting it.

First, there is the theory that the identity of the mind consists in the identity of the body or the brain with which it is connected. Experience, it is said, is essentially evanescent; it is born and dead at every moment; the same experience never recurs; during sleep it does not exist at all. Yet the body, and the brain in particular, upon which experience depends, has a continuous existence. The same body wakens and acts which became quiet and slept; the same body that was placed in the cradle is put into the grave. That this theory is really a denial of personal identity is clear from the following considerations. In the first place, the experience of an individual is not his brain. If the brain has a continuous existence and experience only a fleeting and interrupted

one, they cannot be identical. Or, if experience is identified with some particular phase of the brain's action, why when I know my own experience do I not know this physical process also? For, if one thing is identical with another, a knowledge of the first involves a knowledge of the second. Yet notoriously the introspection of experience does not reveal any trace of the brain. And even if experience were identical with certain phases of the brain's action, no identity within experience would be guaranteed; for the phases themselves are admittedly transient. An identity in the brain's substance, if it existed, would not create an identity in its phases; but, from the standpoint of natural science, there is no such identity there, since the atoms which compose it are ever being replaced. And if, finally, it is claimed that during the conscious existence of the individual the form of the atomic swarm remains the same, and that this constitutes the real identity within the mind, we should have to ask how the same form can exist in different matters, and if it can, why experience itself may not have a direct identity of the same kind? Why have recourse to the brain at all? And thus we should be led into the theory of personal identity which we shall next examine.

According to this second theory, the identity of the mind lies within the mind itself, in the sameness of the form of its elements. The essential evanescence of the substance of experience is presupposed, but the same form may exist in different matters, it is claimed. Although each moment of experience is unique in substance, nevertheless, the quality of the organic sensations which make up its matrix remains

specifically the same, and the desires, purposes and life-plans which constitute its spiritual core are ideally identical from moment to moment. The intent of this theory evidently depends upon the logic of identity. If by sameness of form or quality be meant similarity, then this theory, like the others, is a covert denial of self identity. For resemblance, no matter how great you make it, is still not identity. And what I claim with my past self is not mere similarity, but identity. So far as similarity is concerned, I am less like the child that I was than I am like my twin, whose education, way of life and thought are like my own. Yet, so we claim, I and the child are one, while I and the twin are irreducibly two. On the other hand, if by identity of form be meant real identity, then surely this is not possible at all with a different matter of experience. Form and matter are not so external to one another that the former may be the same and the latter utterly different; an identity in the one implies some identity in the other. Two things may have similar forms and remain two; they cannot have the same form without being one.

There is a Platonic interpretation of this theory of personal identity according to which the experiences of an individual are one if they illustrate, embody, or unfold a single idea; if they all contribute something to his unique and determinate destiny. Identity in the different moments of a man's experience is thus explained as the possession by all of the same relation to a certain thing — his lot or fate or " intelligible character," or however else one may designate it. The result of this theory is, nevertheless, not dif-

ferent from that of the last. No identity between one moment of experience and another is guaranteed. For many different things can have the same relation to a given term; for example, many brothers have the same relation of sonship to the one father. Through sameness of relation to a given term items are made into a class, not into an identity. In the second place, this theory presupposes determinism — the existence of a set of truths about the life of each individual before he lives it. But, as we shall show later, no such complex of truths pre-exists; for all truth, so far as individual, is *post factum*. Of course the theory can be conceived in a less Platonic fashion. One may simply observe that every life runs a unique course and permits of a unique story. Men have plans and carry them out, and fulfill tasks which extend through the years, thus giving unity to their lives. Yet in the drama of some lives the episodes are more numerous than the acts, and there is little or no coherence. And this empirical form of the theory comes in the end to the same thing as the Platonic: it provides no real identity between the various moments of experience, but an ideal unity at best. Finally, any one who believes in the reality and not merely in the semblance of self identity would raise the following objection: the identity is immediate; there need be no consciousness of one's special function in the world or relation to one's star; one may be ignorant of one's appointed place and lot, yet know one's personal sameness none the less.

Another type of sequential unity of which much has been made is continuity. During waking experience the process

of change over a wide area is very gradual. Now when this feature is combined with the preservation of approximately the same specific form, the impression of identity in anything is very strong. If the elements of an object are gradually replaced by similar ones in a similar arrangement, every one takes it to be the same thing. May this not be the case with the self? Well, if this is all there is to personal identity, then personal identity is an illusion. In order to make identity real, there must be some substantial core which persists despite and in the midst of continual change. And such is the identity to which experience seems to testify.

Another characteristic of experience which is emphasized in connection with the above as providing a basis for the idea of personal identity is the causal relation between one phase of the mind and another. The deeds done by the self of the present influence the life of later moments; habits formed in youth have consequences in old age. Each new moment of experience grows out of the preceding. Yet, unless all causation involves identity between cause and effect, this fact is evidence of a unity within experience, but not of identity. And if identity were involved, it would prove identity not only between one phase of a self and another, but also between one self and another self. For a self's deeds are effective not only in subsequent moments of its own life, but in other selves as well. The causal relation between one self and another is not so direct as between different moments of a single self, yet is none the less real. Yet surely this consequence is to be avoided; and, if so, the idea of personal identity does not rest on

the causal relation between one moment of experience and another.

The two theories which we shall examine last have been made famous through the advocacy of James. James's first theory of personal identity was that it consisted in the identity of the things which the self means or takes an interest in. Thus, at different times I see what I suppose to be the same rose. This does not mean, we are told, that my rose-perceptions are the same; for they are dead ineluctably on each occasion; it means that I perceive through my different experiences the same thing. Again, on different days and at different times during the same day, I think of an absent friend; this does not imply that I have the same thought, but only that I think of the same object. It is inaccurate to say that I have the same interests, thoughts and purposes from day to day; I should rather say that I think of the same things, take an interest in the same objects, purpose the same undertakings. Experiences are always unique and fleeting; what lends them their seeming stability and identity is the power which they possess of meaning the same things. Thus self identity is again explained away as an illusion, this time arising from the substitution of the identical objects meant by experiences for the experiences themselves. Yet this explanation has little plausibility. Why, if it is true, do I not identify myself with historical individuals who devoted themselves to the same problems which are occupying me? Why do I not identify myself with my boon companion or fellow worker? Of course, in a mystical moment, I may do so; yet in such a

moment I may feel myself to be one with the cuttlefish; these experiences may be of value in throwing light on the metaphysical oneness of all things; but they do not illumine the distinctive identity of a man with himself. And the plain teaching of our experience is falsified if we interpret away the evident identity of thought, feeling and interest into an identity of their objects.

Last, there is the other theory of James, that personal identity consists in the assimilation or appropriation of past experiences by the successive pulses of new experience. Personal identity is thus made to consist in self identification. I am identical with my own past rather than with yours because I claim this identity; because I take an interest in my own which I cannot take in yours, and refer my present experiences back to it in a unique fashion. The thought of my past has for me a " warmth and intimacy " which the past of another person is incapable of causing, however interesting it may be to me. The basis of this identification of each self with a unique past is, of course, memory.

Every thinker is indebted to James for his description of personal identity, the merest outline of which is given above. Yet here, as almost everywhere, James has failed quite to hit the mark. In the first place, there is no recognition of personal identity as a fact with an attempt to show how it is possible; but merely another effort to explain it away. For let us consider the various parts of this description in turn. A claim to identity is not identity; unless supported by facts, it is simply a boast or a falsehood. Insane people

have claimed identity with Napoleon or Christ. What makes the claim to identity substantial in one case and foolish in another? Various things which have already been examined, such as continuity and causal unity, may now be adduced. Yet if no real identity is proved by them, what right have they to be introduced as evidence? Perhaps the other elements in James's theory must also be taken into account — the feelings of warmth and intimacy. But does a mere feeling of kinship and ownership prove or constitute kinship or ownership? And should we not seek to cut it out and cast it from us if it be not a response to fact? As for memory, if each act is new, the fact that it looks to an identical and unique past does not confer any real identity upon the several remembering experiences; it simply makes of them a unique class through their relation to a unique object — the historical truth about, or biography of, the individual in question. The self identity of the truth remembered by supposedly different memories cannot make them identical.

Thus all the theories of personal identity which we have examined are really denials of it, plain efforts to explain away our conviction of it. We shall now attempt to do two things: first to refute the dogma upon which this denial is based, and second, to develop a positive theory which shall rest upon, and support the belief in, real identity.

The dogma upon which the denial of personal identity rests is that of the volatility of experience, its incapacity of existing beyond the moment, a prejudice which has the support of most psychologists and philosophers of the present

day. In contrast, things are supposed to possess a stuff-like nature which permits them to remain the same from moment to moment. This alleged evanescence of experience is often thought of as constituting one of its points of superiority over matter; why I do not know, unless volatility and spirituality are still to be identified. Yet, as we shall insist later, this contrast between experience and things does not exist. We know nothing of things except as they are given to us in our experience and as we are led to extend this knowledge with the given as a basis, which, however, can lead us to nothing essentially different. Hence if experience is by nature transient, things must be transient also; if there is no real identity and permanence in the one, there is none in the other. The doctrine of the radical difference between experience and things is based on the substitution of concepts like ion, atom and molecule for the concrete thing experiences which are given to us, a substitution which has symbolic and practical value only, as men of science are coming to realize with increasing clearness.

Besides the substitution of symbolic concepts for things, there are other reasons, nearer to the field of ordinary knowledge, for the supposed contrast between experience and things. One is the apparent constancy of sense experience and the evident flux of thoughts, feelings and emotions. For the common man, sense experience is matter and all the ideas which philosophers construct on the topic have still their roots in this experience. But, as we know, sense experience is a part of the mind, so that whatever stability is to be credited to the former must be credited also to at

least that part of the mind which it composes. If there is any permanence and identity in the things which we perceive, there must be a corresponding permanence and identity in our perceptions of them; for things are partly given in perception.

Another reason is the persistence of the body during the sleep and after the death of its possessor. We have already adverted to this. But it proves only the persistence and identity of the body experiences of the people who observe the body. To be sure, these experiences are, as we shall try to show, part of the physical world; yet they are none the less part of the minds of those who perceive the body, so that, if they possess identity and persistence, the minds do also. And the fact that the body and the rest of the physical world outlast the man does not prove their essential imperishability, but only their superior durability; and does not prove that mind has no share in this quality; quite the contrary; for we come to know of its existence in things through the existence of things in minds.

Finally, the location of experiences in the temporal series is another reason for the doctrine which we are examining. An experience which is placed at a given moment in the time series is thought to be incapable of existing at a different moment. Since all moments are unique, it is argued that all things, which, of course, exist at some moment or another, must also be unique; that since no moment can recur or endure, the experiences which exist at a given moment cannot recur and endure, that is, cannot exist at different, including subsequent, moments.

I do not think that it is usually perceived that this line of argument would prove equally the pure instantaneousness of physical things. For everything in the physical world also has location in the time series. The fallacy of the argument is due to failure to perceive that the uniqueness of moments does not involve the uniqueness of the things which exist at those moments. For the same thing can exist through many moments. The facts of motion, rest, growth and change leave no doubt about this. Of course a thing does not endure unchanged; yet there is identity despite the alteration, else we should not be able to recognize it as the same. The metaphysical and dialectical difficulties involved here we shall consider when we discuss the general subject of time and change. Now I cannot understand why experience should be in any case different from things in this regard. There is no logical principle which necessitates a difference, and empirically, experiences are found to endure, change and grow — all facts which contradict instantaneousness. Just as the same thing can exist at different moments, either remaining at rest or moving from point to point, so the same experience can abide during many instants, not wholly unchanged, of course, yet partially identical.

This may be admitted to be true of much of continuous waking experience, yet the intermittence of experience during sleep and at other times will be held by most to render inexact our comparison of the psychic with the physical. Here we touch the palmary argument of the believers in the volatility of experience. Physical substance can be identical from moment to moment, it will be claimed,

because there is no discontinuity in its existence; but any experience which comes to be after a lapse of time must be absolutely new and unique; it cannot be the same as that which preceded the interval. Omitting for the moment the question whether the discontinuity of mind proves a radical distinction between mind and matter, let us inquire whether it is fatal to the identity of mind. Now the supposition that it is rests, I believe, on the fallacy about time just referred to, namely, that because moments are unique the things which occupy those moments are unique also. But the fact that the moment of waking is different from that of falling asleep does not imply that the waking experience is numerically different from the experience which was falling asleep, and the interval of time between does not affect the situation at all. This is not perceived because of the surreptitious idea that we have to do here with two distinct experiences: one the waking experience and the other the experience which fell asleep. Two things, of course, cannot be identical. But the fact is that there is only one experience involved, the present experience, which is partly identical with the past. We must not think of the present experience as existing at some point on the line of time and the past one as existing at a different point further back. In so far as the present experience is identical with the past, it exists both now and then. The root of the trouble lies in thinking of time as a straight line having independent reality, whereas in fact time is nothing except the process of experience and the trail of truth which it leaves in its wake — all of which we shall make clear in our treatment of time.

Nevertheless, the doubter will probably not be satisfied with our explanations; he will object: surely the past experience did cease to exist; there was a time during which it was not at all; how then can that which once has not been be again numerically the same as it was before? Well, why not? Experience is a process of transformation and creation; hence, why cannot that which was destroyed be recreated — that which was formed be formed anew? There is no principle of thought or reality which forbids this. And the denial of it is due to ignorance of the fundamentally resilient character of experience. In the passage to non-existence a thing does not acquire any new character which could distinguish it from what it was; during the period of non-existence it undergoes no radical transformation — how could it? — and there is no new character added by emergence into existence. Existence, as Kant said, is no quality and non-existence equally not. The mere fact that a thing exists or does not exist does not affect its character; hence cannot affect its sameness or difference. The whole difficulty roots, I repeat, in the supposition that the present thing has its double back in the past; that there are two existences which, *qua* two, cannot be identical. But, once more, a difference in moments does not involve a difference in existences; for the same thing may exist at many different moments and quite irrespective of whether they are continuous or discontinuous. The very same experience that was can exist anew at separate moments of time; and these reappearances are not duplicates of the old; they are just the old recreated. When an experience disintegrates, it

ceases to exist absolutely; but now, this very thing may be redintegrated; that which ceased to exist may come again into existence. And its sameness is not of mere quality as distinguished from numerical or existential sameness. If the past and the present thing were two, as two rungs of a ladder are two, this would have to be the case. But the very stuff of the old is born again, and when reborn is the same past thing which was destroyed and had ceased to exist until now.

Thus far, however, we have simply shown the baselessness of the prejudices against personal identity, but we have not shown it to be real. We turn now to the positive, constructive task. We must show two things: first, that personal identity exists, and second, how much of the person is identical; for we admit, with every one else, that a large share of experience is transient.

But first of all we must inquire more narrowly into what we mean by identity and how we can prove that it exists in the mind. By identity may be meant the abstract concept or meaning, identity. This, however, like all concepts, is the reflex or representative in the mind of something real in that which the mind knows and reflects upon. The application of a concept to anything is the assertion that there exists in the thing a reality corresponding to the concept, known by the concept. To verify a concept means to bring the concept and the reality which it means face to face, to cover the one with the other. Hence, just as the concept blue means the concrete blue of skies and flowers, means this element in the reality of these things, and could be formed only because

there is this real blue in things; so identity means something concrete and real in the things of which it is asserted. If you ask me what identity is, I should have to reply by showing you an identical object, by giving you an experience of identity; just as, if you were to ask me what blue is, I should show you something blue, give you a blue experience. For identity is just as simple and irreducible as blue.

Identity must be carefully distinguished from similarity. Similarity pertains to two things; identity only to one. Thus two leaves are similar, while each is identical. Those things are similar to which the same concepts can be applied, the greater the similarity, the larger being the number of such concepts. Two individual things can be in all points similar and yet not be identical. A single thing can be more or less identical, which means that some of its elements are the same, while others are different. And, of course, in so far as elements of a thing are the same, the same abstract concepts fit it, while in so far as they are different, other concepts have to be applied. Hence only a single individual can be more or less identical; different individuals can be only more or less similar. Moreover, as Hegel taught us, identity always implies difference: identity does not exist unless some of the elements of an individual change, that is, become different. I do not mean merely that identity is not noticed apart from difference, but that it does not exist to be noticed. In a purely static world things would not be identical with themselves; they would simply be. But this whole question of the relation of identity to difference and to change will have to be treated more at length when we study

the general problem of change and time; what we have presented here is for the purpose of making clear the premisses of our discussion of personal identity.

Such being the general nature of identity, let us inquire how we can prove it to pertain to experience. Now the identity or non-identity of experience is in a peculiarly favorable position so far as discovery is concerned. For it does not have to be inferred or represented, but can be actually found, since the thing to which it pertains, namely experience, is always and alone capable of being found in the sense in which we have been using this term. Now I claim that identity is found in experience. Everybody admits that we seem to find it, that we have an " impression " or " feeling " of it; I claim that this " feeling " is a fact. And I claim that the only reason why it is not recognized to be such is because it is judged to be illusory on the grounds which we have examined and found to be false. It is a fundamental principle in the theory of knowledge that the evidence of experience must be accepted unless proved to be fallacious through conflict with logical principles. And it seems as perverse to doubt the identity within experience as it would be to doubt that the sky which you are looking at is blue. For just as the concept blue has been derived from blue experiences and so must apply to the like, so the meaning identity has been acquired as a reflex of personal identity experiences. It means, aboriginally, a certain feature of experience and so must be true of it, just as blue means another feature and so must be true of that. Of course, one may deny that there is identity within experience, just as

one may deny that the sky which one is looking at is blue; yet it is impossible not to possess the evidence which contradicts these assertions; both the blue and the identity are in the mind.

And we must insist that the identity which we find in experience is not similarity. When we waken in the morning we find ourselves thinking the same thoughts, harassed by the same worries, ardent with the same hopes and plans. You cannot be true to your experience and say that the morrow has brought you similar thoughts and anxieties and plans. The sting and the significance alike of your experience consist in their identity. You know that you are not many selves strung together like beads on a thread, new each day or hour or minute; but one self, the same through all.

The task of exhibiting the range of identity within the mind is now easy. First we have to find the region of mind in which the identity is given. The region in which this is certainly the case is the self. Let us seek the identity in each of the three great classes of self experiences: thinking, interest and feeling.

The tool of thinking is the concept. The concept is a residuum of masses of similar experiences. The act of thinking, judgment, consists of the application of a concept to an object. When the object is new, the application of a concept to it is a novel event, through which the concept is partly changed and enriched; yet not wholly so. For when, for example, I recognize a flower as a flower, there is actually present in the concept vestiges of countless former flower

experiences of which it is a precipitate; and not only is the concept partly identical with much of the past, but the activity of application is also the same. Even when I employ new concepts, it is the one and identical function which energizes; the function is, of course, differentiated; yet it is the same, nevertheless; for there is present in each new judgment the substance of all previous ones. And this identity in a function is given in the mind. Suppose I am recognizing plants: I judge "rose," "lily," "sweet william," each time applying a different concept and judging a different object, yet I feel the sameness of the activity of thinking throughout. This identity in the apperceptive function is very impressive when traveling. During the journey we receive countless new impressions, yet because we recognize them all, employing a single function continually and old concepts in the employment, the experience of personal identity is striking through the contrast with the novelty of the scenes.

Identity is given with equal evidence in the volitional experiences. Take the simple matter of interest. Suppose I start off to the woods to study plants. During the excursion I shall study many specimens; the direction of my interest will therefore be constantly changing; yet the interest itself will remain the same; and the sameness will be given in the interest of studying, just as the difference will be given in the difference of the applications. And when in the morning I awaken with this interest upon me, identity is present there also; for it is the same interest which kept me at my microscope until late at night and the same which has given direc-

tion to my whole life. And in saying that the identity in the interest is given, I mean that not only is the interest actually the same, but that it is experienced as the same, as familiar, and that this sameness and familiarity *are* real identity.

Since desire is a complex affair involving not only interest but also the idea of an object towards which striving is directed, the identity there is twofold: on the one hand within the idea, and on the other, within the striving. Thus the desire for food involves an idea, the materials of which are probably older than any other—some trace of infantile sucking is present. It is understood, of course, that the intermittence of the idea of food in the mind does not prejudice its real identity. The idea in the new setting is, to be sure, not exactly the same as in previous desires, yet it is fundamentally so. And the element of striving in the desire is essentially the same; it has simply re-emerged directed to a new object and adherent to a partly new idea. Again, the awakening of love is, of course, a novel experience; but each new love, although new as love of a new object, contains the echoes of all old flames. The familiar instance of personal identity, the experience of carrying out a plan, illustrates the chief points in our analysis. A plan is first conceived: it exists as a striving directed to an action, that is, adherent to an idea which means that action. Now when the plan is carried out, there is an experience of identity; for there is identity in the experience: the plan enters bodily into the action, the selfsame plan conceived long ago perhaps; the action exists in the mind as the incarnation of the plan, as containing it in its substance; and the striving, the years-

old striving, works itself out and feels itself the same in its new shape as fulfilled. As for emotions and pleasures, they are identical in correspondence with the identity in the strivings of which they are respectively phases and fulfillments.

The fact that in our discussion of personal identity we have not yet referred to memory will doubtless impress some readers. But this is no oversight. The importance of memory for personal identity has, I believe, been exaggerated. Memory enters into the identity of the self experiences in so far, chiefly, as they are connected with imagery. The activities of desiring and thinking are, as we have seen, entwined with images inherent in the ideas of the things thought of or desired. Originally all strivings and satisfactions are embedded in sense experiences; but the latter, in passing, leave replicas of themselves, the store of which is increased by every new experience. Now these traces, although continually being lost, are never lost completely; they are forever re-emerging, and a central core abides. They penetrate the activities, making up the substance of concepts and representative ideas. It is in this way that the activities of thinking and desiring involve memory. But memory in the sense of remembering past events is not involved. For in remembering, the images have a meaning; they refer back to past experiences of which they are a survival. In general, however, images do not represent the experiences from which they have been derived, but are employed away from their base to represent new things. This is evidently true of the concept; the concept does not know the experiences from which its imaginal material came; it knows other

things — the things to which it is applied. The same is true of the ideas employed in desire; their substance is certainly past experiences, but they do not represent their originals; they are given a new intent, a direction to the future. The central peculiarity of remembering, on the other hand, consists just in the fact that the image means the experience of which it is itself a derivative. It is this which gives to memory its warmth and intimacy, so different from the knowledge of past events not belonging to one's own life. The image and the thing which it remembers are, of course, not the same; yet the image is a child of the thing, its duplicate, and the old attitudes and feelings towards it are revived in the remembering idea. In this way the past self is present in the self which remembers. But although remembering is a vivid instance of personal identity, it is by no means the only case of it. During intense work, for example, there may be little or no remembering; yet, because of the persistence of purpose and the attitudes required by the work, there is a large share of identity; and this is experienced — there is a keen sense of it.

So far we have reviewed two regions of the mind in our search for identity: the activities which constitute the self, and the images with which the activities are so closely bound that they are almost inseparable by analysis and are hardly separable in reality. We have found that real identity exists in these regions. But what of sense experience? The complete discussion of this will come later when we study the nature of physical things. Yet there is a phase of the matter which belongs here. For, whether there is identity in sensa-

tions or not, there is identity in certain concrete sense experiences. In so far as the latter are perceptions of familiar things, they contain the images of former experiences of these things; their familiarity is due largely to this source. The presence of these identical images explains the seeming identity in things really new; there is real identity in the perceptions, but the extent of it is misunderstood. Every concrete perception, even if of a new thing, contains an element of identity; for, so far as it is recognized as being of a definite kind, there are present in it revived images of similar objects, on the basis of which recognition takes place. Of course the identity here is an identity in the images and not in the sensations, so that it is really covered by our discussions of the previous paragraph; yet it is so closely connected with sensation that it may well be said to belong to sense experience. This element of identity in perception does not, however, involve remembering. For example, every morning when I see my desk anew, it is familiar to me; I find an identity in it; yet I do not think of occasions when I saw it on previous days; I simply have in mind elements of former experiences, the residua of old memories, which simply are, without representing the former total experiences of which they were a part.

From our development of the subject it is clear that personal identity can be more or less. It is usually greater between phases of experience which are near in time than between those which are remote. The crises of life, like the changes from childhood to maturity, the entrance upon new work, marriage and the birth of children, involve grave

alterations. The persistence or disturbance of the coenaesthesia is supposed to be important; but far more so are purpose, interest, memory. From birth to death there is a continual acquisition of new experiences; a partial preservation of these through the residua of memory; a reemergence of old activities; the loss again of these; the irreparable loss of some; until finally at death the entire structure disintegrates. Permanence and change, adventurous seeking for the new and a tragic holding on to the old or effort to escape the old; self-making and self-mending — such is the life of the mind. Throughout there is the thread of identity; the old man remains in some respects the same as the child. Yet the amount of this identity varies on different occasions. It is great when a man puts all his emotional energy into some task which requires the use of his whole past experience, the total resources of his memory and learning; then, as we say, he is most himself; it is little when, in a light moment of gaiety, he forgets himself, feeding on new impressions. It is great again in constancy and continuity of work and affection, and less in disloyalties and infidelities.

We usually call a man another man when he fails to recognize himself — when he applies to his experience a different concept of self from the one which we have been accustomed to. Since the material upon which the concept of self is based is always our plans, memories, beliefs, the failure to subsume oneself under the same concept of self implies the gravest alterations. Yet identity may exist here as elsewhere, even when not recognized. The application of a dis-

tinct concept of self to the self is an intellectual process of identification precisely similar to any other, the only difference being that the object recognized lies within the mind and so is the most accessible and certain of all objects; yet if the actual identity between one phase of experience and another is not great, the old concept may not now seem applicable. There may still be identity; experience may in some measure be familiar still; yet the strangeness may be greater than the familiarity and there may be lacking the necessary power of discernment in order to disentangle the one from the other. The poor man may not know whether he is Sam Jones or another; and if he does not know, how can we? The changes in the idea of oneself are a good indication of the transformations of one's experience; for the idea is built up parallel with and as a reflex of the process of self-creation and preservation which is life.

Personal identity is, however, no more identical with self identification than blue is with the concept of blue. The most ordinary experiences give evidence of this. When we waken in the morning we feel ourselves to be the same without any overt assimilation of the new experience to the idea of ourselves; the idea may not arise at all. There are times, as we have seen, when the idea of self is in abeyance, as when we work quietly; yet there is a sense of familiarity which pervades all experience and is the abiding identity within it. Yet when the idea of self is in mind we cannot apply it to another self; for its root and substance is just oneself and no other. One's sense or feeling of identity with one's past is thus no illusion or empty boast; for it is the

having in mind of the real identity, however small, between one's present and one's past. The false self identifications of the insane are not cases unfavorable to our view. For there the psychic life is so awry that there is little real identity between the man's present and his past; hence he does not recognize himself. His identification of himself with Napoleon does not, of course, imply any real identity between the two individuals; it is simply a false application of his concept of Napoleon, the ineptness of which the poor man has not wit enough to perceive. Give to him even a little power of discernment and he *could* not make the application.

Let me emphasize, by way of summary, the contrast between my view of personal identity and the ordinary one. Mine is a doctrine of the real identity of the self and the recurrence of its elements; the other is a doctrine of illusion and substitution of elements. According to the latter, the self is never identical with its past, because its elements are continually dying away, yet is always under the illusion of identity, because the lost elements are replaced by similar ones. According to the view of this chapter, on the other hand, the judgment which the self makes about itself is a true judgment; for, although its elements are continually being lost, they are found again; they perish indeed, but not without hope; their death is often followed by resurrection. For us also, the self is a fragile thing, broken by its environment and torn by internal tensions; yet for us, it is capable of mending itself, and with its own fragments.

CHAPTER III

THE METAPHYSICS OF PERCEPTION

THE self, as we observed in our first chapter, is in contact with and interwoven in content. A large part of this content is what is ordinarily called sensation. Now sensation is at least a part of things. If we lay aside all theories of what things really are and consider them only as they are given to us, we find them a complex of sense elements. Take the rose as an example: the rose is given to us a group of sense qualities — red, shapely, soft, sweet smelling. Of course, all that we mean by the rose is not present in sensation; there is the part which is not seen, and there is the prick of the thorns which we carefully avoid. Yet these latter, although not really present in sensation, are so, as it were vicariously, through images. There is nothing of the thing which we ever find that is not a sensation or image.

We open our eyes and are face to face with things. In perception we are in direct contact with the physical world; nothing intervenes. Perception is, first, a contact of the self with a sensuous reality, and second, a representation through idea of other sense elements which might be given. Some sensation is always the nucleus of the perception, but the larger part is a meaning. And last, perception involves recognition — the given sense elements are subsumed under a concept, whereby their relations to other things, their

place in the whole, is fixed. Test this description by the perception of the rose. When you see the rose, certain visual elements enter into the already constituted whole of your mind; they come into contact with other sensations there, with your feelings, interests, and thoughts; forthwith there arise into this whole images which mean further rose elements not given; finally, the structure thus formed is a familiar, a recognized thing — a rose. As a result of this process, the mind is enriched and expanded; it has acquired new elements, and part of its old self has been reborn — sentiments that cling to roses, systems of botanical concepts revive.

Although in perception the self is in direct contact with things, they are no part of it. I find sense elements to be other than myself with the same evidence that I find the identity of myself with the activities. It is impossible to argue this otherness away. Perception is a contact with an alien reality — a chance embrace of strangers, involving no fatal entanglements. Look again to the red of the rose or to its shape and texture. They are not you. And consider how they stand there self-possessed and independent. They have no need of your emotion or of your uncertain judgment and regard. You may interfere with, but you cannot determine, the sense elements which are the rose; they follow after their own nature, not after yours. You may cultivate or neglect, let bloom or pluck to deck your chamber; but what will ensue you will have to learn from them; you cannot determine it for them. If the rose is independent of you, so are you of it. Contact with it may leave you with a vivid

image and no less vivid emotion, but you will go your way much as if you had never found it on your path.

There are, of course, the familiar cases where this otherness seems to be overcome. Yet it is really never surmounted; what occurs is a union of the self with sensation, an involution of the one in the other; but union implies difference, not identity. In the aesthetic experience I may find myself mixed with the blue of the painting or lost in the mazes of its lines, but the poignancy of the experience depends, as in love, upon being intimate with something radically other than oneself. Were the lines and colors a part of the self, there would be nothing extraordinary and startling about the experience. The apparent selfness of sensation is due in every case to the admixture of the activities, and disappears as soon as they are withdrawn. The semblance of activity in sensation is due to the presence of the same factors. Thus lines may vibrate, colors may have vitality — when emotion is felt into them. Perception is never, as we know, the mere existence of a sense element in the mind; it always involves, in addition, the creation of a meaning. The sense elements in perception are recognized, interpreted, employed as signs; but recognition, interpretation, the signitive function are activities which belong to the self. Here, I believe, is the explanation of the subjective idealistic fallacy — it rests on an insufficient analysis of the perceptual experience, on a failure to distinguish the active from the passive elements.

The theory that the unity of mind is due to a transcendental ego may also be responsible for the belief that sensa-

tion is a part of the self. This we have already disposed of in our chapter on The Self and the Mind. But let us consider the matter anew, with especial reference to perception, and let us seek to get at the facts. Suppose, once more, I turn my head and see the rose. New color elements will enter into the already constituted whole of the mind of which the self is a part. What sort of relation will be effected between them and it? Now I submit that if we follow the facts and not some preconceived theory of them, we can best describe the relation as an adjunction, entrance, contact, implying by the use of these terms, (1) that the new elements come from without the mind, not from within; (2) that there is nothing within the mind that can explain their nature; (3) that they come as strangers, possessed of that otherness upon which we have already laid emphasis, possessed besides of their own individuality and identity; (4) that the already constituted whole of mind has no need of them, for when I turn my head away and they leave the mind, it continues to exist without any large alteration.

Of course, as I linger to look at the rose, its relation to the self becomes more intimate; it had already awakened the activities of recognition and interpretation; now it becomes suffused with emotion and interest; it passes into the substance of the self. But the primary relation is adjunction, contact; upon this is based the more interior relations. And no matter how closely the activities may twine about the sense elements of the rose, the latter retain their fundamental otherness and their own individuality and subsistence.

Again, I do not mean to imply that a sense element can come into contact with the self and not, in some fashion, transform it. The modification of the self of the moment may indeed be very profound. Not only are certain activities, like recognition and interest, immediately and almost always evoked, thus expanding the self, but its whole pattern may be altered; certain elements will be driven out, while others will acquire a new prominence. And the change is not wholly one-sided, confined to the self alone; it affects the perceived sense elements as well. The clearness or unclearness of sense elements is a character which accrues to them only as elements of mind; their suffusion with images effects other transformations. For example, through the connection of the visual elements with the images which mean the related touch object, the former may acquire some of the size of the latter — the man whom I see far off may seem to be as large as if I were close to him; or the blue in the picture may seem to be cold through the association of images of cold. But these changes do not involve any loss of identity, or dependence on the self.

Since perception is a contact of the self with sense elements, the association to them of memories, judgments and feelings, and since this relation is of the character described, it is obvious that things do not depend for their existence on perception. Sensations must first exist before they can be perceived. Yet, although independent of perception, sensations are not independent of the body. For example, the quality and form of visual sensations depend upon the structure of the eye. The failure to distinguish the depend-

ence of sensations on the body from dependence on perception is one of the chief reasons, I believe, why so little has been accomplished towards clearing up these problems. Yet the confusion is a natural one, since the perception of a sense element is also dependent on the body — although upon a different part — and is nearly simultaneous with the existence of the element.

The partial control which the self may exert over sensations may also be mistaken for dependence on perception. For in so far as the self has control over the body, it may co-operate in determining the existence of sensations. For example, by directing the adjustment of the sense organs, our interests are factors in the determination of the existence and course of visual, auditory and tactile sensations. But this is not a determination by perception. For, even in these cases, the sensations are first created through the sensory process before they are perceived. Perception — the contact of sensations with feelings and ideas — is an event following upon, but not determinative of, their existence.

Obviously, while sensations are dependent upon the body, they are not created by it. If I close my eye, visual sensations disappear; but the mere existence of the eye will not serve to produce color. And there are functional relations between sensations which, although the body is always involved as a third party, cannot be explained in terms of the body alone. For example, if I put a red shade on my lamp, the hue of all the colors in my room will be changed. Moreover, the body itself — which is also a complex of sensations — is functionally related to other sense elements. It, too,

for example, would change its hue along with all the other things in the room. The empirical physical world consists of masses of sense elements functionally related among themselves, and above all to one part of themselves, bodies. By functional relation in this connection I mean that a change of one is correlated with a change in another, or that the appearance of one is sequent upon the appearance of another. Nothing else is given.

The first objection commonly raised against a theory such as this is that it makes impossible the simultaneous perception by two or more people of the same thing. For how, if sensations, which are never the same in different minds, are the things perceived, is common perception possible? For example, the electric light globe in my mind is elliptical in shape, while in yours it is circular. Or to me who am near, the meadow is green, while to you who are far away, it is violet. How can the same thing be at once violet and green, or elliptical and round?

The removal of this objection depends upon the realization that it is based upon a preconceived theory of things. It is assumed, namely, that the things which we see can have only one size, shape, and color at a given moment; when, as a matter of observation, they possess a multitude of these, as many as are seen from any so-called point of view. The globe is at once elliptical and round, the meadow is at once violet and green, if it is seen so. All the so-called appearances of a thing are real. But there are usually one or more particular aspects, those where the thing can be handled, where it can be brought into bodily contact with the organ-

ism, which, because of their practical importance, are emphasized over all the others and judged real, while the rest are degraded to the rank of mere subjective signs of these.[1] Thus, in order to adjust the globe, one has to act through tactile circular sensations, but not through visual elliptical ones; and, in order to pluck the leaf, one has to act through green touch sensations rather than through violet ones; hence, the former are viewed as real qualities of the object, of which the latter are thought to be mere appearances. But surely all sensations are equally real while they last; practical importance may determine our interest in them, but it cannot determine their reality. Things have no such simplicity as common sense supposes.

We are evidently brought face to face with the general problem of the identity and unity of things. To take the former first: The identity of things belongs, in the first place, to their sensuous substance. Sensations shift and disappear; yet they also reappear and abide. The red of the rose is the same red today as it was yesterday, despite its intermittence over night. In our discussion of personal identity, we showed that an activity may be destroyed, and yet reborn the same. This is equally true of a sensation. When it reemerges, it is changed, but identity may exist despite difference. There is, indeed, no substance in things except that of their sensuous qualities. This is true of all sensations; of a sound or a perfume. The vibratory, and other such facts which men of science regard as the substance behind sensation are only further sensuous elements of the whole, or else

[1] See James: *Principles of Psychology*, Chapters xx and xxi.

mere symbolic images with only a subjective and pragmatic value. The existence of any sensation depends, without doubt, upon the co-operation of countless facts. Yet every sensation is real while it lasts and may come again after it has disappeared.

We cannot, therefore, be said to perceive the same thing in the sense that we are at any moment in contact with the same sense elements. The sensory content of people's minds in perception is always different; in your mind the globe is circular, in mine it is elliptical. Only if you could occupy my position in space and possess my organs of vision could you have in mind the same sensations that I have. Nevertheless, we rightly feel that we are perceiving the same thing; for we are in contact with parts of the same complex object. We perceive the same thing, despite the differences in the contents of our minds, just as we sit in the same room although we occupy different chairs.

Although this identity in the stuff of things is their real identity, we often treat things which are merely similar as if they were the same. For example, when a number of people attend the performance of a symphony, we say that they hear "the same symphony." But, as a matter of fact, the sound contents of their minds are different — different, for example, in intensity and timbre, according to the positions in the hall occupied by the auditors, and other factors. It is possible for the same individual sound to be now intense, now weak, but it is not possible for the same sound to be at once intense and weak. The various people in the hall are therefore in contact with different individual sounds, similar

in many ways, yet numerically different. Is there then no sense in saying that they hear the same symphony? It all depends upon what we mean by the symphony. If we mean by the symphony a universal, a type, then it is true that they all hear the same symphony. The same musical composition, in this sense, can be heard simultaneously in New York and Boston by many different people. But the identical object which they perceive is not a physical thing at all, but, I repeat, an ideal or type. Here, as always, the perception of the ideal and typical takes place through the concrete and individual; the same universal symphony is perceived through the similar, but numerically different, sounds in the minds of the various auditors.

Now, in large measure, the sameness of the object even in ordinary perception is of just this nature. When we say that we perceive the same rose, we do not so much mean that we are in contact with parts of a single region of the physical world as that we are undergoing experiences of the same type. We are seeing the " same rose " just as we are " having the same pleasure " in it. The contents of our minds are numerically different; yet they are similar in various ways, and adherent to them are thoughts which mean a sort of typical rose, which is the schematic invariant of all the concrete phenomena of the rose. Visual perception is a process of at least twofold complexity: first, a contact with some of the visual elements of the thing; second, a representation through idea of the type to which the thing belongs. Even the common thing perceived is, I repeat, largely a type, but a type functioning through actual

aspects of the concrete thing with which the self is in contact.

It may be objected to this comparison of ordinary perception with aesthetic perception that, in the latter, the type or ideal is determined by aesthetic feelings which can acquire permanence through record in a score; whereas, in ordinary perception, there are no values through which a type could be established. There is no standard for rose — or chair — experiences, it may be said. Yet, as a matter of fact, wherever there is identification, there is the thought of a type, and memory plays there precisely the recording rôle of a score; and ordinary perceptions are full of the values of use and curiosity. There may be a difference of precision in the two cases, but only as a matter of degree; and, in the case of the sharply defined types of scientific perception, the advantage is probably with the non-aesthetic. No one knows what the absolutely ideal and typical performance of the symphony is; so, similarly, no one ever gets a complete perception of a thing, ever comes into real or, through representation, into vicarious contact with its infinite possibilities of sensation. What our senses allow us to get into touch with or our imagination to picture is only a fragment. Nevertheless, in our dealings with common things we have pretty definite ideas of some of the possibilities of human experience, and the man of science has ideas of the highest precision; such ideas represent the types of things. The elaboration of these ideas, in order to make them more adequate to the possibilities of human experience, is exactly the task of natural science.

The extent to which perception is more than the mere possession in the mind of parts of existing things, and contains representative elements, is plain when we consider how large a part is played by memory and expectation. When I perceive an electric light I inevitably think of lighting it — that is, I represent a non-existent future action upon it and the sensations which would result; if I am an electrician, I may think of the manufacture of it, that is, of its non-existent past history. Such memories and expectations enter into the thought of the type of things. The type always extends beyond the present, back into the past and forward into the future. The type of things is a complex of true propositions about their present, past and future being. The metaphysical status of these types will be the topic of a future chapter; it is necessary at this point only to call attention to the large share which they have in the object of perception. The object of perception is never so much the actual physical thing as the truth about the thing.

The recognition of the importance of the type in perception has given rise to the idea that perception is largely a falsification of the reality of things — a view maintained by a thinker whose doctrine of perception is very much like our own. But this is a misrepresentation of the situation. It is, indeed, true that the type is no part of the sensuous reality of things. It is also true that our representations of the type are largely determined by practical motives. We represent of the total truth about things only so much as bears upon our life. Yet the partiality of our representations, the human limitations of them, do not make them

necessarily deceitful. It is, of course, easy to mistake the part for the whole, especially where our human conceits are concerned; but the intent of partial knowledge is not to take itself for omniscience. It is also true that a large part of scientific knowledge is expressed in purely symbolic terms or in the form of mechanical images to which no sensuous reality literally corresponds. But it is always possible to translate these symbols into the sensuous experience which is the real object represented. The unwary, it must be admitted, are often led astray into thinking that the symbols picture real objects; but once this error is corrected, the genuine metaphysical truth embodied in scientific formulas and concepts becomes patent.

The theory of things which we have been advocating requires the abandonment of the common sense notion of their unity. This notion has been developed by a process of exclusion and simplification, with the method of which we have already become familiar. Certain aspects or parts of the thing are rejected because they are practically irrelevant, leaving a relatively simple remainder more easily handled by the mind. But, as we have seen, the thing owns all of its aspects, every shape, color, size or other quality that can be perceived. All the supposed conflicts among them disappear as soon as we abandon the notion of the superior reality of some over the others. They are all on the same level, all parts of the thing, falling easily within its wide domain.

But if the thing is so hospitable and inclusive, in what sense is it one at all? Ten people in the room who look at the electric light globe have in mind ten different complexes

of visual sensations; how then can they belong to the one object? The essential unity is that of causality. A single act or process will make them all disappear or reappear. To be sure, one of them may disappear without affecting the existence of the others, as when, for example, I close my eyes; yet opening my eyes will not restore my globe, nor will open eyes in themselves guarantee the existence of the other nine globes. The existence of any sensation depends upon two sets of conditions — one within the body, another outside of the body. The former set is a prerequisite for the existence of the sensation in the single mind; the latter is a co-operating cause of all the sensations in the different minds which we attribute to one thing. That there is a single determinant without the body for all the ten complexes of globe sensations is clear from the simultaneity and inclusiveness of its effect — all at once and together the sensations will disappear if some person breaks the bulb. A thing, therefore, consists of all sensations under the control of a single determinant outside of the body. Or to put the matter the other way round — sensations belong to one thing when they are all under a single extra-bodily control.

There are, of course, certain sensations, such as nausea or those which come from the joints, which seem not to have the doubleness of determination characteristic of most sensations, but, on the contrary, to be determined from within the body alone. Yet careful investigation would prove that even in such cases there is a twofold control, only by different determinants within the one region of the body.

In talking about the determination of sensations we are readily led beyond the bounds of the given. Sensations are given, but the nature of that which determines them outside of the body is certainly not given. Given, as we have said, are only the sensations. Yet, that they are not controlled wholly from within, is certainly given; it is only the what or nature of this control which is not given. Solely by means of hypotheses can we get any idea of this. And the natural hypothesis to make is the one which has been made so often, and which we shall defend later on, that the control is like that which we ourselves exert. For, as we have seen, we do, to a certain extent, determine the course and existence of sensations. I can destroy sensations; I can close my eyes and annihilate a whole group of them; I can take bow and violin and create another group. In the latter case I determine sensations not only within my own mind, but in the minds of others as well. Of course, in neither case am I the sole determinant of what happens; foreign controls must co-operate. But now, the hypothesis is precisely this, that the nature of the co-operant foreign controls is like that which I exert within my own mind, and to a certain extent within the minds of other men. It is some purpose or interest which determines the closure of the eyes and the annihilation of the visual sensations; it is some purpose or interest which determines the existence of the musical sounds. And hence we suppose that, in addition to our own activities, co-operating with, or frustrating, or acting independently of them, there are other activities, not ours, playing with and determining the sensations in our minds.

Just as with bow and violin, with brush and canvas, we may make music or paint pictures for ourselves, so — shall I say nature ? — sings for itself and for us, too, in the sound of the brook, and paints pictures for itself and for us in every landscape that we see.

Does nature contain any other sensations than those which are produced through the activities of the body in co-operation with foreign controls ? Of course, by the nature of the case, none other than these can come within the mind. Yet there are good reasons, I believe, for thinking that there are others. The sense organs, through which the sensations that we know are determined, are special differentiations of a material of like nature with themselves. There is good reason, therefore, for supposing that they mediate only part of the total number of sensations produced in connection with the body. Moreover, the law of continuity forbids us from believing that our sense life is a sudden development, that it has had no history in the evolution of the organism. If we ascribe sensation to the lower forms of life which possess no organs of special sense, we must ascribe the same to the whole body. And the same principle of continuity forbids us from stopping here. The organism is itself an outgrowth of what we call the inorganic world; and consists of exactly the same materials. Hence, just as we infer from the existence of the bodies of our fellow men and of animals to the existence of their sensations, so, it seems to me, we can infer to the existence of further sensations in nature from those which we actually perceive. In both cases we infer from the existence of sensations which we perceive to the existence

of those which we do not perceive. From the existence of an eye — a group of sensations in my own mind — I infer the existence of visual sensations in the mind of my fellow. Nothing else of his eye is given to me or real for me except my own sensations. Well, similarly, I have given countless other sensations — the body of nature, let me call them — and from these, I think I can infer others. Only the tiniest part of the sense world is, I believe, given to us in perception. What the rest is like, we, to be sure, cannot know. Yet we are justified, I think, in judging the whole by the part. The visual sensations which enter into the mind depend, of course, upon the eye; yet I cannot help thinking that when the man of science talks about light he means something more than a symbol for possible human sensations — that his vibrations in the aether correspond with actual sensations like our own. Nature is, I think, full of warmth and cold, pressures and touches and colors unperceived by man, and doubtless full also of countless other sensations of a kind unlike anything which we know.

The hospitality which we ascribe to the thing destroys its reputed seclusion and involves a complexity and neighborliness undreamed of by common sense. Since a thing owns every aspect equally, it does not have the remoteness from other things which is one of the chief grounds upon which common sense accords to it a simple and separate existence. The sun, for example, is not only where science locates it, but also in the intervening space, and at the point where I see it — at the eye. One may, of course, distinguish what is called the real sun from these visual phenomena; but, how-

ever useful this procedure may be practically, it cannot be done without question metaphysically. On the other hand, in view of the actual solidarity of things, one may refuse to distinguish between one thing and another. There is, it may be said, only a single thing, the universe; what are called separate things are only parts of this, isolated by us for reasons chiefly practical. And there is truth in this view, which science, and not metaphysics, has been teaching us for the last century. There is a mutual dependence of sense qualities making of the physical world a single whole. Nevertheless, there are grounds other than practical for distinguishing between one part and another. There is a differential distribution of qualities; here it is hot, there cold; here a sweet odor, there a sour; red and blue are not on the same, but on different points. Such regional differences in the distribution of sensations are real. Moreover, there is greater solidarity between the causal determination of certain parts than of others. There is a greater solidarity between the elements of one organic body, for example, than between those of two; a change is more immediately and pervasively effective within the single body than between the two. This objective unification of things is the basis of the subjective unification of them through the purposes which they serve. The difference between things is a difference in the qualitative pattern and causal interdependence of the elements of the whole. In accordance with its own harmonic laws, the universe composes sense elements in multitudinous figures. Doubtless, there is a basal and pervasive rhythm; yet, just as we rightly distinguish the different phrases in a musical

composition, so we are justified in distinguishing the many parts of the one whole. In our chapter on space we shall study again, for a final statement, the individuality and unity of things.

The doctrine of this chapter should recommend itself not only to the reason, but to the emotions. For what is the thing which you love and cherish ? It is not a heap of ions which you have never seen; it is no bit of extension robbed of color and odor; it is not even some possessor of soul-life too simple for sympathy with your human affections. It is the phenomenal thing which you love; the possessor of color and outline and odor; the appearing thing which you can see and touch and smell. The familiar haunt that you love is not some practical or scientific reality behind that which has given itself to your eye and hand, but the thousand views and perspectives with their every shadow and change of hue. These you love; these you find fair. The dramatic background of our human life, that which enters into emotion, finds record in painting and poem and history, is the given thing, the so-called appearance — which is the reality. And if, as in common sense, you admit the validity of the practical motives in determining the criterion of reality, why should you not admit to at least an equal right the interests of affection and beauty ?

CHAPTER IV

THE RELATION BETWEEN MIND AND BODY

IN our last chapter we studied the relation of the self to the external world given in perception. Another, and to most minds, more striking relation is that of the self to the body. That we should find ourselves in the midst of a bright and sounding and odorous reality, immersed in it, gathering from it satisfaction and sorrow, becomes strange to the reflective thought of certain moods, but stranger still seems the fact that the presence of the self in the world should be conditioned by one small fact in that world — the body.

Let us approach the problem through an examination of the oldest theory in the field, one which today has acquired a new prominence — the instrumental theory.

According to this theory, the body is the tool of the mind. In sawing wood, I make use of a saw — and of arm and hand; the latter, from the point of view of the realization of my purpose, are as much pure instrument as the former. Or in the manufacture of anything, when one's interest is fixed upon the material and the purpose to be achieved through it, the body which manipulates seems like any tool which one might employ. Again, in all desire, which involves the separation of the idea of the end from the fact desired, the body may easily be regarded as just the first link in a chain of means and instruments intervening. Not only the muscular apparatus, but the sense organs also appear to be

interpretable in this way: if I have the desire to hear or see something, eye and ear look like mere means to the end of these experiences. Finally, in the realms of memory, imagination and thought, I seem to live independent both of the body and of sensation; yet when I desire contact with the sense world, the body is there for this end; just as the musician, tiring of the music which he hears in his dreams, may employ a lyre upon which to execute heard melodies.

Yet if this be the relation of the body to the self, the query is inevitable — why is the body necessary at all? If the soul can manipulate the body to its ends, why cannot it make use of things with equal directness and without the intervention of the body? This question arises not only in the minds of objectors to the theory, but in the minds of its advocates also. The body seems to be a pure superfluity. The possibility of a naked action upon matter and an existence independent of the body haunts them in their dreams. And so this conception, instead of making the relationship more perspicuous, excites a new wonder.

An indispensable tool would seem to be something more than a mere tool. We know of none other that cannot be duplicated. A tool which another cannot use is again a unique instrument. Why, we ask, is this particular soul tied to this particular body on pain of inefficacy? For many of our purposes the body of another would be a fitter instrument than our own, why, then, if it be a mere tool, can we not use it? And, last, a tool is something which the user makes; but no man has made his body. The individual is endowed at birth with structures preformed for the exercise of func-

tion. As the function is exercised these structures develop, the development being correlated with the refinement of the former. But never does the function manufacture its organs. Only recently are we beginning to understand the mechanism of the body; yet with all our knowledge we are incapable of constructing its simplest forms. It is absurd, therefore, to suppose that, previous to the acquirement of this knowledge, previous even to birth, we could have constructed it. Plainly then, if the soul has built up the body, the soul must be a larger and wiser being than the man whom we know. And by the soul as a builder is usually meant such a wiser force. This force, we are told, constructs the body for the use of its offspring, responding always to the latter's needs. Hence, the individual, as we know him, always has instruments ready at his service. We sometimes find, already constructed by another, just the tool that we require. The relation between soul and body may be an instance of this. Yet this proffered solution of the difficulty only pushes it back in time, but does not solve it. We now put the query to the constructive soul — why have you tied your creature to his instrument ? If you yourself could act directly upon matter, why cannot he ?

A part of the difficulty may be removed by admitting the large sensuous element in the soul's life. After all, the primal interests of the soul are not in things, but in the body, and the fundamental values are immediately realized through the activities of the body, not in things lying without the body. The activity of eating is the animal's original good, not the preparation of food; the satisfaction of sexual craving, not

the courting of the female. The animal first moves in order to move rather than to attain anything through moving. It does not eat in order to live, generate in order to perpetuate, move in order to appropriate; but eats, loves and moves, for eating, loving and moving. The original locus of all interests is the body; the interest in external things is derivative, being transferred from the body. That which co-operates in bodily satisfaction acquires irradiated values; because in order to eat I must have food, and in order to love I must have an object, these latter become radiant; they have no value in themselves, but only through needs, which are bodily. It is not strange that the energies of the soul are spent chiefly in protecting, housing, clothing, feeding and finding a mate for its body, since the body's activities are the direct source of most of its satisfactions.

Hence, to the question why the soul is tied to the body, one might answer, because its interests are primarily in the body. And by body we mean, of course, not the hypothetical system of atoms constructed by the scientists, but the sensuous reality given in our experience. Just as different instruments are assigned to different people in an orchestra in order that they may make music of various colors, so particular bodies are given to souls in order that they may realize the values potential to their activities. The constructive soul, we may suppose, makes the body in order that the individual man or woman may use it to obtain the unique satisfactions which it affords.

Even viewed from this angle, the instrumental theory is not free from difficulties; for this one at least remains, that

in order for a thing to be given as a tool, a user must already exist; but the self does not pre-exist to the acts of its body. The interests which are attached there cannot exist separately. There can be, for example, no satisfaction in movement unless there is movement, and no desire to move unless there is a commencing motion; and the self can have no idea of these experiences — and *a fortiori* no desire for them — before it has possessed them. So far, therefore, as the corporeal interests of the soul are concerned, it would seem to be misleading to think of the latter as a musician playing upon the body as an instrument; because, once more, the soul does not exist at all until the body is set into action. The player can exist without his instrument; but the soul does not exist without the body.

In a larger sense, however, it is not true that the musician exists apart from his instrument. Take from him his violin or his piano and his musicianly self is gone. The playing of the instrument is himself. And this is true of every use of tools. When the workman puts away his tools, he leaves behind a part of himself; we do not see this so clearly in the case of the artisan as we do in the case of the artist, because more of the man's self is in the latter's work than in the former's. It is not true, moreover, that in all cases one instrument is as good as another, for neither the materials nor the tools of the artist can be exchanged. In so far, therefore, as each self is unique, its body, as the instrument of its activities, must also be unique. The use of this tool is the man — without it, he is not. Hence, only in the larger sense of medium of expression is the body a tool of the self.

The difficulty in the way of accepting this last view, so close to unprejudiced habits of thinking among the people, arises from the artificial, "scientific" conception of the body. That the soul, a passionate thing, should be tied to a swarm of atoms imaginable only by the most attenuated thought must always remain a mystery; but when we come to recognize that the body is what we find it in our experience — a sensuous congeries, warm and hot, straining and relaxing, moving and reposing, this strangeness disappears; it is then no longer wonderful that the self should be bound to that in which it is chiefly interested. For example, the movement sensations of the dancer are elements of her very body's motions; it would be absurd, therefore, to consider her limbs as mere external instruments of the dancing experience, when they are not something other than it, but a part of it, the rest being the values in dancing, which certainly could not exist previous to the dancing.

The instrumental theory, as ordinarily conceived, is thus inadequate to the facts of the lower soul-life, and could never have grown out of reflection upon them. For there the soul is so immersed in the body that it could not conceivably exist without the latter. So true is this, that spiritualistic philosophers from Plato downward have sought to minimize or reject this part of the soul, and have founded the instrumental theory on the consideration of the higher soul-life of memory, imagination and thought. The roots of the theory in this region might profitably be traced from Plato through Plotinus to Bergson in our own time. In the view of all these thinkers the higher soul-life is essentially distinct from,

and independent of, the body, making use of the latter only as a tool for the purpose of acting on the sense world. With Plato, who was near enough to common modes of thinking to perceive the necessary connection of the lower soul-life with the body, the theory was a part of that dualism between the lower nature and the higher which persists among all his intellectual children. It is in the higher region, therefore, that the final test of the theory must be made. Let us, then, proceed to study it there, confining our attention for the moment, however, to those facts upon which the higher life is based.

On the way to the higher soul-life stands the image. The image is obviously the basis or material of all imagination, thought, purpose, and sentiment. The image has a double relation: on the one hand, to the sensation of which it is a derivative, and on the other, to the brain on which it is somehow dependent. If considered with reference to either one of these alone, it is incomprehensible.

The image is obviously a duplicate of sensation. In the image the sense world is mirrored. But the replica is no exact copy. The differences between the two are commonplaces of observation; what is important for us is the secondary character of the image in relation to sensation, which is plain alike from the differences and the resemblances between them. There is nothing in the image which is not in the sensation; there are, of course, combinations of images to which nothing in the sense world corresponds; but there are no such elementary images. The image is posterior to the sensation; unless a sensation has preceded, there is no image.

Invention is no exception; for the elements of a plan are based on sensations antecedent both to the plan and to the thing constructed in accordance with it. The image is also dependent in a third respect, evident at once in the plan and in memory — it demands fulfillment in sensation. It is the intention of the image to lead into a sensation of like quality or to offer itself as a substitute, confessedly poor, of a sensation; the latter being the case with memory, the former with volition. The memorial image has value only in the absence of sensation, the plan or expectation only until realization.

But the whole sense world is not imaged. Only so much as is perceived, and even not all of that, is mirrored. Now in the process of mirroring the brain is somehow concerned. This is the strange thing. The dependence upon sensation is easily comprehensible — we can understand how the reflection presupposes the object reflected. But the image does not mirror the brain. The facts are these: The brain mediates integral reactions of the organism to the sense world; these reactions with the values attendant upon them are thus brought into contact with the sense elements; such elements are said to be perceived. Nervous processes which have once mediated the perception of a sense element may, when stimulated to like activity in the absence of the sense element, be accompanied by an image of that element.

Now the instrumentalist claims to have an explanation of these facts. To the question why the image, which is admittedly heterogeneous with the brain, should be dependent upon the latter, he answers, Because it is the purpose of the

image, as we have just seen, to lead back to sensation, and to this end the body is useful. Volition is the clearest case of this. The plan, an imaginal structure, demands fulfillment in a sensuous reality, and in order to complete itself therein makes use of the motor mechanism of the brain. The brain is a motor mechanism, the purpose of which is to realize ideas in the sense world.

From the fact that the brain is only an instrument for the realization of ideas, it is inferred that they must be capable of existence independent of it. The user is not dependent for his existence upon the tool. This, as we saw in the discussion of the lower soul-life, is the premiss of the instrumental theory. The case of Bergson is typical. The idea, he asserts, has a double mode, on the one hand speculative — "pure memory" — which exists independent of the brain; on the other hand practical, anticipating and leading into action, and dependent on the brain for just this realization. The practical character of the image is the key, Bergson asserts, to the relation between mind and brain. There are obviously two points to be considered here: the alleged independent existence of the image and the purely practical relation to the brain. Let us study the former first.

A man who tries to find his way out of the woods is guided by memories of the spots passed on his way in. One place recognized suggests another in its vicinity, and by following these suggestions, that is, by ordering his conduct in accordance with these images, he succeeds in his effort. If the search for the way out is difficult and the situation anxious, his mind will be entirely filled by the images — no other

memories will be present. Here is a typical example at once of the apparently instrumental character of the relation between image and body — for the image seems to guide the body much as a hand might guide a tool — and of the practical character of the image itself. Let us study this example in terms of our problem.

In the first place, the suggested images which guide our huntsman's steps seem to be brought into existence by the associative process, which at every point is controlled by the immediate practical purpose involving the body. No one would deny, I suppose, that their emergence into the mind depends on the purpose in hand. But how do we know, it may be said, that they did not pre-exist and are not simply selected for use at this particular vital juncture ? Well, first of all, there is no evidence of their previous existence. Some of the images, the simulacra of objects seen for the first time, will be new to the man's mind; they will appear on its surface with the freshness and uniqueness of a new ripple on water; hence their power of existing apart from this mental context cannot be tested. On the other hand, some of the images will be old ones; they will be familiar; and by reappearing will show themselves capable of a certain independence of special mental structure. Yet how could one prove that they continued to exist between the old and the new appearances ? Only by the actual discovery of them during this interval. But plainly the man himself could not discover them. And no one of his friends could. For, although another man might have images of the same objects, he could not have the same images. Images are peculiar,

personal, private. They have a common reference to identical objects; but they are not themselves common.

Yet one might grant the individuality of imagery and still maintain its existence independent of its appearance in the mind. Every experience of an object may result in the creation of an image of it which exists independent of any mind, yet accessible to one mind only; each person thus possessing a storehouse of images into which he and he only can enter. The individual brain would be just a key, as it were, to unlock this chamber; but would not in any way be capable of creating it — just as the senses do not create the sense world, yet give access to it.

Yet a simple reflection suffices to show the ineptitude of this supposition. It is enough to examine the image itself to discover that it has no status independent of the mind. The image is part of an intention; it possesses a function — reference to an object; this intention is a mental act. It has no self-sufficing being, such as a sensation has. It serves, as we saw, either to lead into a sensation — volition — or to substitute itself for one — knowledge. But both knowledge and action are functions of the self.

But does the functional character of images and the consequent dependence on mind prove dependence on the body? I think so. The instrumentalists admit this for the practical side of the higher soul-life. Since the use of images in action depends on the body, and since, as we have seen, they have no existence apart from this use, their dependence on the body is made out. The body in its relation to the environment sets every practical problem. We have

already shown how the interests are bound up with the body. And the practically available imagery is determined through these interests. Take the illustration of the huntsman in the woods. His interest in feeding his body determined him to enter the woods; and the practical problem of getting out was determined by the presence of his body there. This presence determined his sense experience, through which, in terms of the problem of getting out, the images of the route back were suggested. Now each one of these images is either of a useful movement or of an object towards which it would be useful to move. Hence, their relation to the brain is clear: they are accompaniments of brain processes which either set up useful movements or tend to do so. The intent of every practical image is to place the body in a more favorable relation to the environment. In fine, the body does not exist for the sake of the image; rather, conversely, the image exists for the sake of the body.

Similar to the instrumental theory of the relation of the image and the brain is so-called interactionism, the passing examination of which, will, I think, throw light on our problem. According to interactionism, the image depends upon the body for its existence, yet, once it is there, intercalates itself between stimulation and reaction, guides the latter, and so has the value of a real causal element in the vital process. The teleological reactions of the organism, in particular, are causally dependent on the functional image. The interactionist no more thinks of the image as being independent of the body than we do. In this he differs radically from the Platonic instrumentalist. He simply claims for the image

the same sort of efficacy as is possessed by any organ, say by the stomach or eye, which are produced by the organism as a whole, and are incapable of existing separate from it, yet, as constituent parts, enter into its causal economy. The functional image is responsible, it is claimed, for two characteristics of conscious behaviour: the association of old reactions to new stimuli either contiguous or similar to the old (learning), and the combination of old reactions into new ones (invention), always in the direction of dominion over the environment to the end of self-preservation. No mere machine could exhibit behaviour of this kind, it is claimed.

The examination of experience seems to confirm this view of the situation. In all voluntary action the idea of the end precedes and seems to determine the activities of the body. The idea of the point to be reached, for example, precedes the steps of the huntsman at each part of his journey, and his steps are taken in accordance with it.

Yet, interactionism cannot be established on the basis of these arguments. The impossibility of explaining the behaviour of the conscious organism on mechanical principles does not prove that consciousness intervenes as a cause. It proves only that the living and conscious body possesses the capacity for acting in a fashion other than mechanical. The limits of this capacity cannot be established *a priori*. The sufficiency of the mechanical principles for the description of nature is a hypothesis which is highly probable in the inorganic world, but so far not established in other fields. And the apparent intervention of the image between stimu-

lation and reaction is not proved. Indeed, if we take into account not merely the gross acts of the body, but all the preparatory phenomena, the idea appears to be rather a formulation of the action which the body is already beginning to undertake, and of the end to which it is even now tending, than a precedent and separate fact.

That ideas are not transitively causal in their relation to the body, as the interactionist maintains, can, I think, be made plausible by the following argument. It will probably be granted that if we can prove this for ideas in their purposive function, we can do so for all ideas. Every purpose is a formulated desire, one that has become aware of the object which would satisfy it. This awareness of its object distinguishes desire from simple impulse or instinct, but does not itself constitute desire; for the mere knowledge of an object does not make it desirable. Hence, more accurately, purpose is impulse upon which has been engrafted, in its service, an idea. Let us now study each of these elements of purpose and ask ourselves whether or not their relations to the body are transitively causal. This is certainly not true of the idea taken abstractly in its cognitive function. The idea represents the goal to be attained and possesses proleptically the experience which will give satisfaction; but, of itself, it cannot create that object or bring to pass that experience. And a mere knowledge of an object certainly cannot move and direct a brain and muscular apparatus to any action. The knowing idea, if taken in abstraction, is representative of its object, not dynamic to the brain, of which it is completely ignorant. But now, if we consider the

other factor in purpose, impulse, we find that in itself it, too, is not dynamically related either to the thing desired or to the body. For, instead of standing over against the body and then impelling or dragging it to action, desire presupposes a definite state of the body in order to exist. The impulse for food, for example, is the expression of hunger — but what is hunger except a certain state of the body? Would hunger be possible without a body? Any one who answers in the affirmative shows that he is still an adherent of the theory that the body is a heap of atoms inaccessible to direct experience. But as soon as it is recognized that our experience of the body is the body, it becomes as absurd to think of hunger without a digestive organ as of motion without a thing which moves. The interaction theory sins in the same way as the instrumental theory — in thinking that desire can exist without the organs of which it is an expression. Hunger cannot react with the body, for it possesses no substantial reality apart from the body. It arises as a phase of certain bodily conditions, varies with them, and necessarily ceases with them. It is an expression or aspect of them, not a cause of them.

Let it not be supposed that we here fall into contradiction with ourselves; that, in order to refute the supposition that the soul could exist apart from the body, we urged the functional character of ideas; whereas now, in order to refute the interaction theory, we assert that ideas do nothing — are functionless. We are not denying the functional character of ideas; we are rather assigning to them their proper function. The idea is functional only when penetrated by a

desire; it represents those objects which would satisfy desire; but desire is itself a function of the body. The idea, therefore, expresses the body's action just as desire does, and so does not stand over against the body interacting with it. Yet the idea is not functionless simply because it does not enter into causal relations with the body; for by representing the objects which would satisfy desire, it affords premonitory delights, and, in the truest sense, enlightens behaviour. And it is also not ineffective; for the desiring, planning body is the integral fact which stands in causal relations with the other facts in the world. The idea is, indeed, effective, but only through its organ of expression, the body.

A person who rejects interactionism is usually found to uphold the theory called parallelism. But parallelism is, I think, equally unsatisfactory. According to this latter theory, a purposive idea is a mere passive accompaniment of the body's action, totally ineffective. But every one knows at first hand that this is not true. Its plausibility rests wholly on the materialistic reconstruction of experience, the artificiality and baselessness of which we have already referred to. Of course, once you conceive of the body as a system of atoms, it becomes impossible to understand how the mind can control it. On the other hand, just as soon as you recognize that the body is what it is found to be, all the objections to the control of the body through ideas fall away, and the testimony of experience forces acceptance.

It might, however, still be urged that even from the standpoint of our own theory of the physical world, ideas and

their bodily expression are too dissimilar to allow of the kind of unity which we suppose to exist between them. For could there be anything empirically more heterogeneous than an idea and the cell-bodies, neurones and dendrites of the brain? But two things must be borne in mind in this connection: first, that even these are sensations, are just the visual phenomena which we discover them to be, and second, that they are not the immediate means of expression for the idea, but rather facts in the mind of the observer, connected indeed with the action of the ideas in question, but only indirectly through the body of the observer and the intervening physical world. The direct medium for the expression of ideas is the body which adjoins the experience of which they are a part; the rest are indirect expressions. And, of course, we are far from maintaining that a purposive idea and its medium of expression are identical — there is no identity anywhere between a function and its medium; we claim only that they are here, as elsewhere, on the one plane of experiential reality.

Our disproof of the ordinary instrumental theory and proof of what we may call the expression theory will remain incomplete until we consider the most exalted of the soul's activities, the purely cognitive. Even Aristotle conceived of reason as something almost supernatural. And today, as we have recalled, Bergson believes that "pure memory" exists independent of the body. The basis for independence is the asserted non-practicality of these functions. The body exists for the sake of adjustment to and dominion over the environment; hence, to use Bergson's case, a mental func-

tion like reverie, during which the individual surveys his past, not with the purpose of learning a lesson for the future, but just to get a vision once more of deeds once lived, can have no need of the body; such an act, being purely theoretical or aesthetic, involves, it is said, no adjustment and results in no practical mastery. Even as the past itself is removed from our action, so a vision of the past, when entered upon simply for its lingering charm and interest, has no practical reference. Along with the denial of the dependence of such mental acts on the body, Bergson asserts their existence independent of consciousness. A man's whole past, he believes, exists in images; but only a small number come at any moment into the light of consciousness; and those that do appear there are for the most part invoked because of their utility; they use the brain as an instrument — they cannot act without it; the rest have no brain correlatives — they are inactive.

We have already said something against the existence of images independent of consciousness; yet that might be considered insufficient, since no reference to explicitly non-practical images was made. But the same arguments apply generally. The image always appears in the mind impregnated with an act; it is always the vehicle of a meaning and the embodiment of a feeling. Apart from its representative function and emotional significance, it has no standing in reality. As we have shown, an image does not stand on its own feet as a sense element does; it is always retrospective of or transitive to something else. Even in free imagination the image is there to picture a fictitious sensuous reality. And

in memory the image represents the past; it voices a historical truth; it does not offer itself. A cognitive activity is no less functional, no less active, than a practical one. Hence, the supposition that an act can exist apart from consciousness is meaningless; for consciousness is nothing except acts and the sense elements with which they are in contact. And to suppose that some acts, the memories, can be split off from the rest is like supposing that one could cut off a limb and keep it alive. Bergson makes the mistake of conceiving memory as a passive review of objects, when, as a matter of fact, it is a living development of one activity out of another. There is nothing more intimate than memory, nothing that penetrates so far into the soil of feeling and striving. Every vision of the past, no matter how seemingly static and purely pictorial, is born of some mood or desire.

The same organic relation to the self which we have claimed for memory is true also for thought, even in its most speculative and apparently non-practical reaches. That there is apprehended by thought a reality independent of any one's thinking, and by memory a reality independent of any one's remembering, can be maintained with some plausibility, but that the thinking and remembering of the individual man is not his, not an inseparable part of the self, cannot be supported by any arguments. Thinking is an activity; it fulfills a striving and is itself a meaning even when divorced from practical motives fixed by the body's relation to the environment. There is no thinking without the purpose, the will to think. But the activities are identical with their being lived, with the consciousness of them;

there is, as we have argued at length, no difference between an act and the consciousness of an act. And to suppose that activities could be split off from the rest of what at any moment we know as the self is, we repeat, to ignore the living integrity of the self and the interwovenness of its acts — their relativity to their cues and occasions. We, of course, do not claim any occult unity for the self — merely that which is possessed by any highly organized animal body.

We do not deny the non-practical character of much memory and thought. The mind, like the body, in large part — certainly in by far the largest part — is developed with reference to the external world in order to dominate it; yet there are internal relations of part to part within the organism, and even developments of single parts which only remotely have this reference. The mind, like the organism, is a little world by itself, and so, to a certain extent, ruled by its own laws and possessed of an independent career. Yet we claim that, except in the pathological conditions of dissociation, perhaps, the various acts of the self are so interdependent that they cannot exist separate from their world.

It might seem, however, that even if we have proved the impossibility of the existence of the higher acts beyond consciousness, we have not proved their dependence on the body while in consciousness. Yet the dependence of the higher soul-life on the body follows from what we have already established. We have shown that the lower soul-life is dependent upon the body because it expresses the body, and the practical life of ideas because they serve the body.

Now no one would deny the close relation between the higher soul-life and the lower. Both are parts of the one mind. Hence, whatever affects the lower part of the soul in its connection with the body affects the higher, and nothing can happen in the higher without affecting the lower and so coming into relation with the body.

Yet a doubt may still remain; for might not this relation be expressed by some sort of interaction theory? Might not the lower soul-life in its attachment to the body be connected causally with the higher, although the latter had no physical expression? Thus the soul would have an extension, an upper story, as it were, raised above the physical world, yet connected with it through the lower foundation upon which it rests. Influences would pass from one to the other. The intellect would use the motor organism for the expression and record of itself; and disturbances arising from the lower soul would propagate themselves higher. Yet the intellect itself would be free of the body.

The interpenetration of the parts of the soul forbids, however, such an interpretation. The speculative and the practical are only two directions of a single function, and the bodily contacts which make the latter possible are not broken, but only less active in the case of the former. Every idea, as we have shown, is the reflex of a sense experience, essentially corporeal in its origin, the expression of some bodily movement and adjustment. In its original phase, the idea exists to guide the organism back to such an experience — the memory of some scene of vivid enjoyment leads us back to enjoy it once more. Apart from the longing

and motor tendency to return, the idea would not arise. The idea is not self-sufficient; it demands fulfillment in a sense experience of the same type, and expresses just this incompleteness. But oftentimes the reinstatement of experience is impossible. Does the idea then cease to exist ? Not necessarily. A failure to adjust the organism to the environment in any given direction need not spoil the function concerned; it may simply be the means of turning the energy inwards. The tendency to return to the scene of our illustration will continue to exist and become active when the proper cues are provided, even when no successful issue in behaviour occurs; and with the arousal of the motor tendency the desire and the idea which are its expression will recur: only they will now exist in a new form; they will have become a mere memory of the scene — a pure memory — practically ineffective. And to this fruitless image will be attached the values which would have accrued to the reinstatement of the experience which it means — the sunny joys of activity will be transformed into the moonlit delights of contemplation. And so the speculative grows out of the practical: we build in the imagination that desired thing which we have failed to keep or create. Yet, in emerging from the practical, the speculative cannot free itself from the bodily attachment which is clearly necessary to the life of the former. The original total thing is the plan with the motor aspect; now the plan cannot be transformed into the speculative idea, since the whole thing is a unit, without a transformation of the bodily aspect of the whole; least of all can the plan free itself from the body. The continued de-

pendence of ideas on the body is evident once we reflect that ideas become speculative because of events and circumstances in which the body plays the deciding rôle. Every idea has originally a practical intent; the purely speculative idea is an aborted plan; but all practical failure is due to the body in its relation to the physical world.

Not only are the higher activities a development of the lower and practical and so bound to maintain the connection with the body possessed by the latter; they are always implicated in the latter. The higher soul-life is no separable phase or upper story of the mind, but a later growth which, even when soaring highest, keeps its roots in the lower. Consider beauty and affection. A purely non-corporeal affection is an abstraction, not a concrete reality; torn from its sensuous root, it withers and dies; this is true, not only of passionate love, but of quiet friendship, which also requires bodily presence and the interchange of word and act. The aesthetic interests, despite all their spirituality, depend flagrantly upon the interfusion of subtle organic values; it is the balance between spirit and sense which gives them their pre-eminence, the clear and equal participation of body with feeling and thought. Finally, there is no purely speculative activity. Every philosophy expresses the emotional and striving life of the philosopher; even when standing in apparent contradiction with his ostensible acts, it is in secret agreement with some part of his nature which virtue or fear or circumstance has kept him from living out — the radical thought of the conventional man has another ground than pure reason. And if we take practical

in the truer and larger sense of including all that has reference to effectiveness beyond the individual mind, then all soul-life is practical. There is no idea or emotion, however attenuated, which does not crave expression, communication, a career in the wider world of the fellow mind. But expression and communication involve the body. And thought and feeling do not first exist and then use the body as an instrument for expression; for an activity and its expression are one fact. Thought does not begin to be without some incipient expression. And it is not the fancies and thoughts of the man of genius alone that crave expression; there is no vision of the past held by any common man, and no one of his dreams, that does not yearn for relation, and, in devious ways, affect his conduct.

Thus the dependence of the mind on the body has been shown to be complete.[1] The body is the soul's expression, its indispensable tool, without which it is not.

[1] Further problems connected with this dependence are studied in Chapter x.

CHAPTER V

TIME

EVERY phase of reality which we have investigated so far, the self, the body, the external world, is pervaded by change.

Being so fundamental a property of existence, change is naturally thought to be simple and unanalyzable. Yet an attentive examination reveals three indispensable aspects. Change involves, first, the coming in, rise or emergence into existence of something new, something which was not before. Every alteration or development is an illustration: a body moves into a new point; an organism passes into a stage which was hitherto not its own. Although perfectly clear as a mark of direct experience, this is often only grudgingly recognized. People try to minimize it by seeking to break the new into smaller and ever smaller increments, even into an infinite multitude of them, yet the fact of increment remains — creative steps are made.

Plainly the new which comes to be does not rise into a void, but into a space already there, into a world already old. Here is the second moment of change — the persistence of a core of reality upon which the new is grafted. This abiding aspect of the changing thing is usually called " the thing which " changes. In the self we have the most direct knowledge of the combination of new and old, of identity and diversity, essential to change; for there, as we have seen,

new sensations and new images, new interests and new emotions, are developed out of, and woven into, purposes and attitudes that endure.

Third and last, change involves disappearance from existence, disintegration, loss. If we did not know this independently, we could deduce it from the moments of change already cited. For the new, by breaking in upon the old situation and giving to it a new element, necessarily destroys it. When c enters, the old whole $a+b$ passes away; for it has become $a+b+c$, and its several elements have changed in adjusting themselves to the intruder. But the devastating effect of change is not confined to the destruction of old totalities; for the very elements of the old may pass away. The light which I see may " go out "; the thought which I now entertain may leave my mind; the man may die. This aspect of loss in change is as absolute and indefeasible as any other. You may seek to minimize it by reducing it to small steps, just as you did with growth, but you cannot eliminate it; however small or gradual, even if infinitesimal, it nevertheless remains. Yet loss, like novelty, never covers the entire field; loss is always a loss from something; passing is always from a permanent. And just as creation involves destruction, so destruction involves creation; for every whole, in losing an element, thereby becomes a new one.

The three moments of process are present together in every individual of the world; yet in varying degrees. In some individuals, creation is especially intense; in others, rest; in still others, loss. By reason of this, the elements of reality acquire an order, the so-called time-form. In the

song — to use the familiar example — there is always a note which is just coming to be, another which lingers, a third which is dying away. The direction of this order is towards the individuals where there is most creation of the new and away from those which are passing. The new comes before the old, the old before the dying; the novel enters, becomes familiar, and then is lost.

The fact of coming and going differentiates the time-form from every other structure, making it unique and irreducible. In a static series, like that of the letters on this page, there is also variety and unity, but there is not novelty and losing. There, each element has a distinct and unique place, but all places are filled, and there is no passing of one and rise of another; here, elements enter into places left vacant by others, the newcomers crowding out the old. In the eternal and static, all things can conceivably be known together; in time, acquaintance must proceed from one to another — a thing must enter a stranger before it can depart a familiar friend.

The co-presence in one whole of elements, permanent, rising and perishing, may seem to raise a problem. For if they are all co-present, they must co-exist; hence, at any least moment, it may be said, they must either be all static and changeless, the ultimate constituents of the rising and perishing elements being on a level with the rest; or else, in the whole which they form, existence and co-existence, two contradictories, must be peacefully united, the transient elements keeping their unique character. Yet neither of these alternatives is possible; for, on the one hand, change

cannot be made out of a succession of static states, and, on the other, two contradictories cannot be united in any given thing. We have a direct intuition at once of change and of the certainty of the principle of contradiction.

This difficulty arises from a poverty of categories. We must distinguish rising and perishing from non-existence; we must recognize that existence has three temporal forms: the permanent, the growing, the perishing. Even the dying is not the dead, the absolutely non-existent. Existence and non-existence can no more cohere than any two other contradictories can; yet in the same thing, in the same least moment of reality, creation and decay are present together with the permanent, just as color and extension and hardness co-exist in the same physical object. Becoming and passing must be recognized as ultimate categories, sub-forms of the existent, on an equal footing there with the permanent.

Still, it is sometimes thought that you can reduce transition — coming to be or passing away — to existence and non-existence as simpler and more ultimate categories. That which is coming to be, it is said, is that which both is and is not yet; that which is passing away both is and is no longer. Thus, when a child becomes a man, it might seem that as a child, he is, and as a man, he is not; and yet, in becoming a man, he must be both what he is and is not. But clearly a thing either is or is not. The difficulty comes from a failure in analysis. No distinction is made between an ideal thing which does not exist, yet may come to exist or have existed, and the real moments of process which alone exist. In the case of our illustration, only the tiny present

moment of growth, a flare or flash of becoming, exists; whether it is called a child or a man is somewhat arbitrary, depending on whether there are more of the childlike or the manly qualities in it; for if the child is becoming a man, he must have both; but the man which he will become, and equally the child which he has left behind, are only expected or remembered things, purely ideal, which, as gone or as not yet realized, simply do not exist at all.

The recognition that the new always grows out of something relatively permanent obviates another difficulty which has confronted men in their efforts to understand change. Time has often been pictured as a flaring up of existence followed by an extinction, which is then replaced by a new existence, and so on. The whole world had to be annihilated, it was thought, before anything new could arise. Then, of course, the problem became acute as to how out of nothing something could grow. But the entire conception is false. There is always something which exists, as we have seen, out of which the new is born; becoming springs from being, not being from non-being. How the new springs out of the old we do not here inquire — that belongs to the topic of causation — we simply call attention to the fact that it grows from the old. Change should not be represented by a series of totally different elements like *a*, *b*, *c*, *d*, . . ., but rather as *a*, *ab*, *bc*, where the *a's* and the *b's* are identical and not merely similar.

Thus far we have made no reference to the so-called parts of time — past, present and future, and for the reason that, at its lowest development, the temporal experience does not

contain them explicitly. Yet the beginnings of them exist there. The dying elements contain an incipient pastness, the enduring ones are the core of the present, while the new, the rising ones, are oriented in the direction of the future. Novelty is the mark of the future, familiarity of the present, loss of the past, all of which are contained implicitly in the immediate experience of change. For the full development of these distinctions, however, reflection is required. Through memory and expectation, the given present experience must be conceived to be related to two realms which, while not belonging to it, may nevertheless be represented, or vicariously contained, in it. An element as it goes leaves the memory of itself. In so far as this abides in the direct experience and endures, it is, of course, a part of the present; yet it looks to the element which leaves it, represents it, and places it in the ideal region which we call the past. Again, when an element recurs, the memory of it, meeting it on its return, being fulfilled in it constantly, becomes an expectation of it. As a part of direct experience, as given, the expectation is present, but what it means, that to which it looks to fulfill it, is not given, and hence is conceived to belong to another realm — the future. Thus the development of the concept of time involves the possibility of representation, of memory and expectation.

If our account is correct, it is clear that any attempt to find in the given experience of change all properties of the complete temporal concept is futile. The distinctions of past and future are not contained explicitly in the elements which belong to the specious present. In the change-

experience, as, for example, in the melody or line of verse when read, there are, to be sure, earlier and later, coming and going; one element does not occupy the same place as another in the temporal sequence and one is more forward or more backward in the temporal direction; but there is no "gone," no "lost." When I hear a line of verse, taking it in at once, the first words are not "over and done with" at the moment when the later ones arise; they are simply behind and fading, but not faded, passing, but not past. We experience pastness completely only when we reflectively experience loss. Awareness of differences within the specious present, or even of a change of these, does not suffice for the experience. Elements must be represented as absent from the specious present, as excluded from all that we immediately experience. The exclusiveness of past and present is, therefore, not at all comparable to that of one point on a line with reference to another. For there, although one point is different from another, both belong to the same universe of discourse; while in time the two elements exclude each other from the same realm.

We must now extend our concept of time beyond the directly knowable and existent world to include the past and future as parts. What are the past and the future? In the first place, it is evident that they are non-existent. I have argued this at length in another publication,[1] to which I would refer the reader who desires a more complete study of the matter. We know that past and future do

[1] "The Metaphysics of Historical Knowledge," University of California Publications in Philosophy.

not exist, because we observe directly disintegration on the one hand and origination on the other hand. Yet, although past and future do not exist, they are not unrepresented in reality; for we possess the truth about them. Every event as it flares up into existence is the fulfillment of a truth which anticipated it; every element as it passes from existence leaves behind a trail which is the historical truth that it was. Now these truths are the other parts of time — past and future. Whoever conceives of the specious present as having developed out of something and as tending toward something, recognizes these ideal worlds; short of recognition of them, one is left with the given moment as the all.

Now the being of these ideal worlds puts a problem to the metaphysician, the consideration of which we shall defer to a later chapter; here it must suffice to make plain the recognition of them by everybody who possesses a developed conception of time. Although everybody knows that the present indivisible moment alone exists, everybody nevertheless thinks of time as some sort of series, and of processes as occurring in stages, one following another. Everybody thinks of the present as the last term of a long, perhaps infinite, sequence of events, and as the first term of an equally long, and again perhaps infinite, procession to come.

In arguing for the validity of a conception of time which carries beyond the present, we do not, of course, defend an absolute time independent of the process of the world. Time is entirely relative to process; there could be no time if there were no change. Time is the ideal record and prophecy of happenings, of the order of their rising and perish-

ing. It is the trail left by the world in its movement and the path which it is destined to follow. But plainly, without the movement, there could be no path.

The conception of time as a series has been criticized by Bergson; but he really does no more than call attention to the fact that the present or given flare of reality is no developed series. It is only when the immediate is conceived in relation to something out of which it has grown, but which it is no longer, and as developing into something which it has not attained, that the series comes into view. Then clearly one thing is seen to follow upon another. The immediate is, indeed, an indivisible existence with just the most rudimentary order in the elements which it holds in solution; but time, the ideal record of the immediate, is not indivisible. Every history or biography contains stages. Consider the movement of a body in space, the growth of an organism, the development of a nation. The stages are continuous, but nevertheless distinct; one follows upon another, yet one is not another. And the distinction between them is not arbitrary; for it corresponds to a distinction between one truth and another. For example, to distinguish between one position of a body in motion and another is to distinguish between one truth — the truth that it was at *a*, and another truth — the truth that it was at *b*, and these truths have an unequivocal order. The stages in a process are, to be sure, stages in its history; but did any one ever suppose that they were stages in anything else? Surely no one ever thought they were contained in the specious present.

One might, however, reply to this that the arbitrariness of the stages in the temporal series consists in the arbitrariness of the truths of which the series consists. Take motion as the simplest case of change. When a body passes from *a* to *c*, going through *b*, you cannot assert, it might be claimed, that it was first at *a*, then at *b*, and now is at *c*, thus distinguishing the three truths; for since *a* and *b*, and *b* and *c*, are contiguous, they cannot be distinguished at all. Yet surely you can distinguish between the non-contiguous points *a* and *c*, and hence between the corresponding truths of motion; and, believing as we do, in the individuality even of contiguous points, there must be a valid distinction between being at *a* and being at *b*. This answer involves, of course, a defence of individuality, which we shall undertake in our chapter on relations. But grant for the present the reality of individuals, and the distinction between the one truth and the other follows. That a thing can move, can get from one point to another, is an irreducible fact of observation; it is just the fact of transition, which has to be admitted on any view.

There are still two facts outstanding which might seem to tell against the conception of time as a series: one is the persistence of elements after they have risen into existence along with the new ones which are just coming in — what Bergson calls the *pénétration mutuelle des éléments;* the other is the reappearance, in a new context, of elements which existed before in a previous one, emphasized by us in our discussion of personal identity. These facts are, indeed, fatal to any conception of time as a series like that of the

points on a line, in which any element, if it occupies a given position in the series, is necessarily excluded from any other. The recurrence of elements implies that an element which was at a moment of time in the past may now be present, and even future also; and the persistence of elements requires that neighboring moments have common parts.

Yet because time is not a punctual series, it does not follow that it is no series at all. There are other types of series. There is another example of a series which well illustrates many features of the temporal series. Consider a series of overlapping areas of various sizes. Here elements of space exist identical in various areas. Yet the latter may be arranged in a continuous series. Each position, that is, each whole area, is unique; but the parts of the areas are not all so; some will run through the entire series. The positions in the series are distinguished by possessing, or not possessing, elements which do not, or do, belong to the others. The properties of time are parallel. The "moments," the whole stages or cross sections of the world process, are unique; but their elements are not unique, for they are repeated in various wholes, exist at various "times." The wholes are always different, but not so the elements. Take the mind as an illustration. It begins its career as a definite whole of elements. Growth consists in a continual modification of this whole through the loss of some elements and the gain of others. Personal identity, as we know, may be more or less; yet throughout the process there is a thread of sameness by reason of which a man is the same man. Hence, although the entire momentary state of an individual is always

unique, being always a change from that of a moment ago, there are elements of this whole which are common to many moments, and even some which recur after long intervals. The process of experience is a continual assimilation of new material to the old, and an effort to preserve the old, despite constant decay.

The conception of time as a punctual series is closely connected with the theory of the uniqueness of mental states, a theory which we have found grounds to reject because of its evident contradiction with the facts of personal identity. For if mental states were unique, there would be no survival beyond the single instant, or recurrence after an interval; each element would be an instantaneous existence, rising only to perish forthwith.

The final objection may be made that an element cannot exist at different moments; for, in order to do so, it would have to maintain its identity despite its entrance into the new relationships involved in its presence in a new context. A thing cannot be identical in different relationships, it may be claimed. This objection rests on a theory of relations which we shall find grounds to reject in our chapter devoted to the subject. Let it suffice here to call attention to the truth already insisted on, that partial identity is a fact of direct experience. I find myself to be partly the same, as man and as child, before and after entering upon new duties, new relationships. No logic, we repeat, can invalidate the truth of such experiences.

Time, then, is a series. Every series is a class of elements between which there exists an asymmetrical, transitive

relation. What are the elements of the temporal series and what is the relation by virtue of which they constitute a series? The elements are ordinarily conceived to be events, happenings. But, as we have seen, only those events exist which belong to the specious present; yet all other events, such as Brutus's deed in killing Caesar, are members of time although they no longer exist. All except an infinitesimally small segment of time consists, therefore, not of real events, but of the truth about events. Brutus and Caesar are no more; but the truth that Brutus killed Caesar abides; now this truth is the object of history and the genuine element of the temporal series. The past state out of which a thing has grown and the future state into which it will develop are not elements of the temporal order; for they have no reality; but the truth that such a thing was and the truth that such another thing will be are elements.

Sometimes, however, the elements of the temporal series are conceived to be not events, but "moments." Events are *at* moments, it is claimed; they acquire their temporal character through this relation; they do not possess it in themselves. But this is to put the cart before the horse; for, as we have seen, there is no time apart from events. Temporality is nothing else than the characteristic property of process and the truths which are generated through process. A moment has no existence apart from the events which are, as we say, "at" that moment; it is, as we shall show directly, nothing but a level of events — a class of correlated happenings or truths about happenings. A moment has no more meaning apart from the events which are at it than the class

man has meaning apart from the real or possible men which do, or may, belong to it. We think of an event as at a moment rather than as constituting a moment, because it has to be taken along with other events with which it is correlated in the temporal series. The elements of time are rightly designated events rather than things, meaning by event either an existing occurrence or the truth about one, because event implies process, which is the genuine element of reality and that by virtue of which reality is temporal; whereas thing denotes simply one aspect of process — that of stability — which, although involved in all process, does not suffice to constitute it.

Such are the elements of the temporal series. What now is the relation between them through which they constitute a series ? The difficulties involved in the answer to this question have, I think, usually been unrecognized. They arise from the fact that time consists of two parts — a real segment, the specious present, and an ideal segment, the past and future. Within the specious present, the order of events is indubitable, because given in direct experience. I find there a relation between occurrences unique in quality, a flashing into existence of events one after another, yet in contact with one another. A simple sequence of a few tones is an illustration. The properties of transitivity and asymmetry which characterize the relation are given with it. I observe that *ab* is not the same as *ba*, although I hold both within the unity of the present moment; and that wherever *a*, *b*, *c* occur together in the present moment, a relation of sequence between *a* and *b*, and between *b* and *c*, entails a

similar relation between *a* and *c*. But only a small part of the temporal series is given in the existing moment. Where, for example, *abc* is given, *cd* is not given. How shall we connect *ab* with *d*? Here of course memory supplants direct experience. I may remember that *c* was before *d*. In this way it is easy to perceive how the series of events is set up. If *abc* are in contact sequence within the present experience, and *cd* were in contact, and *de*, and *ef*, . . . then I can form the sequence of the corresponding truths, *a' b' c' d' e' f'*. . . .

When events cannot be observed and remembered to be in sequential contact, their order is established by analogy and induction in the fashion familiar to students of nature and of history. But now, although it is easy to understand how the time-series is actually set up in the minds of men, the problem remains, what asymmetrical transitive relation holds between its members? There was a real relation of sequential contact between the elements in each pulse of existence, between *a* and *b*, *b* and *c*, *c* and *d*, *d* and *e*, *e* and *f*; but there never was such a relation between *a* and *c*, *c* and *e*, *d* and *f*. For when *a* existed, *c* was not yet, and when *c* was, *e* had not yet come to be. For example, there is not, nor ever was, a real relation between Brutus's deed and Charlotte Corday's; there cannot be one now, for neither deed exists; and there never was one, for the two were never together in existence. When, therefore, we put them both in the series and conceive of one as being before another in that series, what exactly do we mean? We do, of course, put events into an order in the way that I have described and call that the temporal order; but we do not thereby establish any

objective relations between them. If the whole of time formed one existing moment, this problem would not arise; for then the real relation of contact sequence would hold between any two members; but this, we know, is contrary to fact. What objective relation, we ask once more, holds between non-contiguous members of the time-series? Is there any, or is the series an artificial one, created by the mind?

It may perhaps be suggested that the relation which we seek is causation. The fact that the Crucifixion preceded St. Augustine's change of heart may, for example, be equivalent to the causal relation between the two events. Yet, it is impossible to maintain that remote events are cause and effect of one another. Causation is a real process; only that which exists can bring something else into existence; the real grows from the real, not from the non-existent. Only so much of a past moment as survives into the present is effective in producing the new events which grow out of each present. Hence the problem of the relation of remote whole moments to each other remains. They produce each its succeeding moment, but non-contiguous whole moments cannot be causally related.

Yet that events have characters which, when imaged in the truths which replace them, afford a basis for a series is known to every student of history and nature. Organized bodies form an order in accordance with the principle of increasing complexity; personal and historical events are a teleological sequence, one situation being the fulfillment of the purposes of another and becoming in turn the basis for

new developments. Even if we did not know the order of the events of a man's life, as set up in the way defined above through the succession of adjoining moments, we could establish it through their teleological significance. The biographer who seeks to understand a life strives to discover just such an order. And in so far as the student of economic or cultural development undertakes to find laws for this development, he is doing the same thing — looking to establish among recorded events characters which define objective relations. And physical and chemical laws — such as entropy, for example — which aim at describing real sequences tend to the same end. The temporal order is never understood until objective relations, transitive and asymmetrical, are discovered among its elements.

Now that we know that time is a series, let us inquire into its properties. In the first place, the series is a simple one. That this is true within the mind of the individual is obvious; for time is there one onward flow. But time is not a merely individual affair, relative to each biography. There are, of course, the many temporal processes, as many as there are individuals in the universe; but there is only one time. Yet how can time be single, when it is nothing apart from processes, nothing in itself ?

The one time is the series which results from the correlation of the many processes. The principle of the correlation is this: those stages of individual processes are correlative which exist or existed together. To ask what events are contemporaneous with a given existing event is to ask what other events exist. These constitute a now or moment. Co-

existence is discovered through the processes of observation, memory and induction, just as succession is. If we can observe existence, we can observe co-existence. We can observe, for example, the co-existence of many visual or other sensations. We can remember to have observed the co-existence of sun and moon in the sky on such and such a day. We reason to non-observable co-existences after the analogy of what we find to be habitual in our own minds. Having observed the regular co-existence of *a*, *b*, and *c*, we infer, after observing *a* and *b*, that *c* must also have been there.

Russell has objected to theories such as ours which explain time as the abstraction from the correlation and order of processes that, since events form a many-one series — many events being co-present at a single moment — there must be an objective and independent order, through correlation with which events derive theirs. This independent order would be, of course, so-called absolute time. Co-presence, it is asserted, is always co-presence at a given time; the correlation of events with one another takes place only through their prior correlation with absolute time; events are correlated with reference to time — time is not the abstract for their correlation.

Yet this argument no more proves the independent existence of time apart from processes than Russell's definition of cardinal number proves the existence of the number-series independent of numerable things and classes. Sameness of cardinal number is defined by means of similarity of classes, those classes which can be correlated through a one-one

relation having the same cardinal number. But sameness of cardinal number does not depend on the prior existence of cardinal numbers; rather conversely, the latter depend for their being on the existence of similar classes, of which they are the abstract conception. Similarly, the co-presence of events is not determined through relation to a moment of time which has being independent of them; a moment of time is simply the class of events which bear, or bore, to one another the relation of co-existence. Only after a moment has been defined through this correlation, can we speak of events as being at the same moment. A given moment is nothing but a level of events. Events are co-present simply because they co-exist or have co-existed. A particular moment in the series at which something occurs is determinable only with reference to other levels of co-existence, either as preceding or succeeding; it has no absolute position independent of the events which belong there. Absolute time, therefore, is of precisely the same type of being as the number-series — it is purely ideal.

Yet Russell's defence of absolute time has value against all views of time as subjective. The correlation and order of processes is not a matter of arbitrary, personal taste, but is based on objective characters of them. If this is true, we have next to inquire whether the relation of co-existence which defines the correlation of events is an ideal or a real one. Is it like the relation of similarity between two colors or is it like the relation of equilibrium between two masses in a scale? In either case, however, the relation would be objective — independent of mere point of view and coercive

on the understanding; for, as we shall show, even ideal relations are based on facts as stubborn as any others, and just as independent of mind. Here, I think, two different theories can be entertained. One may hold either that co-existence is merely the possession of a common character — that of existence, in which case the relation would be ideal, and independent beings, if there were such, might belong to the same moment of time; or else co-existence involves contact, in which case the relation would be a real one, and there could be no independent beings. Of these views, the former is, I think, the true one. Co-existence does not involve contact, logically. I can conceive of things as co-existing without contact. Co-existence is the simpler fact, which contact implies. Mere co-existence is, then, an ideal relation; it is simply the possession of a common character — existence; it is one kind of similarity. On the other hand, we are certain of this — there are no co-existing individuals known to us which are not in contact; for, in order to be known, they must either be in direct contact with the self which finds them, or else in indirect contact through one another. The co-present elements of our world, at any rate, are in contact.

A relation similar to that between co-existence and contact holds between sequence and causation. It seems at first sight as if a real sequence of elements *a* and *b* does not imply that *a* is the cause of *b*. Once more, the temporal relation seems to be the simpler — causation implies it, but not *vice versa; b* may follow *a*, we think, without *a* being the cause of *b*. Yet so far as the sequence of events in any

individual whole is concerned, this is not true; if *b* follows *a*, it grows out of *a*, is caused by *a*. No event can happen to me, for example, unless it grows out of my present life. Yet cannot an event happen to you without my participation as cause? The answer to this involves a causal problem — whether in any causal sequence the entire universe of existing elements is involved, or whether this activity is restricted to a part only. We shall try to show that the fact of interaction involves, not directly, but mediately, through the causal processes in neighboring individuals, the participation of every individual in any individual causal process. Hence sequence without causation — in a world of contiguous elements, the only world that we know — is impossible. It would be possible only in a world of elements which were not in contact.

Hence, in the world which we know, there are no independent processes. The stream of existence wells up inside of relatively isolated centers and is divided into many distinct eddies; yet nature and the mind overlap and all nature is one flux. We got at the simplicity of time through the correlation of processes co-existent and sequent; but we might have derived it from the singleness of our world process.

The most impressive of all the properties of time is perhaps its lack of double points. No moment is at once past and future to any other. Each divides the others into two mutually exclusive classes, the past and the future. Time does not at any point turn back on its course; time is irreversible, the past is irrevocable. Hence the sadness of the time process. This feature of time is not annulled by the

fact, to which we have called repeated attention, that much of the past is born anew into the present; for the complete past returns not again. There are no totally recurrent or reversible processes. Cyclical processes are really only partly such; for the co-existence of unlike phases of other such processes, and of irreversible processes, renders the former also, because of the unity of nature, not absolutely recurrent. Nowhere, either in space or in time, do we meet with the exact similarity of any whole; some aspects of a whole are found alike, but invariably others differ. By reason of the influence of the whole of reality upon any one of its parts, in order for any part of a contemporaneous world to be exactly like any part of a preceding epoch, two entire cross sections of time would have to be alike; but this is impossible.

The uniqueness of moments follows clearly from the following facts. First, there is the unity of process: the future grows out of the present, yet in doing so does not annihilate the entire present; but, although displacing part of it, grafts itself upon the permanent in it and exists along with it in one indivisible whole. Elements which are in contradiction with the abiding part of the present cannot, therefore, recur. Now much of the past is of this character. One's own boyhood, for example, could not recur; for, in order to do so, it would have to grow out of manhood, and so exist along with it in an instantaneous whole; we with our knowledge and disillusionment would have to be ignorant and hopeful as well. And this, of course, could not be; for to be a boy depends upon having just those limitations which

would be destroyed if our being were to flow together with his — knowledge and ignorance cannot co-exist.

But might not the reinstatement of the past be gradual? The unity of reality prevents only the sudden and entire recurrence of the past. If the lost elements were gradually replaced and the new ones gradually fell away, might not the old finally recur in its pristine completeness? Might not various areas in our graph of time be repeated, not once only, but often in the course of time's infinity? There would be a sort of universal alternation of generations, the same rôles in the world drama being impersonated over and over again. Why should the image of time be a straight line rather than a curve which returns upon itself?

Yet reality, by its very nature, renders this impossible. Reality is organic; its changes are pervasive and cumulative; and, although it may decline and fall back to the general character of a preceding stage, the new stage will nevertheless bear traces of the intervening development, which will differentiate it from the earlier one. A difference in position in the temporal series necessitates a difference in character, just because each overlies a different range of events preceding. A moving body, for example, cannot be exactly the same after passing through points *b* and *c* as it was at *a*; for the being at these other points must have affected its nature, and this effect is, partly at least, indelible.

Another property of the temporal series is infinity; by which I mean that before each moment of the past another moment can be found, and that after the present moment

there will always be another moment. In other words, there was no first moment and there will not be a last.

Ex nihilo nihil fit is the ancient and sufficient reason against the supposition of a first moment. Every event that we know is an outgrowth, the coming to be of which was determined by something already existing. But a first moment of time would imply the existence of something from which all other things have originated, but which itself came from nothing — that is, just came to be without cause, or else always was, never had an origin at all. Now in either case the thing in question would be wholly exceptional. Everything of which we have knowledge is a happening and had an origin; a static existence or an existence *causa sui* we know nothing of.

For similar reasons time can have no end. In order for time to have an end, the universe would either have to cease to be or else arrive at a final state of quiescence. But that the universe cannot die is clear from the following considerations. The death of anything is always determined by some other thing which is rendered more stable in consequence; disintegration is always relative to growth; it is unthinkable that anything should perish of itself. To be sure, all existence tends, as we have seen, to pass away — existence has a leak in it, as Plato says — yet its passing is never separate from persistence and new orgination. A thing can perish only through a conflict of its own elements or a conflict with external forces. But in each case some elements are strengthened: in the former, certain of its own; in the latter, part of its environment. The universe can, therefore,

never come to an end; for of external enemies it has none, and the disruption of some of its parts is relative to the growth of the rest. And, to consider the other alternative, the universe cannot arrive at a state of quiescence; for experience involves activity, a seeking for something new, a striving for an end.

Fourth, time is usually conceived to be continuous. Now by continuity we commonly mean many things which ought to be carefully distinguished. We mean, in the first place, that the succession of events, of which time is the form, does not, as we have insisted so often, consist of elements which exclude each other from existence; but that each new element, as it rises, finds the ground already occupied, grafts itself upon the relatively permanent there and lingers, existing along with other things in their turn new. The series is not one of existences following upon non-existences; but of novelties rising into a world already there.

In the second place, we mean by the continuity of time that there are no gaps, no empty places in the series. To our immediate experience, time seems to be continuous in this sense also; for to it, even the phenomena of sleep and swooning are changes, not lapses. Introspection has no means of answering Lock's question whether the soul always thinks. Left to itself in its backward search, it can find only experiences which succeed and overlap each other. One could not experience a lapse in consciousness; for to do so would necessitate that one experience one's own non-existence — the very conception of which is self-contradictory. We come to believe in gaps, first, from the reports of our fellow

men who tell us that their own lives were awake and moving while ours were still and asleep. When we correlate individual streams of consciousness, we see that to elements of one there correspond no elements of others. Second, the observation, after sleep, that recurrent physical processes have seemingly skipped those intermediaries which we expect normally to occur confirms our belief. We prefer to regard our own lives as discontinuous rather than nature's, because we have learned to think of her as having an existence and habit superior to our own. But the existence of these gaps in the lives of individuals does not prove the discontinuity of time; for they are gaps only because there exist facts in the minds of other men, or in nature, to which they can be correlated; and wherever there are events, no matter where, there is time — time is the order of whatever events there happen to be. There is time between phases of an individual's mind, because there are other events to which none correspond in this particular mind; but there is no time between times, no empty time; for where there are no events, there is not empty time, there is — nothing. Upon the broad stream of existence are carried many eddies which come and go and form anew; but their discontinuity does not make the time-stream itself discontinuous; for its flow is just its changing existence, which always is.

In the third place, we may mean by the continuity of time that time possesses those characteristics which make of any series what mathematicians call a continuum. In such a series, there are an infinite number of elements between any two, and every infinite sequence contains a limit in the

series. The temporal series is supposed to have the same structure as the points on a line. This assumption about time is employed in kinematics and dynamics in the treatment of motion, and in mathematical physics generally. All physical processes are measured in terms of motions, and motions are assumed to be continuous because space, over which motion proceeds, is supposed to be continuous.

It is clear that the continuity of time, in this sense, is a hypothesis and not an observed fact. No one has ever observed continuity either in space or in motion. And in the changes which take place within the mind, it is impossible to find an infinity of elements. Observe as well as we can, we discover minimum waves of change, one after another, a discrete series. Just as there is a *minimum visibile* of space, so there is a *minimum sensibile* of change. Yet the fact that the changes within the mind are a discrete series does not prove that time itself is discrete. For time, we know, is not the order of any individual process, but that series which results from the correlation of all processes. Now it may very well be that, correlated with the discrete changes within the mind, there are an infinite number of changes in nature, and the fact that through the assumption of continuity science so well handles physical events makes this very probable. If this is true, then the temporal order, being the order which results from the correlation of all processes, is continuous in the mathematical sense of the term, and to the discrete pulses of consciousness we must ascribe a *duration* measured by the continuous and parallel changes in nature.

We are thus brought to the fifth property which is usually ascribed to time, and the last which we shall consider — duration. Just as any segment of a straight line is not only an order of elements but a length, so any part of time, it is said, is not only an order of changes but a length of time — a quantitative, measurable thing, a duration. But what is duration? What do we mean when we say that anything lasts long? And how can we determine the amount of this?

Duration is derived from a fact to which we have often called attention, namely, that certain events exist along with the rise and fall of others. Reality has breadth, a cross section, as it were; it is of strands interwoven; it is never a single thread. Of themselves, elements either exist or do not exist; they endure when their existence is correlated with the coming and going of other elements. If it were not for this correlation with parallel happenings, elements would not have duration, but only existence. The durational quality is a derivative of the correlation. This does not imply that duration is not real; for a quality which depends on relation is quite as real as any other; and we actually observe duration as a character of temporally related elements of reality.

The quantity of duration is also determined through correlation. An element endures or lasts long when it is coexistent with the emergence or passage of many other elements; it is evanescent when its existence is parallel to only a few happenings. Two elements last the same length of time when the existence of both is correlated with the same number of parallel happenings; one lasts longer than

another when to the existence of the latter there are correlated fewer happenings than to the existence of the former. Duration is improperly ascribed to the intervals between events, just as if there were something — absolute time — besides events; it really belongs to whatever exists parallel with them. Thus when we listen to the beating of a metronome and speak of the duration of the interval between any two beats, we are really talking about the duration of the listening and expecting self which exists along with them.

Apart from the correlation of happenings, there is nothing objective about duration within the field of mind. A process of the same length as another — that is, one determined to be of the same length through correlation with other processes — may nevertheless seem to be shorter or longer according to purely subjective conditions of interest, attention, expectation and the like. To discover the "real length" of a process we always resort to the test of correlation; we compare it with the ticking of a clock or the passage of sand through the opening of an hourglass.

When we pass beyond consciousness to the sphere of nature and the ideal realm of past and future, the same treatment of duration in terms of correlation presents itself as the only possible one. The length of time of any process is measured in terms of some other process. If they begin simultaneously and the one ceases before the other, the first is shorter than the second, and conversely; if they end together, they are of equal duration. For example, the length of time which the earth takes to complete its orbit is said to

be twelve times as long as the length of time required by the moon to make her revolution around the earth; which means that twelve revolutions of the moon are correlated with only one of the earth. Or to say that the life of one man was longer than another can mean only that the existence of the one was correlated with more revolutions of the earth. The length of time between any two events is also no absolute thing independent of events, but the number of other events which intervene between the two in question. The duration of the interval between the birth of Christ and the fall of the Roman Empire is nothing but the number of solar revolutions which intervened. What else could it be? For besides the events, there is nothing.

The duration of any process is, then, relative to the number of some other process with which its existence is correlated. Hence, since nature is a whole and there are no independent processes, we may, as Mach has shown, replace t in physical equations by the path of the earth in its solar revolution, or by any other parallel process, provided we know the law of the concomitant variations. And this is exactly what, for all practical purposes, is done. The t of physical equations, like all other expressions for so-called absolute time, is just a symbol for the correlation of events.

It is often objected to this theory of duration that if the rate of the earth's solar revolution should alter, then the duration of any process measured in terms of it would have to change also, even if the process in question had not itself changed at all. But the objection overlooks the truth that the rate of the process to be measured can itself be defined

only in terms of a correlation with some other motion; that duration and rate of change *are* purely relative. If, relative to the earth's motion, a man's life measured one hundred and forty, instead of seventy years, it would be true to say that he lived twice as long; provided only that when he came to measure the number of his years by some other parallel process, he did not find, in terms of the latter, that his years were as many as heretofore. But if, when measured in terms of this process and every other, he found the same doubling, then his life would actually be twice as long as it was before. And he would experience this to be true — his feeling for duration would report it. A farmer who crowded into his life twice as many sowings and reapings would feel, provided the other events of his life were also doubled, that his life was twice as long. And to pose as an objection to the relativity of duration the question, what would happen if the rate of change of all processes were to be altered alike — would real duration be altered? shows that the inquirer has not yet grasped the truth that the rate of a process has no meaning except with reference to some other process, and that therefore the rate of all processes has no meaning at all; for there is no further process with which to compare them. Rate of change has no meaning when applied to the process of the universe as a whole; but only with reference to part processes defined in relation to one another.

Bergson, who believes that there is something real in duration apart from correlation, seeks to make this convincing by putting the question, why does not the future come to be all at once? If duration were not real in itself, what

would prevent the crowding of the events of a day into a second, and if into a second, then into an infinitesimally small part of a second — into an instant? To this we answer, in the first place, that no argument of ours has done anything to destroy the subjective determinants of the sense of duration. The seeming long and the seeming short of processes must always exist and vary while there is interest, expectation, impatience. But these factors, we insist, are not independent of the order and mutual correlation of events, upon which the objective durational quality of reality depends. To hasten or postpone an event means, objectively, to change its order relatively to other events; to bring it before or after other events which usually intervene and are expected. If I expect my friend in the evening and he hastens his coming and appears at noon, this means simply that certain events which I had expected to precede his coming now follow it. To have to wait for an event, to say of it that a certain length of time will elapse before it occurs, means that certain other phenomena will inevitably intervene to consciousness. So long as events do not occur simultaneously, but in a determinate order, they cannot happen instantaneously; and an event which comes after another expected event will always seem to take a longer time in coming; whether it takes an hour or a second has meaning only with reference to parallel processes, in the fashion already explained. Finally, in accordance with what we have established, it would be senseless to talk about the length of time necessary for the coming to be of the entire future, because duration has no meaning when applied to

the world process, but only when applied to part processes measured in terms of one another. There is, likewise, no meaning to such an expression as " the duration of past time "; for time — the array which results from the final correlation and ordering of all events — has itself no duration; only separate sequences, which can be correlated with other sequences, possess duration. We can talk of the duration of any single process, but never of the duration of all processes.

CHAPTER VI

CAUSALITY

THROUGH all our previous studies we have observed that the flux of reality is not absolute, but relative to the rhythmical recurrence of its elements. By reason of this, reality possesses a pattern like that of a musical composition in which themes are constantly repeated.

For the existence of this pattern men have always sought an explanation. Since an unpatterned world is just as thinkable as a patterned one, they have asked for a reason why the actual world should be of the one type rather than of the other. But more important as an incentive to inquiry than any purely speculative questioning has been the practical need of predicting the future with confidence, possible only if the rhythm of the world process is no chance fact which might become otherwise, but based on some necessity guaranteeing its permanence. Now by causation we mean precisely such a necessity in the rhythm of change as makes possible a deductive knowledge of change.

However, although we undoubtedly possess a knowledge of this kind, the causal necessity which should be its foundation has always proved difficult to discover. If we examine the sense world, we find no necessity such as we seek. We find only a rhythm in the alteration of qualities, but no necessity which might compel the continuance of the

rhythm. Hume's statement of the situation still remains unanswered.

This conclusion has, to be sure, been called in question by certain recent thinkers, whose views deserve examination, despite the fact that they have not changed the result. The reason why we do not find any necessity in the changes of things, we are told, is because we neglect a part of their nature, which, although incapable of being perceived by the senses, is nevertheless discernible — by the intellect. Things have a logical, as well as a sensible aspect, namely law, which is the real cause of their changes and the basis of deduction. Substitute constants, representing the particular conditions of the movement of an object, for the variables in the laws of motion, and you can deduce future positions. From the mere law, the universal and logical nature of a motion, you cannot, of course, deduce its future; but if you take the law in connection with the special conditions, the empirical sensuous aspects of the situation, you will have success. Causal necessity would therefore be logical necessity, and we could understand the former by seeing it to be a case of the latter, which is well known to us.

We ourselves, in our chapter on perception, called attention to the fact that our perception of things included not only a contact with part of their sensuous totality, but also a knowledge of their past. Inevitably, in all perception, the history of a thing comes under our purview. And this history is an ideal reality, of which we become cognizant only through the intellect, not through the senses. What we call

the law of a thing is very largely just this; for it is at least a statement of how the thing acted under typical conditions. Yet the law always involves more — the assertion that the thing will act in the same way under similar conditions; which is belief, not perception of fact. The only reality which the law can report is the ideal reality of the thing's past; it cannot report the future, because the future has no being. And it is not at all clear how the ideal record of a thing's past can drive it forward to repeat the pattern of the past. In themselves, the truths about the past of a thing do not imply anything as to its future; only when they are taken together with some further proposition asserting the continuance of the past rhythm, is deduction possible. But it is just this latter proposition which is in dispute, and its basis still to seek.

The insufficiency of the foregoing theory of causation is also evident in the following inference which has been drawn from it by its supporters. One element in every formulated causal law is time. Hence if the law of a change is its cause, time must be a part-cause. For example, in the motion of a body time must be effective just as mass and force are. Yet those who have followed us in our discussions will realize that time cannot be the cause of any process. For time is either just the flux itself or else its ideal record. But the former does not carry us beyond the given moment, does not contain any prevision of future moments; and the latter, being itself a result of the process, cannot as such be a factor in its generation; as a record, time is *post factum*, and therefore ineffective.

The failure to find causal necessity has led in some quarters to a frank abandonment of the search for it. There is no necessity in natural phenomena, it is said; the predictions of science do not imply its existence; for all that they presuppose is a high degree of probability. The empirical regularity of phenomena is no indication of necessary relations between them, but only a chance form of them, a run of luck in the infinite game played by natural forces in space and in time. The possibility of induction rests on the fact that we happen to be living in a part of space and time where by chance there is this regularity. Remote regions of space and time may not exhibit uniformity, and consequently our empirical laws may not hold there at all. The laws of science represent fair samples of the constitution of the part of the world beneath our ken, the degree of their probability depending on the random character of our sampling. To use the illustration of Charles Peirce, just as I can gauge the general character of a cargo of wheat if I take samples from various parts of the hold, so I can discover the probable character of a class of natural phenomena by the examination of a multitude of cases covering a wide area and selected at random.

But this theory, when used as a basis for the prediction of the character of new events, seems to me to suffer from the same fallacy that was noted in the interpretation of causal necessity as logical necessity. For it assumes that the future already exists possessed of a definite constitution which can be sampled. Induction from past to future is treated in exactly the same way as induction from one exist-

ing phenomenon to another. But, although you can discover the nature of the past and the present by the process of sampling; since both have constitutions, the one ideal and the other real; you cannot thus discover the future; for it does not exist to be sampled. You have got to discover the future from the past and the present; but I do not see that the theory under examination shows how this can be done. There is no reason why the supposed " run of luck " should not stop at this instant. If there is no necessity in the course of events, if everything be due to chance, then, no matter how uniform the past may have been, the future may be entirely different. Since the future offers new worlds to sample, you cannot infer anything as to the character of the new from the character of the old. Induction into the future is not like determining the proportion of black and white balls in a bag from a random selection from them; but rather like determining the contents of a bag unopened from one already examined. Peirce's theory of induction is good for space, but not for time.

Moreover, the problem of causation cannot be brushed aside, as Bergson would have us do, by pointing to the unity of process. His line of reasoning, with the basis of which we are already familiar, is as follows. No process is a succession of separate stages, one following upon another. Motion, for example, is not the series of occupations of position described by mathematicians. Indeed, no occupation of position is ever given as real; what we find empirically is a going from one position to another, a transition or flight. The taking up of a new position is already implied in the

abandonment of the old; hence in the present — the moving present, of course; for that alone is real — the future is already given.

Yet this presence of the future in the present does not take us far. It carries us only to the immediate future, to that which is even now coming to be. It takes the moving body into the neighboring points, but not beyond. The new is, to be sure, already coming to be with the passage of the old; this is the very fact of change, as we have seen; but what we are now trying to understand is not change — for we do not need to, since it is directly given — but necessity in change, the tie between present and future which enables us to predict what the future will be like. In so far as we can find the immediate future developing in the present, we know what will eventuate; but what we also want to know is — the character of the remote from the nature of the immediate. The physicist is as sure of the path of a moving body for ten minutes as for ten seconds; the physiologist is as certain of the adult form of the embryo as of the child form. And the remote fact is not given in the immediate; for if it were, there would be no difference between present and future, between what is and what is not yet. The temporal process is not so highly unified that one cannot oppose the idea of what is to be to that which already is, as the fulfillment or violation of any expectation attests.

Hence, as the result of an age-long search on the part of philosophers, we may conclude that there is no discoverable necessity in the transformations of the sense world.

Unlike the world of sense phenomena, however, we seem to find in the inner life the necessity which we seek. We find

it, namely, in impulse, interest, plan. This is an old idea, and a true one, I believe, but the objections which have been urged against it have never been answered or the difficulties which it involves successfully faced.

In order for there to be necessity in sequential phenomena, certain things must be true. First, there must be a bond between present and future of such a kind that we can understand how the latter must grow out of the former in a determinate fashion. Second, this growth must be no mere inner development, but a response to an outer solicitation, a facing of a situation, an adjustment. All causation involves the functional relations of things: contraction in relation to cold, expansion in relation to heat, organism responding to stimulation, and the like. Third, the necessity must be of such a kind that it carries us beyond the immediate future, enabling us to predict long courses of action.

Now the various phenomena of what is broadly called will all conform to these requirements. Consider the first of them. Every impulse contains, itself being a present reality, a nisus to development into the future, to fulfillment. Every interest, every plan, unless opposed, must work itself out, and it must work itself out in the special fashion required by its character as special interest, plan or purpose. These all require certain determinate acts in order to fulfillment. Next, consider the second point. No act of will is a purely internal phenomenon. Interest is in something, desire is of something, wish and will are for something which is to grow out of a definite situation in the present existing

world. They are all responses to the given, terminating in changes of the given. For example, the presence of food excites a desire which releases an action upon the object, transforming it into something that satisfies. Third, in plan and purpose we have forms of will which fulfill the third requirement. If a man wants to walk to a definite point, we know that he must cover the intervening points along his course; if it is his plan to build a house, a whole series of acts stretching far into the future can be foretold as necessarily related to that purpose.

And in the phenomena of will alone does there exist the possibility of making the past a law for the future, and so a means of prediction. We have seen — the man of science desires some insight into the fact that through a knowledge of the past he can deduce a knowledge of the future. There was no apparent means of doing this in the case of purely external facts. In that realm, the moving present is given and the past is discoverable, but no relation is given, or can be discovered, of the present to the past such as would make possible the understanding of the future through the past. There, we cannot see how the present can contain in it an impetus to imitate the past. Whoever predicts the future conduct of a thing from its past, believes that the past binds its behaviour, compelling to reinstatement; but, as we have seen, a law is given only as a record, although we use it as a statement of the future. This is the leap in causal deduction, the mystery in external phenomena. But in the inner life all becomes clear — we can understand how the past becomes a law for the future, how that which we know only back-

wards can be read forwards. Let pleasure result from the doing of any deed, then the act becomes necessarily self-repeating. The memory becomes a plan; the future imitates the past. In interest, in plan, in habit, we understand how a law—a statement of past conduct—becomes a *vera causa* and a guide to the future. As remembered, then as turned forwards, the past, which is otherwise only an ideal record of that which was, becomes a plan and determines the future to be as itself was.

There is another feature of the causal process which, unclear in the external world, becomes clear when we find its analogue within the mind; I mean selective reaction. It may be that each thing responds to everything in its environment, but certainly its responses to some things are more sensitive and far-reaching than to others. The magnet that elicits responses from iron filings leaves silver unmoved; gold that remains unaffected by sulphuric acid dissolves in the presence of *aqua regia*. This phenomenon, so striking throughout nature, is most abundantly illustrated by the facts which the chemists call elective affinity. Now in nature, I say, no one can understand the necessities in these selective reactions. For example, we do not see what there is about gold which should make it indifferent to all acids except the one which, because of this preference, we call royal. If you say, there is no need of going further than the fact of selection itself, I answer — I cannot help seeking some basis for it; for I assume one every time that I expect the substance to act selectively in the same way when put again in contact with the acid. If it was a mere brute fact

before, how can I be sure that some other mere brute fact will not eventuate on this new occasion ? What was not necessary then is surely not necessary now; or if a necessity has been created by the past reaction, I have a right to demand some understanding of it.

Now in the inner life we possess such an understanding. The botanist, indifferent to the birds, sights the flowers. Suppose it was chance that first impelled him to make this selection. At any rate, it is not chance which makes him do it a second time. For the pleasure in his past experience created in him an interest in that type of object, whereas he has none in the other types. From a purely external standpoint, each object has its face turned towards every other object, and it is incomprehensible why it should look away from all others to fix its gaze upon one. We cannot find anything in it which should determine this favoritism. But if we enter into the thing and find there an interest for a special kind of object, then we understand. An interest is precisely that which creates a touch between one thing and another, kindling to exclusive interaction. And this interest exists in the thing in such wise that, knowing it to be there, we can predict what will occur.

Bergson has adduced the following as an objection to the theory that in the phenomena of volition we actually find necessity. That all necessity rests upon identity is the fundamental premiss of his argument. But between a plan and its fulfillment there is no identity, he says; for, if there were, there would be no need of any action or process in order for the one to pass over into the other. The one does

not contain the other, hence by no purely logical operation can the other be deduced from it.

Well, it is indeed true that there is not complete identity between a plan and its fulfillment; but even logical deduction is not mere identification. Take any simple case of deduction; suppose, for example, that I know that *A* is greater than *B* and that *B* is greater than *C*, I can conclude that *A* is greater than *C*. I get a new proposition in deduction, not something identical with the old; the conclusion follows necessarily from the premisses, but is not identical with them. Just so with the realization of a plan. There is more in the realization than there is in the plan. Even if nothing were added to the abstract characters of the plan through the process of realizing it, still, the fact of its being a plan realized, and not a mere plan, would be sufficient to make it different. Despite all this, however, we claim that given the conditions, the one follows necessarily from the other. And what do we mean by necessarily ? Why, just as we mean when we say that the conclusion follows necessarily from the premisses that, if the latter are true, the former is true also; so we mean, given the plan and given certain conditions, the realization of the plan comes to be.

There is, however, Bergson asserts, a great difference between the two cases; for in logic the conclusion is eternally implicit in the premisses; while in action the realization does not co-exist with the plan; there is a going forth, a development taking time. And there surely is this difference between the two cases; premisses and conclusions do co-exist eternally; time and process enter into the drawing of

conclusions, but not into their logical being in relation to the premisses. But now, despite this difference, we assert the equal rationality of the purposeful process. For, just as we perceive that the truth of the conclusion must co-exist with the truth of the premisses, so we perceive that the realization must *come to be*, not be, when the plan is given — the element of becoming, of passage and novelty, is necessary. A plan that was eternally realized, or co-existed with its realization, would be no plan at all; and a plan that would not realize itself under favoring circumstances is unthinkable. The plan itself not only demands that it become *real*, but also that it *become* real.

The entire active process is intelligible from one end to the other. To recapitulate: First, it is unthinkable that the plan should not become real, given favoring circumstances; that realization should not follow conception. Second, it is unthinkable that the realization should co-exist with the plan; the passage from one to the other, the process or becoming of one into the other, is also necessary. Third, the character of that which becomes real — what it is that becomes real — is also necessary; it is unthinkable that anything else than what is desired should become real. Hence, in the sphere of purposive change, it is not only possible to deduce the future from the present, the not-given from the given, but to find the necessity which makes this possible. Purposive change has a logic of its own; it is not a matter of brute fact or of chance.

Bergson offers one more point in his criticism of the notion that purpose makes the necessity in change. He says

we are always aware during the realization of a plan " qu'il est encore temps de s'arrêter." Yet this is true only when another desire intervenes to interrupt; when we remain within the original volition itself, such a thought cannot arise, and, given favorable objective conditions, it is impossible to stop.

The real difficulties in the way of understanding causal necessity in terms of action arise, as Hume pointed out, when we take these objective conditions into account. In order for any purpose to be realized, the body, and usually the external world, must co-operate. Suppose, to take a simple illustration of the intervention of the body, it is my purpose to walk. In order for this purpose to be realized, my limbs must move and neuro-muscular paths be intact and operate. If we are to find any voluntary action intelligible, we cannot take it merely as a spiritual event, but must understand it concretely in its relation to the body.

It must frankly be admitted that these difficulties cannot be completely solved. The involution of the soul in the body, and through this in the external world, is too complex and too little within the circle of our direct experience to be understood in any detail. Yet we can begin to understand; we can get from within our experience a hint as to how the whole is planned. We must recall points of view which were developed in our study of the relation of soul and body. In the first place, we saw that the body did not lie wholly outside of our experience. The muscular sensations of walking are a part of the limbs, which co-exist with the purpose to walk in one unified experience. The purpose and the physi-

cal process of walking are not two disparate facts, merely sequent upon each other and externally brought together, but elements in a whole. There is no desire to walk without incipient sensations of walking, and as the walking proceeds, the desire and its fulfillment co-exist and are functions of one another, just as thought and expression are. Of course there is a very large part of the body engaged in the process of walking which does not come within our immediate experience — the cerebral regions, for example — and this fact sets a problem to any one who would understand the process as a whole. But, as we shall try to show, the whole is perspicuous if viewed in the light of the part; the portion of the body which lies beyond the mind is of like nature with the portion which is given within it, hence similar purposes may operate there in conjunction with our own.

Similar reflections weigh with us when we consider the realization of purpose in the external world. Suppose we take the case of a painter sketching from memory. Here a plan is being realized in a material external to the body, yet not external to the plan and to experience; for the pigments and the canvas, as visual and tactile sensations, are elements of the mind. Of course there is a large part of the reality of these things which lies beyond our experience; but, again, the whole is like the part. And we can understand — or at least begin to understand — the working of the plan in the whole, through its working in the part within the mind. Our insight depends here upon the insight which we have already gained, that the physical world, while external spatially to the body, is not wholly external to the mind.

In the inner life of ourselves or of our fellow men, therefore, we claim to understand the processes which occur there in so far as we can find them the expressions of purposes, interests and habits. It is, of course, a matter of doubt whether any purpose shall ever be realized; but this doubt is due to our dependence on the world, to our involution in its larger realities. Yet this, at least, we know, that when we find ourselves in the tide of our wills, in the rush of our impulses, the thing must go on; or if anything shall stop us, it will be of the same stream that bears us. And, in so far as we can sympathize with the life of our fellows, can enter into its motives, we can rely on it, predict it, find the end of one piece with the beginning, its necessary sequent.

On the other hand, in so far as our lives are dependent on external realities, they are chance and uncomprehended, because involved in a reality which we do not understand. We have, to be sure, discovered there what we call laws, and at times, in the pride of success, have believed that we understood for that reason; but disenchantment follows philosophic reflection — the laws themselves are not necessary. We assume the existence of necessity there — every bit of inductive reasoning presupposes it — but so far we have been unable to find it.

And we can never find it. We can only assume it. And he who refuses to make any sort of hypothesis, whose intellectual conscience forbids him to believe aught except the given, can never understand. He only can hope to understand who finds it reasonable to interpret the processes of the external world after the analogy of the inner world — who supposes

that wherever he seems to find the merely external, there is also an internal; wherever law, purpose and interest.

People who accept this interpretation usually argue that it is as reasonable to believe nature to be an expression of purpose as the bodies of one's fellow men. Of our fellow men we have given only the bodies, the external, with their habits and activities; yet we assume the existence of a soul-life like our own, in terms of which we can understand the latter as necessary. Why, they argue, should one not believe of the whole of nature what one believes of the part?

Yet it must be admitted that we bear to this part an exceptional relation. For we are able to carry out concretely the purposive interpretation of the bodies of our fellow men, a thing which we are unable to do in the case of mere nature. We possess ideas which correspond to the plans of our fellows, in the light of which we can understand their behaviour; we possess no such ideas with reference to the rest of the world.

Hence, although we accept this traditional argument from analogy, it is not the one which we are employing. We are seeking some basis for induction; we wish to conceive of natural phenomena as necessary, else we can place no reliance upon them, we can justify no bit of the confidence which we place in them. Now there are just two types of necessity known to us — the logical and the purposive. That there is no logical necessity in natural phenomena was proved by Hume, and the recent attempts to show the contrary we have found to be failures. The other remains. We cannot, to be

sure, prove that it exists in nature; yet that it may exist there without contradiction we shall attempt to show. It is, at any rate, the only hypothesis which we are capable of framing. And is it unlikely that the same type of necessity which exists within the mind should characterize the whole from which the mind sprang and upon which it depends ?

From the nature of the case, we are unable to do more than offer an abstract and general description of the hypothesis which we are defending. Stated in as simple terms as possible, it is this. We suppose that the laws of nature are the expressions of interests and values. Wherever there exists permanent form, whether static, the togetherness of qualities, or dynamic, rhythmic change, we suppose that there exists a value in the pattern, guaranteeing the endurance of the one and the carrying out of the other. Just as I can be sure when I hear the beginning of a sonata that I shall also hear the end of it; for I know that there exists an interest in the whole; so when I see an object fall, I know that it will reach the earth, because I am confident that the given part of the process is the beginning of a whole intention which demands the end as its completion. Just as we find our own plans and interests conferring intelligibility upon our experience, weaving it into systems, so we suppose, alongside of our own and interwoven with our own, that there exist other plans and interests making of the whole sense world self-repeating patterns.

It must not be thought that we are seeking to deduce the outer sensuous world from the inner spiritual world. The

quality of experience cannot be deduced from its value. The interest in colors, for example, could not have produced blue or violet; for how could an interest pre-exist to its object? The co-existence of the two is the ultimate fact. What we assert is only this: that interests in definite patterns of sense qualities having somehow arisen, we can understand as necessary their conservation and repetition.

One further point remains to be developed in this chapter. Necessity, we have seen, is experienced in the rush of instinct or in the following out of a plan; the end, we know, must follow from the beginning. But a certain condition is involved which we have not mentioned, but have taken for granted all along, that no new impulse should develop within the process which we are experiencing or studying. For, plainly, this new development would not be without effect upon the original impulse and so, from a mere knowledge of the latter, we could not predict the outcome; all our calculations would be rendered uncertain by the possibility of an unforeseen deviation. Now all scientific prediction rests upon the assumption, I take it, that a system isolated from outside influences will go as we find it going, and will exhibit no new tendencies, unless they are awakened from the outside. We are able to get hold, once and for all, of the substance which we are studying, which we could not do if it were subject to irresponsible changes from within. We assume that a body, if left to itself, will move in the fashion in which we find it moving; or that a man, if unhindered or uninfluenced by his fellows or his surroundings, will carry out his present plan.

It seems difficult not to accept this assumption. Against it one might perhaps urge some principle of native change, in accordance with which all things must be transformed, purposes not excepted — παντα ῥεῖ. But the only principle of change in things is the necessity which we have been describing, that an impulse should work itself out into fulfillment, should run itself down to the end; yet this involves no change in the character of the activity itself as we have known it before. When such changes seem to occur, we shall find, I think, that we are not concerned with a simple substance or activity, but with a complex one; and that the changes are due, therefore, not to any spontaneity within a single impulse, but to the influence of each of the elements in the whole upon the rest. Every concrete activity which we study possesses such a complexity. And we notice that the more complex the inner world of the tendency, or the more varied its environment, so much the more numerous and varied and rapid are the changes which it undergoes. It is impossible to verify an absolutely native spontaneity. All deviations within an activity are due, therefore, to its relations to other activities, and their logic must be studied in this light.

Hence we are justified in assuming that each activity is a definite thing which can be known to be what we find it, and that it will work itself out in accordance with its aim. This does not imply, of course, that there is any tendency which is purely internal. The unit of action is always a response to an environment. A body moves upon impact, an organism responds to stimulation, a man desires something that he

sees and touches, his purposes are directed to the world outside. By the definiteness of an action we mean only the exclusion of occult influences which cannot be known through any survey of it. And we have seen how, from a knowledge of present impulse and plan, we can deduce the future, provided that new external influences do not intervene.

Yet even when new influences are brought into the field, we claim the power of predicting the outcome. We not only assume that from the given motion of an iron ball we can predict its future course, if left to itself, but we also believe that if we bring a magnet into its neighborhood we can determine beforehand that its motion will be deflected in a particular fashion. We know not only that if we leave a man alone with his purpose he will carry it out, but that if we offer him some temptation — gold or place or woman's wiles — he will abandon it, and his whole career will be different. How can we know this ? Wherein lies the necessity of such changes ?

We usually base our predictions on past observations that such things have deviated thus under the same or similar circumstances. And this means — in terms of our interpretation — that along with the tendency which was fulfilling itself before the new situation arose, there existed in the thing a counter tendency which only needed stimulation in order to waken into life again. If there be, as we assume there is, some necessity in these reactions enabling us to predict them before they occur, its basis must be an impulse or interest demanding them, which from a former manifestation, we judge to be still present.

Here it may seem as if we were led into the difficulty of accepting the notion of the potential. In what way, it may be asked, can tendencies pre-exist to their solicitation? For we suppose them to be already present as a basis for the new reactions. Take it within our own experience. Is an impulse real before it finds an object and begins to function? If so, are we not driven either into the quagmires of the "unconscious" or the barren wastes of "matter"? The larger aspects of this problem cannot be touched upon here; yet so much can be indicated — we must steer clear at once of Scylla and Charybdis. In order to do this, we shall have to keep in mind the extraordinary complexity of experience. Experience often has a sham simplicity which misleads, due to the dominance of some special interest impelling to the belief that it is all, while around and in subtle ways hiding within it are minor impulses which exist none the less because they are not in the focus. Much more exists in the mind than is ever at any moment known by it.

If we accept this solution, we can understand a divergence in a response, or a new reaction, to be necessary only when we can assume it to be already prefigured in the given as impulse or tendency unawakened. The deflection of the iron could be understood on the assumption of some interest of iron in magnets, and the response of man to gold or woman would be given beforehand in some obscure desire.

Yet it sometimes happens, at least in that part of the cosmos which we know most intimately, in the world of human affairs, that there occur novel deviations or developments of plan, in response to new situations, for which we can

find no tendencies hitherto. We are unable to predict such reactions, because we have never seen things act thus before, and they could not have occurred quite so before, because the situations out of which they grow are unique.

Now in such cases we can follow either one of two paths. We may assert dogmatically that novel reactions are necessary as expressions of tendencies which pre-exist to their manifestation; our inability to find them being due to our limitations of knowledge. Thus the whole course of the world would be necessary. This view corresponds with the ideal of science — the possibility of predicting the entire future from the present, and the rigid exclusion of chance from the universe.

On the other hand, we may claim that there is no necessity in the original responses of things, that is, in the first responses to novel situations, and therefore no possibility of predicting them. Tendencies do not pre-exist to situations; they are not merely brought into play by them; they are created by them, not *de novo*, of course, for they grow out of tendencies already extant, yet neither as a mere repetition of them nor as capable of being deduced from them. When once established however, we are able to learn from watching them what the future responses under identical conditions will be. For out of every situation arises an impulse which tends to perpetuate whatever reaction happens to take place. A certain way of responding yields pleasure; this creates a desire for that type of action; hence whenever the situation recurs, the desire now existing must produce the expected result. Only the first responses to new situations

are fortuitous; all subsequent ones are bound to the form of the original.

In favor of this latter theory we urge again our actual inability to predict what a thing will do under novel circumstances. We have to try and see, experiment and await the outcome. The result, of course, grows out of the given situation, but there is no necessity about it; it might well have been otherwise. In the world of human affairs we find sudden decisions, adventurous undertakings in response to untried situations, for which we can find no adequate preparatory motives. To suppose that such motives were already there seems arbitrary. The scientific ideal of reducing every event to law is far from being realized, and no ideal is the measure of the real. All that we need to provide is a basis for such laws as we actually discover, for such inductions as we can actually carry out.

Now such a basis we believe we have provided. For once a certain type of action has occurred with its attendant value, no matter how fortuitously in the first instance, it is henceforth established in the world's rhythm and must be sought anew when opportunity arises, that is, when a like situation recurs. We know, therefore, that the type of action will necessarily be repeated by the agent, given the recurrence of the situation. A single observation of the behaviour of a thing suffices for the discovery of the law of its future action; for the law itself is established by a single act. As a rule, of course, we do not observe an original reaction, but a habit; the law, if new to us, is not new to the thing. And when we infer, not the future behaviour of a

thing from that same thing's past, but the behaviour of another like thing, we are justified in doing so, because the things which we are studying are alike, not only externally, but in their inner impulses and secret motions. In such cases we are not concerned with the free and fortuitous development of impulses, but with the expressions of impulses already in operation and in response to situations ages old. Our ability to infer from the conduct of one thing to the conduct of another under like circumstances is based on the possession by both of the same innate tendencies. Why there are so many things alike is a further problem. In the biological world a common origin explains common nature, and, very probably, this is the explanation of the phenomenon everywhere. But, however this be, the existence of similar things is a fact, and provides a basis for induction.

It is clear that, according to this view, law is a development. The first responses, the original evaluations, are subject to no law. There is necessity and law only where there is a will seeking fulfillment. But under novel conditions we do not know what we want, we have as yet no will; hence there is no necessity that we should react in one way rather than in another. Only when the response is made and an estimation fixed, a habit formed, is there a law. Things first act fortuitously; this action creates a value in the action, a demand for its repetition, leading to the imitation of the past — this is the birth of law. Since no situation is ever exactly like an old one, there is an element of indetermination in all acts; even when we bring an old demand or

principle to bear upon them, there is an adjustment of it unpredictable and non-logical. Since science is interested in the rational and predictable aspects of reality, it always seeks the same rather than the different, the necessary rather then the fortuitous. It seeks a law for every seeming novelty, a habit in every adventure. And since the new always grows out of the old, being a modification of the old in adjustment to new conditions, the type can always be discovered, even in the most wayward of happenings. Yet they can never be reduced to the type.

There are, I think, two fairly persuasive, although not cogent, arguments against this view. In the first place, one might claim that the mere fact that the new grows out of the old involves necessity. Every action, as a reaction, must be determined to be what it is by the nature of the agents. In every case, if the agents had been different, the reaction would have been different; it could not have been other than it was, given the nature of the interacting elements. Yet this argument, plausible as it is, conceals a *petitio*. For what does necessity mean ? It means, as we have said, deducibility. Now there is no possibility of deducing what a thing will do under novel conditions, because there is no law or principle from which the deduction can proceed. The law, as we have seen, is determined by the new reactions, not the reactions by the law; they create the law for similar situations, they are not created by the law. And since there is no law, there is nothing to bind thought; there is nothing which compels us to think of what actually does happen as the sole possible reality. The action which results does grow out of

the situation, it is the work of the agents; it must therefore conform to their nature; but just how, when this conformity means a modification, a recreation of their nature, is not logically determinable beforehand, and is not necessary. And the fact that when the situation is repeated the same reaction occurs does not prove the contrary; for, as we have shown, the necessity which then exists is *post factum:* the first reaction binds all other reactions. Just this is the fundamental mistake of the necessarian: to seek to explain an action by the very law which that action itself creates — surely that which establishes the law is not itself established by the law.

The other argument which may be urged against this view is the following. Every proposition is either true or false; it must therefore be possible to say of every conceivable event that it will or will not happen. Otherwise stated, some one definite description — itself, of course, a sheaf of propositions — must be true of the future. We may not, of course, know what this description is, yet it must nevertheless exist. But whoever is in earnest about the reality of the flux will reject this argument. He will deny that propositions about the future are either true or false; he will claim rather that their truth or falsity is something to be determined, not something already determined. He will affirm, not that every such proposition *is* true or false, but that it *will be* either true or false. A proposition is either true or false either when there exists something real with which it conforms or does not conform, or when it can be deduced from other propositions which are true. Now since the future

does not exist, there is no reality which makes propositions about it either true or false by conformity or non-conformity, and the only deducible propositions are those which follow from laws, but these, so we claim, do not cover the whole field. Truth itself is a growth, like the real, of which it is the image.

Moreover, every law, as a statement of future behaviour, is formal or abstract. For it presupposes the identity of the agent and the situations into which it enters. But neither the one nor the other is absolute. In so far as things enter into new situations, they are altered, and being different themselves, create new situations for other things. Not that these changes render the laws completely void: for, as we know, partial identity may exist despite differences. The general form or rhythm of the behaviour will be the same in the new case as in the old. One could predict, for example, the style of a Corot painting after the artist had developed his manner, but one could not give an exact description of any picture before it was executed, because each "inspiration" was unique. And this abstract or formal character of law does not render it "artificial," and of merely "practical" significance, since the identity which it indicates is as metaphysically real as the differences which make complete description of the future impossible. Yet what does follow is this: there exists no concrete or complete truth about the future such as exists about the past and the present — there is nothing corresponding to history or observation — no genuine foresight or prevision.

The second theory is the one which we ourselves adopt, as being the most empirical, the most cautious, the freest from dogmatic assumption and appeal to the potential and undiscoverable. It is the one which is most in harmony with the adventure and originality of process, yet it provides a satisfactory basis for such inductions as we can actually carry out.

CHAPTER VII

SPACE

IN order to complete our theory of the physical world, we must bring the simple metaphysical idea developed in our third chapter into relation with the scientific concepts of space, matter and force. Since, as we shall find, they are all interrelated, we shall have to study them together; yet we can take our start most conveniently with space.

Although the scientific concept of space is very different from anything given in our more immediate and unreflective experience, it nevertheless has its roots there, which must be found if we would determine its metaphysical significance. Our sense experience comes to us as already spatial, as possessed of extension and volume, with its elementary differentiations in an order. This is notably true of visual and tactual elements. Yet even sound and smell and taste are localized; the first vaguely, the second and third in the nose and on the tongue, respectively. The group of organic sensations are placed inside of the body. The inner life itself is not without its spatial characteristics. We locate our emotions and impulses where their executive and expressive organs are — rage in the fists and reaching in the arms, for example. Thought, memory and imagination are located in a vague way inside of our skulls.

Yet examination of our seemingly naïve spatial experience shows it not to be as innocent as may be supposed; it is, in

fact, full of reflection, of theory. For what, after all, do we seem to find in space ? Things. But things, as we know, are largely constructions — a synthesis of sense elements and meanings. It is doubtful whether, apart from the attachment of meanings to our visual and tactual experiences and their demarcation into separate things, they would seem to be out there, before and behind, above and below. The perception of the third dimension depends largely upon the interpretation of visual sensations in terms of further possible experiences, especially movement and touch experiences; mere light and color are not before and behind, but rather the tree and the house. Sounds and odors and tastes are localized through the sounding, odorous and sapid things with which they are connected. If our direct perception of space involves the conception of things, so necessarily do our thought and memory of space. It is the river, the tree, the town, the mountain that we think of when we think of the space outside and beyond that which lies within the given fields of touch and vision. Dissolve the crystallization of experience into things, and its spatial form vanishes into chaotic indistinctness.

Not only does our common experience of space depend upon the thing, but our scientific concept as well. We can prove this by an analysis of the latter. The fundamental elements of the concept of space are position or point, distance and order. These elements are mutually dependent, and all meaningless apart from the notion of the thing. Position always involves the relations between one thing and other things. The position of the earth is its distance

from the sun and fixed stars, and, in turn, the position of the sun and fixed stars is their distance from the earth and other things. To be sure, we distinguish a position or point from a thing at a point, because various things, as we say, can occupy the same point at different moments of time. Yet this does not prove that a point could exist apart from something at a point; that there are points in themselves. We distinguish, in similar fashion, kingship from the man who happens to be king — we distinguish the individual from his office, and we may even, if we are sentimental, look upon royalty as a quality handed down intact from one ruler to another, just as the crown and scepter are. Yet this does not prove that royalty would exist if there were no kings. Well, position is also an office, capable of occupation by various things at various times. A thing is at the same point that another thing occupied, when it bears the same relations to other things that the first thing bore. Everybody admits that we cannot recover an identical point, except in the sense of finding a thing in the same relations to other things taken as points of departure; but this admission is equivalent to the abandonment of the notion of the point-in-itself — a thing which cannot be found is nothing. Space could have an absolute existence only in the sense that all possible relations, distances and orders were always filled, which would imply, of course, the continuous existence of elements in the relations in question — the existence of a plenum.

That distance is meaningless apart from things follows immediately from the discussion of position. Distance is

always from one point to another, from one thing to another. I can determine a distance only with reference to some starting point. The reversibility of distance, the fact that I can go the same distance either way, implies the possibility of returning to the starting point. But, as we have seen, to recover a point implies the recovering of a thing in the same relations to other given things, and I can determine that these relations are the same, only if I can recover the things which served as a frame of reference for my determination of positions. The reversibility of distance implies, then, the recoverability of things. The dependence of distance upon things has been emphasized from another point of view by Poincaré. The measurement of all distances implies the invariance of the unit of measure taken as standard, that is, the possibility of identifying it in a new experience as the same thing.

The relativity of order to things is also plain. Spatial order is an order of points; but, as we know, points do not exist apart from things; order that is not the order of something is a mere abstraction. Geometry treats of points as if they were existences, but only for the reason that by point the geometer means " some object standing in the relationships to be described." The reversibility of spatial order implies, like the reversibility of distance, the possibility of recovering things; after finding things in the order *a*, *b*, *c*, *d*, I must be able to find them again in the order *d*, *c*, *b*, *a;* or at least I must be able to rediscover those elements which I have taken as a frame of reference, from which new things in the order *a*, *b*, *c*, *d* can be determined.

The metaphysical interpretation of space depends, therefore, upon the metaphysical interpretation of the thing. According to the results of our third chapter, the thing is a complex of sense elements conforming to a certain type and recurring in accordance with a certain law. And, according to the results of our chapter on cause, this lawfulness of the sense elements of the thing betokens the existence of a permanent interest controlling and expressing itself in them. Moreover, although the sense elements in the mind of each individual are unique and different; yet, because they are of the same type and under control of the same influences, we think of them as one. With this interpretation of the thing as a premiss, it is not difficult to go on to the understanding of space. Let us consider again the elements of space.

What is a point? If we survey the sense data of our perceptual experience we find separable wholes within which we can make discriminations, find parts. The smallest of these discriminations, the indivisible elements found, are points. A minimal sense element is a perceptual point, the totality of these is given space. Yet these, of course, are not all the points there are. By means of a movement or other process I can enlarge the extension of things, and so find new discriminable elements between those already found. That which seemed to be single gives place to a whole nest of items. But the ultimate discriminations are not real before I make them. When I usé a microscope I help to create new sense data which were not there before. Why then do I take the fine discriminations to be more real than the gross ones?

Why do I trust the microscope rather than the naked eye? For much the same reason that we believe the touch thing to be more real than the visual thing. As sense data, of course, the gross and the fine points of discernment are equally real; yet we give the latter the preference, because by acting there we can effect more far-reaching results within experience. Our experience, as we know, is partly under our own control, partly under the control of influences which play through it unknown to ourselves. When I act at a point, that is, upon a certain fine element of my experience, the result is partly determined by these foreign forces. To every fine element of my action there corresponds a possible responsive influence in the environing experience. The more pervasive change which results from the finer action proceeds from a wider area of that experience.

Strictly speaking, a point, as we have shown, is only an office; it has no reality apart from a thing at a point. The reality corresponding to the point is the physical thing or bit of a thing. The discriminable parts of the thing, rather than the points, are the constituents of the thing. These constituents, as sense elements, have no reality beyond themselves, yet, as causally determined, they indicate surrounding influences. To the multiplicity of the former there corresponds a complexity in the latter. Our experience is differentiated and deployed in response to the influences which play upon it. In so far as any bit of an object is recoverable, it gives evidence of an abiding force in the not-self which may be exerted again under proper conditions; it expresses a permanent interest which can be reawakened.

The dynamical reconstruction of a thing as a system of particles is the last step in the direction begun by the empirical division of it into parts. Only here the reconstruction has left the perceptual for the purely conceptual level. The particles do not, of course, exist behind the perceptual content; they exist in front of it, so to speak, in the mind of the thinker. Yet they are not without metaphysical meaning. For they indicate, more accurately than the observable differences in the perceptual field, the multiple possibilities of response and control from the environment. The postulated infinity of points in space has a similar significance. Empirically, there exists no such infinity in any perceptual extent. Yet if the scientific hypothesis is sound, there are an infinite number of possible responses which the environment can make to anything which exists in relation to it.

Let us next consider order and distance. Although the spatial order of given sense elements is static, it represents a temporal order of possible experiences. To each of the elements in the static order there is attached a meaning which refers to other elements with which it may be connected temporally. Spatial order is an anticipated temporal order. That which comes first in the one is first in the other; the near is now; the remote is late. Distance is anticipated duration. To every extension there corresponds a movement experience which would realize the end-point. All distances are primarily read from the body, the aboriginal origin of all co-ordinates. The body forms a center about which all the points in space arrange themselves in concentric spheres. The lines which pass through the body to any point in these

spheres are temporal lines indicating successive future experiences. The infinite extent of space is the image of endless time — it is anticipated endless movement.

The reversibility of spatial order and distance, contrasting with the irreversibility of time, does not invalidate the interpretation of space in terms of time. The reversibility of spatial relations involves, as we have seen, the possibility of finding anew similar sense elements. The irrecoverable does not exist for us in space. The hallucination or the dream — except in so far as we attach them to the brain — are not in space, because irrecoverable. An absolutely fluid experience, as Poincaré has insisted, would not be spatial. In order to fix the network of relations, in order to set up the static framework for process, which is space, we must be able to establish relatively permanent *points de repère.* But the irreversibility of time is in no wise incompatible with this. The sequence *a*, *b*, *c*, *d*, *c*, *b*, *a*, as a sequence of concrete individual experiences following each other in time, is irreversible, yet it contains as an abstract moment a reversible order of qualities of experience — this order is the spatial aspect of the whole.

Yet order and distance are no more purely subjective and phenomenal than the point. To every point-particle in the material spatial order constructed by the scientist there corresponds, as we have seen, a controlling force in the environment. The remote thing is not only the future sensation group, but the force in the not-self which will control it in response to my movements and which, even now, is indirectly effective in my experience. In this way, space

represents the cosmos, and not the mere future and possible experience of the individual. The sense experience of the individual is a part of a wider sense experience dominated by foreign forces. Now these forces differ in the temporal order of their action. Some act more immediately, some more remotely upon each other. In order for one to act upon another, it must elicit and secure the intermediate action of third parties. Distance and spatial order represent the temporal relations of interaction and co-operation of these forces. The near are those which act more immediately upon each other; the far require the intermediation of more forces. Other things being equal, the time of this interaction is inversely related to what we call the distance between them. The near act more quickly upon each other than the far, because they are those which require the co-operation of fewer intermediaries. One force *B* is between two others *A* and *C*, when, in order for one of the two latter to influence the other, it must awaken and secure the co-operation of *B*. This involves, of course, a temporal series of interactions beginning with *A* and ending with *C*, and *vice versa*. Thus the spatial sequences or orders represent temporal ones. The metaphysical secret of space is, therefore, this: the cosmos consists of a multiplicity of active agents or forces. These agents can act only through the co-operation of each other. But the time necessary to secure this is unequal for different agents, and is linked up more immediately with some than with others.

The foregoing account of space will become clearer if we apply it to the spatial relations of a man with his fellow men;

for, from our point of view, the relations between men are typical of all cosmic relations. The nearer we are, the more directly and quickly we can co-operate with and affect the lives of each other. When we are far from each other, on the other hand, we require more indirect methods of communication and interaction, more agents and emissaries, and so a longer time. The differences of spatial location of our bodies means the fact that we never act directly and immediately upon each other, but always through the intermediation of other forces, and after the interval of time necessary for their action. We can affect each other only through the co-operation of those forces which make up what we call the inorganic world. To be in the spatial neighborhood of another is to be in the temporal neighborhood of his actions, and to need, in order to influence him, the co-operation of a smaller part of the whole environment.

And similarly with our spatial relations to what we call things, when those things are not present in our immediate experience. Just as you are far from me when it would take a long time for me to hear your voice and see your smile, and to change that voice to a higher key or make that smile into a laugh; so I in my room am far from the tree on the hill when much time would have to elapse for me to get the visual or tactual sensations which would be determined in me by the forces acting there, or for me to be able so to influence those forces by my own acts — such as cutting the tree down, for example — that the sensations would differ or disappear. Just as I locate your activities where you and I can interact most directly, so I locate what I call the tree at the point

where I can most directly and immediately affect the forces which determine in my mind the corresponding sensations. I may get sensations from very remote things — I can, for example, see the sun — yet only through the intermediation of other things; and so I locate the thing where I can directly influence these sensations. The candle is where I can extinguish it; not here where I who receive its light am. And one thing is nearer to me than another when I can control the corresponding sensations of the one sooner than those of the other; the one lies between me and the other when the latter can affect me only by way of the former.

We have space in common because we have things in common, of which space is a law. Thus, to be in the same neighborhood with another means to be in touch with similar tree — road — house-sense elements. To be exactly in the same place with another would involve having identical sense experiences with him, which, of course, is impossible. From similarity of sense experiences we can infer identity of controlling influences, whence the similar sense elements in different minds are located in the same places. Just as I recognize you to be the same individual because you greet me with the same voice and bodily aspect, so I recognize an identical interest as playing through your life and mine when similar sense elements are found in each. The distances from one thing to another are the same for different people because similar movement experiences are necessary in order to pass from one to another in a given time, and because the time-relations of the corresponding forces in their action

upon us are the same. The identity in the order of points means that in order to pass from one thing to another we have to go through similar determinate experiences; in other words, we have to be played upon by the same forces. The common spatial aspect of our experience represents the relations of time and co-operation of the common forces which control it, and our own movements in response to those forces. It is evidence of an interest in the repetition of a certain kind of sense element. There is, of course, never exact repetition, but that union of sameness and difference which is the sign of value. We can understand this duplication if we keep in mind that the sense elements in the minds of various individuals bear a relation to the wider experience which includes them similar to that which parts of each personal experience bear to the whole. Just as I find a value in the repetition of sense items within my own experience — think of rhythms, for example — so nature doubtless finds a value in the repetition of content in various minds.

The theory which we have developed so far enables us to solve the problem of the location of mind. From our point of view, the mind is where it is controlled. Let us consider the location of the sense elements of mind, first. The existence of any sense element depends upon the co-operation of forces which we locate, on the one hand, at the sense organ and, on the other hand, at the stimulus. As a rule, we have formed the habit of referring the sense element to the stimulus; but we can, with better right, refer it to the sense organ. Naïve perception, being more interested in the stimulus, to which the organism must react, locates the sensation there;

whereas the psychologist and physiologist, being more concerned with its bodily determination, locate it at the sense organ. If we keep in mind what is meant by localization we shall not find any contradiction in this duplicity. Spatial relations are, objectively, just relations of co-operation and differences in time of activity of controlling forces; hence a sense element is where it is controlled; and, being controlled by several forces, it has several places of location. Yet since the most immediate and direct control is by the forces which play through the sense organs, the man of science is ultimately right in locating it there.

The activities, on the other hand, are "at" the sensory, motor and association areas of the brain; for their relations of co-operation and time of action are obviously to be established there. Differences of cerebral location correspond to differences in time of interaction among them. The brain is, in fact, just the system of these activities.

Of the scientific concepts to be interpreted, we have covered, in the general way prescribed by our plan, space and matter. We have yet to consider motion, the study of which will lead to a somewhat more profound consideration of force than we have so far accorded to it.

First of all, we must distinguish between the experience of motion and the scientific reconstruction. The former is, of course, a given reality; the latter is a conceptual interpretation, the reality meaning of which the philosopher has to find; and, in order to do this, he must, as in the study of space and all other concepts, proceed from the direct experience as a basis.

In our direct experience, motions may be classified either as changes of our bodies in relation to things or else as changes of things in relation to our bodies. This is a relative distinction from the point of view of an outsider, but from the point of view of the agents it is absolute; for the former are initiated by the self, the latter by the not-self. The former involve changes in the movement sensations, the latter in sensations from the other fields. The movements of our bodies always express a purpose of adaptation or control, secured through a contact with new things, an influx of new sensations. We leave the neighborhood of certain things and get into the neighborhood of others. And this means, in terms of our metaphysical interpretation, that we come under the jurisdiction of forces more favorable to us. When things move relatively to us, the change in our relations to the environment is initiated there, rather than here.

Empirical motions are total individual facts. They begin with a certain configuration of sense experience and end with a new one. We call this, ordinarily, movement from one place to another place; but we must remember that the new place does not pre-exist to our movement. Every place is a certain configuration of sensation — there must always be a thing to mark it; but things are sensation groups which depend upon the body. The places which we pass through on our way are again other configurations, which are not real before our arrival. Every place is a transaction between us and the forces in the environment, and so does not pre-exist; pre-existent are only those agents which are aroused into action by our motions.

The scientific account of motion is very different from all this. It presupposes the independent existence of both space and time, and conceives of motion as a correlation of the two effected by a particle. It breaks up the total empirical body moved into elementary particles, and the total motion into the motions of these. Now this is clearly a reconstruction of the empirical facts. We know that time has no existence independent of motion — that it is itself only a system of motions; that space is a system of things or of relations of time and co-operation of the forces which control things; and, finally, we know that particles are a reconstruction of empirical bodies for the purpose of altering and controlling them — they are prospective and pragmatic, not present realities. The entire reconstruction of motion is a description of the potential, to use the Aristotelian terminology, of that which may become actual under certain conditions. The points to be passed over and the things which mark them *become* actual through motion; and although it is possible for us or for nature to break up the total motion into simpler motions, the latter do not exist until this is done. The conceptual reconstruction has, however, metaphysical significance, in so far as it reveals a wider field of forces in the environment than those which appear immediately in the empirical motion.

Motion is doubtless an accompaniment of all change. For every change is determined by some activity and involves new relations of co-operation and time of influencing other elements. Every change is an interaction, and so must involve such readjustments. The men of science are there-

fore right, it seems to me, in seeking to correlate all change with motion, from which, however, it does not follow that change can be reduced to motion. And one may even go further, I think, and assert that all activity involves motion; for every activity is directed upon and results in some change.

We come now to the last of our group of concepts — that of force. The scientific concept of force, as it has been developed recently, has reached a degree of abstraction removing it far from the concrete experience from which it has arisen. Originally force meant cause. The idea was derived from our own causal activity in relation to the outer world, and implied, directly or remotely, activity. Since all causal activity involves motion, force came to mean, cause of motion, that is, activity governing motion. But, when it was seen that we have no intuition of the activities in nature, the connotation of activity, and indeed of cause, was dropped, and force came to be identified simply with the empirically ascertainable factors in the motion of bodies — with mass-accelerations. Both mass and acceleration are empirical concepts determinable by certain tests. They are both, to be sure, relative concepts, yet they clearly denote facts or qualities of things in their relations to one another.

The purification of the concept of mass of all connotation of activity has been heralded by the so-called descriptive school of mechanics as a great advance; which is surely the case, from the standpoint of strictly empirical science. Yet, as we have shown in our chapter on Causality, it is impossible

to dispense with activity in a final description of change, if, as science intends, the description is to be a means for the prediction of the future. From the metaphysical standpoint, all change is determined through activities, whence the notion of force, in order to be complete, must include that idea. And the popular scientific use of the concept — and even the learned use, unless strictly on its guard — contains this.

The ordinary use of the concepts of gravitation, electricity, magnetism, etc., illustrates this. They all signify something more than the purely observable elements of the phenomena — an admittedly unknown, yet clearly recognized fact of necessity or causal determination. And we, of course, in the present chapter, have used the concept of force with this richer connotation.

The concept of force as mass-acceleration is, in fact, a highly specialized idea belonging to the science of mechanics. It can therefore be applied in nature only so far as nature is mechanical. When we recognize other forces in nature — chemical and vital — we call attention to activities which manifest themselves otherwise than in masses and accelerations. Let us now, however, consider force in this narrower and specialized sense.

Since force is a product of mass and acceleration, we can discover its metaphysical meaning only through an analysis of these ideas. Let us consider acceleration first. What is acceleration ? Mathematically, it is the second derivative of space divided by time; it is the limit of increase of velocity with reference to time. The concept arises through com-

parison of a series of changing velocities, apart from which it has no meaning. Acceleration, therefore, does not describe a state of a moving body, but a comparison of one state with another — a comparison of velocities; it therefore involves the history of a moving particle. From acceleration we are, consequently, driven back on velocity. But velocity itself, being rate of change of position, involves comparison — that between one motion and another. Unless, therefore, bodies have memory of their past acts, both velocity and acceleration exist only for us, not for them. This would not impugn their utility at all; for, in giving us knowledge of the history of things, they help us to predict the future. Apart therefore from the history of a thing, the analysis of its acceleration takes us back to its motion, as the only aspect which can be asserted of it as actual. But we have already studied the metaphysical significance of this. Yet velocity and acceleration are not without their own significance. For they indicate qualities of the activities governing motion — their ability to secure a rapid change of motions, together with the various novel contacts with sense elements which this involves. Acceleration and velocity are, after all, laws of a body's behaviour, and therefore indicate its plans and its ability to carry them out, with the co-operation of others.

As for the mass of a body, it is, on the one hand, a quality which determines motions in other bodies and, on the other, enables it to resist such influences of other bodies as would make for change in its own motion. It is, on the one face, inertia or resistance, and on the other, power of determina-

tion. Our own experience of mass contains these two aspects: the weight or mass of things is that in them which resists our efforts at moving them; yet, on the other hand, our own ability to move them is a function of our own weight or mass. Mass, therefore, indicates power to influence other things and to resist influences — we can give no further metaphysical interpretation of it.

CHAPTER VIII

THE NATURE OF KNOWLEDGE AND THE METAPHYSICAL STATUS OF UNIVERSALS

IT cannot be my purpose in this treatise to construct a complete theory of knowledge; but in this chapter I wish to indicate and defend the general epistemological point of view which I have adopted.

What is knowledge ? All knowledge is mediated through ideas. Now an idea is an activity of the self with a unique power, representation — the vicarious presence to the mind of something else called its object. The idea offers itself as that other; whatever qualities it possesses are in mind not as its own, but as another's. For example, when I have an idea of the sea, I have a vague experience of color and extension, with the sense that this is the sea. Oftentimes there is a seeming presence of an object without any clear experience of its qualities. Thus casually the idea of Paris may come into my mind when, if rapidly crowded out by other ideas, I may have only a vivid awareness of an object without any image of it. Yet originally every idea is at once the seeming presence of an object and also an experience of its qualities; only through habituation and the lapse of time, or through rapid passage through the mind, does the latter become weakened, or even vanish. The more adequate an idea is, the more fully does it reveal the nature of the object, the

more complete is the image which it presents. There are, however, many stages between the mere seeming presence of an object and adequacy. For example, if you tell me that you are going to describe a person to me, I already have an idea of him before you begin; there is a seeming presence of the man in the mind, although not a single characteristic of him has been told to me; when now you go on and tell me what he is like, my idea becomes more adequate, because it supplies the qualities of the object to me; if you render my idea more definite by supporting it with a photograph, you increase its cognitive value still further; nevertheless, your own memory of the person's looks, especially if also strengthened by the picture, is a far better idea than mine.

That an idea can represent, can seem to bring before the mind something which is not itself, can be demonstrated by examining some actual cases and showing that any other interpretation of the facts leads to absurdities.

First, memory. When I remember my friend of long ago it is as if he were present before me; the sight of his face and figure, the sound of his voice, are as if they were there. My memory idea offers itself as a substitute for him; and in its presence I feel again the same emotions that I felt when he was near. Yet, of course, my friend is not present; he died long ago; and, when I reflect, I recognize that my pale and shadowy memories are not the clear and definite face and form of the man I knew. I must grant, on the one hand, the ability of memory to simulate the past — else how could I know that there ever was a past at all? and, on the other hand, I must admit that my memory is not the past, else

there would be no past — all things would be present, and the flux would be an illusion.

Second, our ideas of our fellow men are a vicarious, not a real presence of them. As I watch my friend, see him laugh and move and hear him speak, it is as if his very thoughts and feelings and decisions were present in my mind; and, having it so, I think that I know his soul. Yet his inner life is not actually content of my soul, as my own is; for, when I reflect, I observe that what seemed to be this, when compared with my own inner life which I feel simultaneously, is relatively cool and pale; however vivid and poignant it be, as when I am in full sympathy with him or love him, it is nevertheless like an echo or shadow in comparison with my own. After all, it is only certain ideas of feelings and decisions and convictions, attached to his bodily expressions, which take the place in my mind of the corresponding real events in his. That this vicarious self of the man is not the man himself I know, not only by comparison with my own real self, but also because of the countless mistakes into which it leads me . . . I so often discover that the feeling which seemed to be his was not present in him at all.

Third, imagination is a clear case of meaning. As I watch the performers in the play, it is as if a real prince and princess were walking and talking on the stage — no, not on the stage, but on an English greensward; yet we know that they were dead centuries past. And not the aesthetic only, but the most ordinary imaginings also, like sleep dreams and day dreams, are cases in point. Now in winter I am filled with the fancy that the sun is warm and that I float down a

stream bordered with verdure. Of course, only images are in mind, but it is as if the real river and boat and foliage were present.

All ordinary perception involves representation. When, for example, I see a house, only one side is given, of the rest only images are present; yet what I perceive is the whole house. This means that the images of the sides not seen are to me as if they were given sensations; they undertake to be what they are not; in fine, they represent. But the part played by representation in perception has been so fully treated by me in the chapter on that subject that I need not pursue it here. I may mention, however, the necessity for representation in order to explain errors of perception.

Finally, the concept is a representative idea. Concepts are of two kinds, universal and individual. The universal concept means, that is, undertakes to bring into the mind vicariously, any individual of a certain kind. Thus the concept "blue" is for me not some one blue thing, but any blue thing whatever. Unless, in this way, we were able to represent any individual, a large part of reasoning would be impossible — all that part which depends upon the use of variables and classes. And that the concept does not actually bring its object into the mind, but only represents it, is clear; for what we are able to perceive is always a definite individual, not any individual — a particular blue book, for example, not any blue book. Or again, the idea "blue" is an individual existence in the mind of the person who thinks blue books; but what it means is a universal; hence the idea must be able to represent more than it actually is itself.

The individual concept proves equally the fact of representation. It means not any individual, but *the* individual of such a quality or description. "The blue book" refers not to any or all blue books, but to some particular blue book answering to the description. That I can use an individual concept without having its object as a part of my mind is clear from all those cases where I try to find something to fit a description given me by another person; or when I infer by a process of reasoning to the existence of a thing incapable of direct verification. Thus, "the president of the United States" whom I look for in the crowd but do not see, or "the pineal gland in my brain," are examples of these ideas. There would be no sense in my looking if I had the president before my eyes, and clearly my own pineal gland could never become part of my consciousness. This type of knowledge is what Russell calls "knowledge by description." (*Problems of Philosophy*, Chapter 5.) It differs from memory in being independent of personal contact with the objects known.

In the foregoing cases we have found abundant evidence of the existence of knowledge through ideas; but we have not proved that this is the only type of knowledge. Is there not a more immediate or direct way of knowing — by personal contact or experience with things? The distinction between knowing merely through descriptions, or even through memories, and knowing by actual living with things is often made by the common man as well as by the philosopher. The superiority of the latter type is matter of almost universal assertion; indeed, many feel that it is the

only mode of knowing which really deserves to be called knowledge; the other being a mere substitute or makeshift for it. Yet I shall try to show that all knowledge involves ideas.

First, however, let us ask how much we could know by this supposed other way of knowing. Plainly, only so much as could become content of the mind at a given moment. We could not know by direct experience the content of another's mind, or parts of physical things which we do not have under our eyes, or the past, even our own past; but we could thus know the immediate sense data, the given elements of things perceived through the senses, and our own activities, with the images which are intertwined with them; for all these latter things can become parts of the mind. And to be part of the mind means, as I tried to prove in the first chapter, to be in contact with the self, with the activities. We could know directly, or immediately, or by acquaintance with, that with which we come in contact; that which at a given moment we are grown together with, and form a unique whole with, called a mind.

Recent thinkers, notably James and Perry, have made much of this type of knowledge and have emphasized the fact that it involves the entrance of the object known into the mind. Here there is no mere vicarious presence of the object through the idea; here the presence is "real" — the thing itself is an actual and genuine part of the mind which knows it. Yet the account which these thinkers give of the fact is unsatisfactory, because they have never given a satisfactory account of mind and of what is involved in the en-

trance of a thing into the mind. In chapter one I showed the insufficiency of their reduction of the relation of being in mind to the relation of being reacted to by the nervous system. Besides, direct knowledge involves the self or person, a factor not recognized by these philosophers. Without contact with the self, no mere grouping of sense elements could constitute a knowing of them; and no mere bodily reaction — a purely physical event — could make them into a mind; the elements would remain what they were before, parts of the physical world, with only another special relation among them within that world.

But not any and every contact of the self with things suffices to make a knowing of them; there must be a contact with a special part of the self — with ideas. The contact of my pleasure with blue, the impinging of my desire upon this sweet taste, does not of itself constitute a knowledge of blue or sweet. Knowledge of sense data exists only when they are recognized, classified or otherwise treated by ideas. The seeming noetic character of the other contacts is due to an accompanying contact with ideas. My pleasure in a thing, my desire for it, are simultaneous with some interpretation of it through ideas. The bare presence of an element in the mind seems to involve knowledge because it is impossible to suppress recognition. Even the novel and surprising are not utterly uninterpreted — they fit into some system of ideas, even if a large and vague one. Mere life with things, mere action of desire or pleasure upon them, is not a knowledge of them. The peculiarity of knowledge by acquaintance does not consist in an absence of ideas, but rather in a

contact of ideas with what they mean. It is this which gives to this type of knowledge its poignancy, its fullness. In all other types of knowledge, as we have shown, contact is absent.

Another reason why the mere contact of the self with a thing may be thought to involve knowledge is because the relation which exists between pleasure or desire and their objects is analogous to the relation between the idea and its object. The touch of any one of these activities with its object involves a true subject-object relation; there is a direction of one upon the other, of the self upon the thing; or a coming of one to the other, of the thing to the self; just as in the application of ideas, the idea means the sense datum and the datum fits into the idea. Finally, there is still another reason why ideas are supposed not to function in immediate knowledge — the large difficulty of finding them there in certain cases. Originally, every idea, as already explained, is an image; but this is often attenuated to such an extent that no easily recognizable image remains. In recognition especially, in the daily contact with familiar things, the image tends to be supplanted by a feeling. Even if, as when we look for a thing, a clear image has preceded, the contact with the thing when we find it dissipates the image. Yet the idea remains — the thing comes to us as fitting into something, as fulfilling a function or activity; there is a shock, a contact, an interaction with something which is neither feeling nor volition. There is a going out of the self to meet and greet and appropriate. Even when there is neither the clear presence of an image

nor any application of a name, the duality, the transaction exists.

It is no part of our problem to enter into the psychology of meaning, of the unique power of ideas to seem to bring to the mind another than themselves; yet a consideration of it will help us to a closer understanding of knowledge. There are several theories of meaning which will repay examination.

First, there is the theory of meaning as due to a process of accretion of sensations and images around a given bit of content — this forward and developing movement and enrichment corresponding to that sense of more, of full reality, which is the distinctive character of representative ideas. Thus, the meaning of a memory idea would be equated to the continual coming in of new and richer memories, a process which always occurs when one recalls a past thing or situation. In other words, the meaning of an image is reduced to the process of enriching the image by means of other images. Well, it is of course true that an idea, frequently if not always, does give rise to a chain of associated ideas, whereby it becomes more precise and adequate — one idea leads on to a whole cluster of related ideas. Yet it is impossible to reduce the meaning of an idea to the chain of associated ideas, or to the linking of one element in the chain to another; for the first idea that arises already has meaning. An idea has meaning *ab initio*, before any idea is associated to it. The idea approaches adequacy through association, but its original quality as meaning cannot be thus explained.

According to another theory, meaning is simultaneous rather than successive context. One sensation or image cannot make a meaning, but two can, it is asserted, when one is the meaning of the other. For example, that the side of the house that I see means the whole house is due to the fact that it exists for me in a context of images of the rest of the house, these images, it is claimed, being psychologically equivalent to the house. It is not the transition from one image to another which makes a meaning, as according to the previous explanation, but the fact that one image or sensation is next to another. The objection to this theory, however, is precisely the same as the objection to the last: the image or other mental content which forms the context of the central one itself has meaning, as is the case with the image of the other side of the house in our illustration. If the meaning of the sensation is explained through associated images, how explain that of the images? With reference to the sensation? But surely this would not serve; for the meaning of the images is quite different from the content given in sensation, namely, just that which is not given. It is of course true that a sensation has meaning only when there is an associated image; for sensations cannot, of themselves, mean anything; they are physical objects, not mental activities; they simply are what they are; they cannot also know. But how explain the meaning of the images? We come back again to the old problem. It will not help to appeal to contextual images in the fringe; for these very images also have meaning; how then could you explain their meaning?

The last resort is to attitude, kinaesthetic and affectional. A content has meaning when there is attached to it the same reactions or set of body, or the same mood or desire or other activity, as the object meant would awaken, if itself present. Thus, according to this type of theory, the image of my friend has meaning because I feel towards it just as I should toward my friend, were he here. And the advantage of this explanation is that it seems to cover the cases where mental content has meaning without the clear presence of an image. For example, the picture of my absent friend has meaning; yet no explicit image of him arises when I look at it. And the verbal idea " Carl " has for me the same meaning, although again I cannot always discover in it an explicit image of my friend. What makes the difference between the word "Carl," which has meaning for me who have known the man, and the same word which has no meaning for you who have not seen him? Is it not that, in my case, the word is associated with numerous activities which are recalled when I say it or hear it ? The noetic quality of immediate experience would be explained in the same way; recognition would be the reawakening of old activities. We can express this theory briefly as follows: the meaning of a mental content is the value of the object which it represents. One thing means the same as another, substitutes itself for another, or presents it vicariously, when it acquires the value of the other. Whatever I act and feel the same towards means the same.

Yet, despite its seeming plausibility, this last theory puts the cart before the horse. An idea has the value of its object because it represents; it does not represent the object

because it has an equivalent worth. It is impossible that a value should give a presentiment of an object. The image, the picture, the word could not have for me the value of the original did they not somehow offer me vicarious sight of the object, which the phenomena of mood and reaction cannot do. The arousal of an old desire or feeling cannot give a vision of an object. Every idea, in substituting itself for its object, reawakens the attitude appropriate to it, and so possesses a kindred value; but this does not imply the identity of the idea and value. A reawakened activity would of itself be blind and objectless.

We must, therefore, admit the uniqueness of meaning; yet we can, I think, understand its genesis as follows. The functioning of the body in contact with things is not a momentary event without issue to the parties to the transaction. The thing is transformed in divers ways in which we are not here interested; the body is moulded to fit the thing. This mould or adjustment persists in the absence of the object; it has a double inner side: on the one hand, a tendency to return to the object or keep away from it, according as contact with it was pleasant or unpleasant — desire or aversion; on the other hand, an image of the thing — an idea of it. Just as desire and aversion are echoes of the reactions of the self to the thing, so the idea is an echo of the thing itself. Again, just as every activity is kept in the form of an indelible tendency to its repetition, so every contact with an object persists in the form of a picture of it. The self not only simulates its own activities, positively or negatively; it also simulates the objects of those activities.

And finally, just as desire and aversion contain something of the pleasure or pain of the original activity, yet cannot possess their complete value; so the idea represents, but does not present, its object. Originally, the image is an element in a plan of return or avoidance; it has a practical function of guidance. If, however, the organism is unable to return to the thing which gave it pleasure, the idea still persists as a memory, and the longing or fear that were attached to it are transformed into a merely contemplative sweetness or bitterness. Thus the image is born of a contact of the self with a thing, and has meaning only because of this contact.

Not only is the sense world mirrored in the idea; but the self also can be thus reflected. The activities within the body leave their traces there; and so ideas of the self arise. And just as our ideas of the sense world are originally plans to bring us back to contact with it and action upon it; so our ideas of self are similarly designs to act again as we acted before. But these designs may fail, when the idea becomes a mere memory of past deeds. Or else the elements of ideas of past acts may be combined into a new structure, an intention to novel action; a new tendency projects an image of a new act. If the deed is carried out, the idea was a foreknowledge of the future; if, on the other hand, the deed be frustrated through obstacles in the sense world, or if, because of counter tendencies, no attempt be made to carry it through, it was a dream, an imagined happiness. Finally, the observed actions of the bodies of our fellows also arouse ideas of the self. But these, since they come from without rather than from

within, are referred away to their external causes; they are located in the fellow man's body; they constitute a knowledge of his inner life, not of ours.

This knowledge of our fellow men is much like a dream. Like a dream, the elements of the ideas which constitute it are reflections of activities which we ourselves once carried out or might carry out. We understand the acts of our fellows only on the basis of what we have done or longed to do. And just as in a dream the elements of past deeds are combined to make a new structure; so, through the sight of total acts which we ourselves never performed in their wholeness, we get ideas of desires and feelings which we ourselves never knew. But the idea of the fellow man differs from the dream in two ways. Unlike the dream, it is connected with a sensible presence which gives to it a superior feeling of reality; and, unlike the dream, it happens to correspond to a reality; it is true, at least partially. Yet, in large measure, of course, our boasted knowledge of our fellow men is a dream. Should we waken, what a disillusion! We see the laughter and the motion; the lips move and the eyes smile and the limbs sway; ideas of gladness and abandon arise in our minds. Yet we never can verify them, because we never can make the represented life our own; so perhaps what seemed to be joy in the dancer was only an echo of our own joy of observation. Unconsciously we substitute for the ideas which, ingenuously aroused, would give us knowledge of the inner life of our fellow men our own reactions to their expressive movements and our preconceived notions of how they ought to feel. And so the fellow

man becomes a mere *alter ego*, a reflection of ourselves, and we keep ourselves in a dream.

Ideas are, in the first instance, the images of individual things in the environment. All other types of ideas, imagination and the concept, are derivatives. It may happen, through some process within the organism, that several simple ideas are combined into one idea, to which nothing as a whole in the real world corresponds. The idea will still seem to bring an object before the mind, will still have meaning, because each of its elements was born out of a contact with a real thing; but it will be fancy and not memory, because its total object has never been a real part of the world. Now the concept is also a derivative of images born of a contact with real things. Through constant contact with things, the several images of them become overlaid one with another, so that no single clear picture stands forth; this mass, when associated to a word or other sign, is a concept. The concept is no mere word, because it has a meaning; nor is it a mere tendency to react when the word is uttered, for it offers a vision of the object—not so simple as the single image, yet richer in that it refers to a whole group of objects. The concept may be of simple sense qualities, like blue; or of simple relations, like greater than; or of complexities of these, like chair or mechanical system; in all cases, it is a resultant born of contact with many individual things, born of many immediate blue-, chair-, quantity-experiences. The concept is a condensation of images, and hence the quintessence of one's experiences with the corresponding objects. It is, however, something

more — the construction of the idea of a new object — a universal. The result of this process of elimination and synthesis is a new formation, which henceforth may take the place of the group of individual objects through which it was constructed. The universal has meaning, like the elementary images out of which it was formed; but what it means is no one of the objects which they meant, but something *sui generis*, unique.

The above account of the formation of universal ideas does not pretend to adequacy. We have neglected, for the sake of simplicity of presentation, the social factors in the construction. The individual does not construct these ideas by himself; he learns them, very largely, from others through the process of education. And he receives them fully constructed, with all their parts and properties determined. For him to alter them to suit his caprices is possible; but that would only be to construct new ideas meaning other objects; there would still be the original ideas for him to know and use. For example, a meaning like triangle is not the personal property of any one mind. When I apprehend a triangle it comes to me possessed of properties as rigidly its own, as undocile to my will, as a stone or a star. I accept it as just itself, much as I accept a physical thing. The mathematician is in the same position of learner of its properties as the metallurgist is towards those of crystals. Or consider a law like that of falling bodies; when I learn it I do not invent it; I observe it; I find out its properties and try to view them in their application. Or consider practical concepts, such as liberty or socialism, which have been formed

by so long a process that when the individual reads of them or has them explained to him, he receives them as given things, not as products or inventions. The same attitude holds towards concepts which are applied to individual things, towards singular propositions or truths. When, for example, I study history I apprehend a description of the past which I do not invent, but accept and recognize as having validity quite independent of my wish or will.

At various points in our discussions we have come upon these conceptual or ideal objects: in our chapter on perception, the types through which we interpret the sense world; in our discussion of causality, laws; in our discussion of time, the complex of propositions which make up history. These ideal objects make up a large and important part of our experience, and to any one engaged in the pursuit of science, or in the carrying out of a plan or a cause, they are as real as the sun or moon. But obviously they are not real in the same fashion that sun and moon are real.

And yet, in recent times, by Russell and Moore and their school, the old platonic theory of the reality of universals has been revived. It is the theory that these ideal objects possess reality independent at once of minds and of nature. "There is nothing," says Plato, "... so patent as that goodness, beauty and other notions ... have a most real and absolute existence." (Phaedo, 77.)

If this theory were true it would involve so large and extensive a change in our view of the world that we cannot pass it by without weighing its merits carefully. The theory is based, primarily I think, on an uncritical acceptance of

the realistic attitude towards concepts, which, because concepts are of social origin, is so natural, as we have seen. But the theory does not rest on this basis alone. It is supported by a line of reasoning of a negative sort: the impossibility of reducing ideal objects to psychological or physical facts. The argument against the mental character of universals has been put simply and clearly by Russell, as follows: "We can think of a universal and our thinking then exists in a perfectly ordinary sense, like any other mental act. Suppose, for example, we are thinking of whiteness. Then in one sense it may be said that whiteness is in our mind . . . In the strict sense it is not whiteness that is in our mind, but the act of thinking whiteness . . . In one sense of the word, namely the sense in which it denotes the object of an act of thought, whiteness is an 'idea.' Hence if the ambiguity is not guarded against we may come to think that whiteness is an idea in the other sense, i. e., an act of thought; and thus we come to think that whiteness is mental. But in so thinking we rob it of its essential quality of universality. One man's act of thought is necessarily a different thing from another man's; one man's act of thought at one time is necessarily a different thing from another man's act of thought at another time. Hence if whiteness were the thought as opposed to its object, no two different men could think of it, and no one man could think of it twice. That which many different thoughts of whiteness have in common is their object, and this object is different from all of them. Thus universals are not thoughts, though when known they are objects of thoughts." (*The*

Problems of Philosophy, pages 154, 155.) The plurality and temporal character of mental acts seems to be inconsistent with the unity and independence of time of universals.

This argument is from one point of view cogent enough, but it does not prove what Russell supposes. It shows — and the same thing could be done in many other ways — that a universal, as the object of a meaning, is not a mental act; that when, for example, I think of whiteness I do not think of any one's thought of whiteness, any more than I think of the concrete quale of a flag or of snow. I certainly do not think of my own thought, or of any one else's, or of the totality of thoughts of this kind. What I think of — the intent of my thought — is one, not many; a universal, not a particular. Husserl, in his *Logische Untersuchungen*, has shown, beyond any possibility of doubt, the uniqueness of the universal. Yet this does not prove that universals exist independent of the mind. It proves only that the mind is capable of thinking of things which are no part of the mind or of the physical world. And universals are not the only cases of this. Fairy lore contains a whole world of individuals which are certainly not real. They are, of course, real as somebody's thoughts; but not real as men are real, on their own account, independent of other people's thoughts. The most convincing example of the power of the mind to think objects which are non-existent is memory. Now memory is, *eo ipso*, knowledge of the non-existent. When I remember I certainly do not remember my memory — just as when I think of a universal I do not think of the particular mental act through which it is apprehended. But

surely the object of my thought is non-existent. All of Russell's arguments seem to me to involve this confusion of mistaking a proof that the object of thought is not a thought for a proof that its object exists. When I think of my grandfather my thought and its object are certainly not one; yet surely this cannot be taken for an argument for the existence of my grandfather. If so, just to think of it, would suffice to make anything exist.

Yet such arguments are entirely negative in their scope; they show that no sufficient evidence has been adduced to prove the existence of universals; they do not prove that universals do not exist. The usual method of doing this is to start from some dogmatic idea of what existence involves — to exist is to be concrete, to be perceived, to be a self, and so on. But whatever basis these assertions may have, they do not seem to me to be likely to weigh, without more argument than is usually adduced in their favor, with any one who thinks he has an equally luminous intuition of the existence of universals. The only way to prove that universals do not exist independently is to show that they are created by the mind — to exhibit the process of their formation. We must be able to show that they are of the same type as fictions, with as much and no more reality. And precisely this I claim can be done. For I have shown that, although general ideas are made of other ideas which mean real things, and grow up only through the existence and co-operation of real things, they themselves are constructed by an internal process of individual and social invention, without the co-operation of an object. If it could be shown that for the making of universal

ideas some causal co-operation of their objects was necessary, then it could be proved that the latter exist; but since this cannot be done, and another method of their formation has been exhibited, the assumption of existence is gratuitous.

There is, however, another argument for the existence of universals, drawn from their validity or truth. Because of their truth, universals may seem to have an objectivity which entitles them to correspondence with reality. But it can be shown, I think, that the truth of universals, like universals themselves, is derivative.

For truth, like its opposite, falsity, is primarily a quality of ideas in their application to objects — a quality of judgments. The object of an idea is not true, but only the idea in relation to its object. This, I repeat, is the primary meaning of truth; but upon it as a basis is built another meaning. The true judgments of various people form a class, and so offer the material for the construction of a universal, which may now be called "the truth" corresponding. But the truth of this truth, if one may so express it, is dependent upon the truth of the judgments of which it is the corresponding universal. The idea of such a truth is constructed *post factum*, after the existence of particular true judgments, and gets its quality as truth from them. This, however, is not recognized by the Platonists, who think that a true judgment is an apprehension of a truth, thus putting the matter exactly the other way round. But an attentive examination of the matter reveals that a judgment is not directed towards a truth, but towards a thing or situation. Every judgment is the construction of a description which

takes the place of the object in the mind, that is to say, presents it there vicariously. Subsequently, of course, one may reflect upon the situation, recognize that the judgment is true, and, seeing that other people's judgments are also true, form the idea of an object which shall correspond to all these judgments, in other words, think the universal corresponding. Now in the social process of exchange of ideas and research, for the purpose of giving unity of direction to the thoughts of many minds, only more instinctively than I have described it, this is exactly what is done. But, however useful, it is obviously a highly derivative process, resting upon the employment of ideas in their directly descriptive function.[1]

But what does constitute the truth of an idea? The simplest conception is that of resemblance, the idea is true of its object if it can mirror it in the mind, and so become a substitute for it. In recent times, however, this conception has been subject to attack from many quarters. Royce, for example, declares that mere resemblance does not suffice to make one of two things a knowing of the other (*The World and the Individual*, Vol. I, Chapter 7). Two things, two copies of the same book, for example, may be very closely alike, even indistinguishable to ordinary perception, yet the one does not for that reason know the other. But this criticism overlooks, I think, the unique character of ideas. Under no circumstances, of course, can a mere thing know

[1] This account of truth as a universal contains, of course, a criticism, by implication, of the theory of truth as a quality of independently existing propositions, once advocated by Russell and his school, and ably discussed by Joachim in *The Nature of Truth*.

anything; only ideas can know. Again, it is asked how the truth of ideas can depend upon resemblance when, oftentimes, their objects do not exist for comparison with them, as is the case when the objects are destroyed, or for some other reason cannot be recovered. And it is indeed true that when, for example, I have an idea of my childhood there are not two things in mind — the idea and my childhood; there is only one, the idea. There is not even a separate self or activity which employs the idea as a representative; the activity is immanent in the idea itself; the idea is the I who know. As Spinoza says, "Ideas are not lifeless like pictures on a panel." Nevertheless, when we reflect, we become aware that if the idea is true, it would resemble its object, could we only confront the two, and the actual process of verification, when the objects of ideas exist, consists in confronting them with their objects and comparing them. Whenever, for example, we identify sense objects we establish a resemblance between them and our descriptive ideas. We cannot, of course, identify the past, but, by making use of memories, documents and monuments, we can construct a mental image of it. We demand of our ideas — or better, our ideas demand of themselves — not only that they bring their objects vicariously into our presence; but, in addition, that they provide us with a revelation or intuition of them, which they can do only so far as they would resemble them, if confronted with them.

Another point which Royce makes against the notion of resemblance as an element in the truth of ideas is its abstractness. An idea, like every other thing, necessarily

resembles many similar objects; how then, on the basis of resemblance, can I claim it to be true of some determinate one of them ? How can I claim that it has a unique object at all ? Now this might be a valid objection to a monadistic theory of knowledge and reality, according to which ideas grow up by an inner and spontaneous process in a mind cut off from the world which it is seeking to know, but it can carry no weight against our view. For, as I have explained, ideas are born out of a contact of the mind with things. Knowledge is born and made, as other products are, out of the stress and strain of the world process. The unique object which the idea means is the unique thing which has conspired in its genesis, and back to which we can trace its history.

A final objection to the image doctrine of truth is based on the fact that a large part of our knowledge consists of concepts which appear not to be images in any sense. In what sense for example, it might be asked, is the truth that the earth is so many millions of miles distant from the sun an image of anything ? Or the truth that the earth has a weight of so many million tons ? For a great many people, concepts have little or no image value at all; yet they make up the substance of their knowledge.

Now it must be admitted, of course, that concepts do not always provide people with visual images of objects. But this is no proof of their totally non-imitative character. Things are given to us not only visible, but sounding and odorous and kinaesthetic as well; hence an image in terms of any one of these sense qualities is as genuine as a visual

image. Moreover, concepts are largely symbolic and abbreviative. The distance from here to the sun is such a concept; but its meaning consists of the concrete images of measuring of which it is the equivalent. Apart from the experience and memory of using a foot rule and superimposing it upon some visible or tangible length, apart from some experience of counting, no one could in any sense understand this distance. Many concepts, to be sure, are not images of existing things but, as seems to be the case with chemical formulae, of actions to be performed, such as weighing, measuring and heating, and the expected sensations resulting. They are images of future, rather than of present objects. The use of symbolic concepts has been forced upon us because we have not a sufficient range of imagination to encompass the complexity of the world of the object, and for the sake of mental economy. Yet, I reiterate, apart from possible images and experimental tests, such concepts have absolutely no meaning at all. Their truth depends upon the process of verification; and this is always, in terms of things and processes within experience, capable of being imaged.

Because of the highly symbolic and non-pictorial character of many of our concepts, James was led to interpret truth as the capacity of an idea to lead back to the object which it means. Now this capacity of return is indeed a fact about certain of our ideas. All ideas capable of identification through confrontation with their objects, such as ideas of things in the sense world, are of this order. Ideas of past objects and ideas of our fellow men, which are not capable of this leading, can nevertheless be brought into contact with

what James calls their " next effects." We can bring our ideas of our fellow men into contact with the deeds and expressions of their bodies; we can confront our ideas of past events or objects with their records or remains. We can thus trace ideas along the paths leading to their sources. Yet that the return of the idea to its source cannot take the place of representation becomes clear when we ask ourselves how we recognize the object to which we return. If we had no image, no marks of recognition in our minds, how could we greet it as the thing which we meant when we find it ? All verification presupposes some element of representation. The idea must have first imaged the thing in order for the process of identification to find it to be true.

A final proposed substitute for representation is consistency. But consistency is only a formal character of judgments in relation to one another, and does not determine the truth of any one of them. Every new judgment must be brought into harmony with the system of old, well-established judgments, but the ultimate truth of the system itself rests upon its correspondence with the facts. We cannot accept contradictory reports of eye witnesses; but neither can we believe a story merely because it is consistent; we require a further criterion still — that the story shall mirror the events, and so be capable of verification in them or in " their next effects."

Royce's own theory of truth depends upon the assimilation of meaning to will. The meaning of an idea, we are told, is the will of the idea. I am far from objecting to this definition provided only that the truth which it expresses be

clearly understood. The old-fashioned notion of the genesis of the idea, which recent theory has done so much to dissipate, supposed it to be produced in the mind by a purely mechanical process of registering. But just as every contact with an object not only brings it into the circle of the mind but, in addition, involves a reaction of feeling and will, so every idea when maintained there becomes the center of some affective process. Originally, sun and moon, star and earth were objects of passionate interest, and even the dulling process of familiarization does not succeed in cooling all the warmth of things. And this is true, to an even higher degree, of ideas. Ideas have a passionate birth, and some longing or fear keeps them alive in the mind. They have, moreover, a practical function of guidance or avoidance indefeasible. Yet in asserting all this we do not thereby deny the uniqueness of the representative function. No feeling apart from idea affords any knowledge of its object. What the idea wants to do is above all to represent, to image. This desire of the idea is reinforced by the vicarious presence of a delightful object; but even an aversion to its object cannot utterly quench it. Consider, for example, how we take bad news. We struggle against it with all our might — it cannot be true, we passionately cry. And yet — there is the idea; it persists; it maintains itself; it wills to remain. And this means that ideas have a will of their own and that in proportion to the liberality of our minds we accept this will as supreme in its own domain. We have no will of which the will of the idea is not an integral part; hence we cannot stand outside and coerce it. I do not deny the influence of

desire upon belief; but I do assert that this occurs only through interference with belief's natural course. The proper will of the idea is to be an image, whether the image is acceptable or not; and its fulfillment may involve the disappointment of every other desire.

It is easy to understand the confusion of meaning and will. Every developed desire is connected with a meaning which represents its object, and leads to an action tending to the filling out of the idea in an experience which brings us back to the object which gave us pleasure. Well, similarly, every idea wills return to the object which it represents, longs for a renewal of contact with the thing out of which it was born, and through which it can keep its assurance. Every idea tends toward verification; it cannot rest until it has been tracked back to the reality from which it sprang. Thus the going forward of desire to satisfaction and the going back of the will of the idea to assurance are similar processes, and become coincident whenever desire is for contact with an object of which we have the idea. The satisfaction of the will of the idea in verification is simultaneous with the satisfaction of the special interest which we have in the object. And so the confusion of the will of the idea with the will in general can be easily understood.

A similar misunderstanding besets the theory of judgment as the acceptance or rejection of ideas; these acts being interpreted as functions of the will.[1] For, in the first place, there is often no such activity alongside of ideas; the mere presence of the idea in the mind constitutes belief; the

[1] Compare Rickert: *Der Gegenstand der Erkenntnis.*

idea does not have to be independently accepted; it carries its own welcome with it. Unless we are roused to doubt, belief comes of itself unsought. In reading history, or in receiving news or gossip from his friends, the average person believes whatever ideas are given to him, because they are given to him. Only when some active curiosity exists, some burning desire for the truth, is an idea which fits into the system of constituted beliefs, and so advances the truth, welcomed as a boon; or if it fails to fit, rejected as something undesirable. To be sure, since the course of ideas is somewhat under the control of special interests, it is possible to influence belief by excluding unwelcome ideas; yet there are limits to this. The verified idea cannot be disbelieved. No one can see the sun at midday and doubt that light sensations exist; no one can doubt the existence of his friends. Such instances may seem to be unfair on the ground that they are extreme; but the ultimate grounds of all belief are simple and irresistible. And, of course, the less the special desires control our ideas and the more the will of ideas has its own way, the truer they will be. The love of truth is the only honorable will to believe. And this consists in letting the process of verification and belief follow its own laws, free of the behests of desire. Every belief may bring an additional welcome when it announces the satisfaction of a love; but belief leads, welcome follows. On the other hand, the satisfaction of the interest in truth may be accompanied by the disappointment of all other desires.

There remains for consideration in this chapter one final topic — the value of knowledge. We may put the problem

thus — what is the value of an idea when what we want is reality ? Life — the direct contact of the self with things, the play of the activities with the world, this is what we want. In comparison with this, the possession of ideas seems a feeble affair, a mere makeshift. Who cares aught for the idea of a rose who has roses in his garden, or for the idea of love who has a sweetheart ? And this criticism is not one which is passed externally upon knowledge, as by an outsider; it is a judgment which the idea passes upon itself. For the idea first comes to be in the absence of its object and longs for return to the thing whose image it is. Its very birth is an indication of its poverty, and its own will is a confession of shame of this. For not only do I want direct experience of whatever I have an idea of, because in the idea I get a hint of possible delights — as when hearing tell of sunny southern climes I desire to live there and be permanently warm — but the idea itself longs for contact with its object, in order to get assurance of itself. Every idea is much like the jealous lover, who is not content with his belief in his lady's love won from outward signs, but would fain bring it face to face with her very soul. Does not the idea long for possession of its object in perfect knowledge, just as body longs for possession of body in embrace ? What philosopher has not sighed for complete assurance of the truth through a union of his idea with the world ? To make assurance doubly sure through confrontation of idea with fact is the wish of every idea.

The foregoing paragraph gives expression to what we may well call the romanticism of the idea, the youth of the intel-

lectual life. In youth we discover what we want independent of the conditions of the real; when mature we discover what the world allows us to possess; and then longing for the ideal — for the impossible — gives place to contentment with the actual. And so we reach the stage of the realism of the idea. For since the vicarious presence of the real through idea is, for the most part, all that we can have, if we contemn it, we are left with almost nothing. For of nature we can come into contact with only so much as is in touch with the body; to be present to the whole would involve the spreading out of the body to the dimensions of infinite space. The limit of sensation is the limit of the body; beyond this we can go only through idea. But even if we could get into touch with the whole, we could not keep in touch; for in so far as all things change, they slip away from our grasp; the past, at any rate, we can possess only in idea. Finally, just as the spatial difference between the body and other things makes them inaccessible to us — except in idea; so the separation of our bodies determines a separation of our souls — except in idea.

Now, therefore, we perceive our need of ideas, our incapacity to dispense with them. And perceiving this, we win a new contentment with them. We renounce our mystical, romantic longings and are grateful for what we have. For this is what the idea does for us. First, it gives us a vicarious contact with that part of reality into touch with which we cannot get; and second, it affords us a means of keeping the actual as it slips away from us, preserving it in the only form in which we can keep it — as a vision, a memory. And with

the vicarious presence of the object the idea brings all those values which the object itself would bring into our life, if there. Third, the idea enables us to unite our past with our present. We have not brought this service of the idea to the front as it deserves. All knowledge, even that of things with which we come in contact, involves a recognition or other treatment of them by means of concepts. Now the concept, as we have shown, is a precipitate of past experiences, a fusion of ideas, each one of which was a means for the vicarious retention of some past fact. When, therefore, we apply a concept to a new experience we bring it into union with our whole past; we assimilate, appropriate it. Even if we could get into contact with the pulsing whole as it is actual at any moment, we should not be content. Or, let us suppose that the entire universe is a mind; even so, its life with itself, apart from the idea, would not be complete. For, without the idea, there would be no understanding of itself, no placing of itself upon the background of its past. And finally, through the idea, and only through the idea, are we able to envisage the unity of things. Our contact with reality is a piecemeal contact. Consider our knowledge of the simplest things, say of our own houses. We never get an immediate experience of the whole, of the relation of every part to every part. We get a perception of this and that part, and of the relation of this part to that part; but our knowledge of the totality is a thought, the result of a synthetic activity of the mind. And what is true of such simple things is *a fortiori* true of the larger unities of space and time, society and the cosmos. Our knowledge of all these things is an ideal construction. Since

these, therefore, are the abundant fruits of the idea, let no man, in the interests of what is called intuition, decry them. For if by intuition be meant anything accurate, it can mean only the contact of the self with reality, which, limited as it is to the content of the momentary mind, can produce no one of these fruits.

Despite these services of ideas, certain things are still urged against them.[1] First, it is claimed that ideas dismember what they know, isolating special features or parts from the rest, thus destroying their totality. For example, to have the idea of the head of an animal is supposed to be equivalent to thinking of the head as existing separate from the body. Even to have an idea of an individual at all is believed to be a falsification of reality, implying that the object is taken out of the whole of the world and isolated from its total background. This is the surgical theory of the idea. But knowledge is not cutting. For in meaning an individual, or a part or aspect of an individual, I do not imply that it exists or could exist apart from the whole; I simply designate it in its place in the whole. I mean things as standing in their relations, as elements in wholes. Every idea contains the world frame of its object implicit in its meaning, and can be developed so as to include that. If I mean leaf, I mean leaf-as-part-of-plant-which-grows-in-soil-and-is-part-of-my-total-world. Of course I mean primarily the thing as designated by name; but in meaning it I do not imply any separation of it from the environment; for the environment is implicit in my meaning.

[1] Here and in the next paragraph I have reference chiefly to Bergson's theory of knowledge.

Second, ideas are supposed to eternalize, whereas reality is a flux. Every idea, it is asserted, must have a determinate object; but reality is never fixed; it is a fluid growth. Hence, in using ideas, I ascribe to reality a fixity which does not belong to it; and so I falsify it. But this, I think, is a theory of ideas sprung rather from a wish to discredit them than from any genuine understanding of them. It is like the opinion which one's enemy has of one's self — born of antipathy rather than of the sympathy which brings understanding. For plainly I do not have to mean my objects as static; in so far as I mean growing things, I mean them as growing. I can, of course, recover of anything only the relatively permanent in it; but I can mean more than I recover, as every memory-idea attests. How, indeed, could I have an idea of change or growth at all if I could not mean change or growth? Moreover, the idea itself is no fixed and changeless thing; it too comes and goes, changes and develops — should not its own changefulness enable it to represent change ?

But a still more fundamental charge may be urged against ideas. It may be said that they never afford us certainty except in the few cases where we can confront them with their objects. Does not the idea long for contact with its object in order to win assurance of itself; hence failing this, why should it have any contentment with itself at all ? Is it not possible that, once the romanticism of the intellectual life is over, instead of the realism of thought, scepticism may take its place ? Hence we reach the pathology of thought. Just as the disillusionment of the dreams of youth may lead

to distaste for life, even to suicide, instead of being the preliminary to the construction of a possible happiness; so the idea, awakening to its incapacity to encompass all reality, may begin to doubt its representative power.

The cure in both cases can come only from the enlightened reassertion of the original impulse to activity, its own self-correction. First, as has been shown so often, a universal scepticism on the part of the idea is self-refuting. For the opinion that all ideas are erroneous is itself an opinion, and so cannot maintain itself. And if we limit the scope of the assertion, affirming that all ideas except this one are erroneous, we are immediately confronted with the contrary of this opinion, namely that all ideas are true, which, taken in itself, is as credible as the other. The two opinions therefore cancel each other, and the result is nil. But is not the sceptical opinion better based than the other, since we have so often found our ideas in error ? Yet have we ever found an idea in error except on the testimony of some other idea which we have believed ? And the general power of the idea to represent truly is well known to us; for, in the case of our ideas of mental content at least, we can bring the idea face to face with the object and see that what was meant is there. And a reflective doubt that ideas which mean things beyond the mind may be all in error is incapable of destroying belief. For, independent of this reflection, these ideas assert themselves; they carry within themselves their own standards and tests of assurance; a gratuitous scepticism cannot reach down and touch this primitive self-confidence. We find it impossible really to doubt the existence of our fellow men or

of a physical non-self in some form. The pyrrhonic doubt has only the force of a play supervening upon the seriousness of the idea, and incapable of corrupting it. The desire of the idea for absolute assurance is only the wish to increase that native confidence in itself which the idea cannot fail to possess.

CHAPTER IX

THE THEORY OF RELATIONS

THROUGHOUT all of our studies we have come upon the fact of relation. We have found mind related to the body and to nature, and all existences related to one another in space and time and causality.

How shall we interpret this omnipresent fact of relation? What is implied as to the nature of things by their being related? In other chapters we studied some of the more concrete relations; here we wish to solve the problem in its most general form. We shall proceed in a free fashion, reverting to the original facts; but, in large measure, we shall follow along paths already established; for many results already won are secure. No apology is offered for the abstractness of much of the treatment; for scope is gained by abstractness, since whatever can be proved of relations generally must hold of every concrete case. Yet we shall not neglect the vivid instance where the universal truth is best revealed.

Let us start with the view of relations as mere properties of individuals — the theory of monadism, of which Leibnitz still remains the most persuasive advocate. The world, it is assumed, is a plurality irreducible; any statement of relation, any mode of unification of things, is only a convenient short method of combining independent statements about each thing. You can always analyze a proposition express-

ing a relation between two things into two propositions; and such a proposition does not express one fact, a single situation, but two facts. If, for example, I say "*A* loves *B*," I mean that *A* has certain emotions and purposes and that in *B* likewise there is a characteristic attitude of mind. That is all. Being related is not being bound by a tie, the forming of one by two, like the joining of hands in a dance, but a mere taking of attitude towards each other, like the preliminary courtesying of partners. All causal relations, for example, are simply statements of change in one individual following upon, or in response to, changes in another individual. The proposition "*A* causes *B*" means that event *A* in the life of individual *X* is followed by event *B* in the life of another individual *Y*. Causality is not necessitation, constraint, a dragging of one by another; it does not involve the contact of the interacting agents. It is a free response, like a dialogue between self-sufficient individuals aloof.

As for ideal relations, such as greater and less, like and unlike, monadism has a similar interpretation. The statement of relation is a condensed statement about each term of the relation. If, for example, I say that two blue things are alike, I mean that the one is blue and that the other is blue. The "and" here has no objective significance; it does not unite the terms in themselves, but only in my apprehension of them. The relation, again, is a response, only not a response in action, but in thought. If I say that *A* is greater than *B*, I mean that *A* possesses one extent and *B* another, and that the effect of both upon me is a certain reaction or feeling of "greater-than." Every ideal relation, therefore, is

analyzable into an objective component, consisting of qualities of the related terms, and a subjective component, consisting in the feeling of relatedness, which is the seeming unification.

Bradley and Russell have subjected monadism to valuable formal criticism. Take Bradley's critique first.[1] Monadism, we have seen, interprets relations as statements of qualities supposed to inhere in ultimately real individuals. Whenever I affirm a relation between A and B, I ascribe a quality to A and a quality to B. But consider either of the terms, say A. To some extent at least, A is independent of its relation to B, and therefore must possess at least one quality on its own account. Hence A possesses at least two qualities. Or if, as I think Leibnitz believed, A's qualities are all derived from its responses to other things (an untenable view, as we shall try to show), since there are more than two things in the universe and since each must respond to the others, A must, for this reason also, possess several properties. Each individual is therefore complex. But now, what of its various qualities ? The problem of relations between things, with which we started, breaks out afresh between the qualities within each thing. We must, if consistent, reduce our individuals each to a new plurality. If, for example, we assume that the ultimate individuals are selves, we must conceive of them as a mere collection of sensations or other psychic atoms. Hence they cease to be the real individuals which we had supposed them to be. The effort to reduce relations to the terms related results in the destruction of the terms them-

[1] *Appearance and Reality*, Chap. III.

selves. Herbart's view is the sole issue — there is only the multitude of the absolute simples — unity is an illusion.

Royce [1] has proved the untenability of this, the final consequence of monadism. For, even if unity is an illusion, the illusion of unity is at least real. And whose illusion is it? Is it perhaps mine? If so, this cannot mean that I am a complex individual of which the illusion is a part; for, according to monadism, there are no complex things. Hence the illusion must be a simple ultimate element belonging nowhere. If any sort of distinction were made between the illusion and the rest of the self, a complex individual would be admitted to exist, and with it the old problem of relations. No; the illusion must be allowed a free, unencumbered being. Yet let us look at it more narrowly. Is the illusion a bare and simple thing after all? The illusion is of *A* related to *B*, of *A* united with *B*. I can, therefore, distinguish parts in the idea itself. An idea of *A* related to *B* cannot be absolutely simple, but must contain distinguishable aspects. Hence, once more, I must pursue the process of reduction. And, if I do, how is the illusion of *A* related to *B* possible at all? How can such a meaning be distributed among the atoms of an idea?

Hence, when carried out ruthlessly, consequentially, monadism involves a denial of all complexity and is unable to account for that which is given as a starting point — the appearance of unity. In the self, in our ideas, there is a given complexity, a reality of relations irreducible to atomic quality. At present, however, no one accepts monadism in

[1] *The World and the Individual*, vol. i. Supplementary Essay.

its ultimate form. A new theory, pluralistic idealism, a compromise form of monadism, yet still dependent on Leibnitz, has taken its place. Yet, before examining this, I wish to consider Russell's argument against monadism.

Russell [1] argues that monadism is unable to explain the difference between a symmetrical and an asymmetrical relation. For consider the asymmetrical relation "greater-than." If you seek to analyze it into quality *a* possessed by *A* and quality *b* possessed by *B*, you do not offer any interpretation of the sense of the relation; you do not tell us whether *A* is greater than *B* or whether *B* is greater than *A*; for all that we know, the relation might hold either way, that is, might be symmetrical. Now I do not think this a cogent argument against a thoroughgoing monadism. Monadism must suppose that size is something absolute, a quality like blue or green. The relatedness, including the sense of the relation, would be only a reaction of the observer upon the two qualities. Asymmetry would be a subjective mode of feeling, not an objective fact, the mind pitched in a certain way, different in the case of symmetry. Furthermore, the edge is somewhat taken off of the argument by Royce's discovery that every asymmetrical relation can be reduced to a symmetrical one.[2]

The contemporary way out of the difficulties of monadism is to limit the application of the principle. One type only of complex individual is admitted, the self, in which relations are real; for there unity is a matter of direct experience and

[1] *The Principles of Mathematics*, sec. 214.

[2] "The Relation of the Principles of Logic to the Foundations of Geometry," in *Trans. Am. Math. Soc.*, July, 1905.

an atomic constitution is palpably false. Selves are the atoms. The relations between selves, however, are to be interpreted in strict monadistic fashion as qualities of the latter. Bradley's dialectic argument does not apply because the possibility of the interrelation of many qualities is granted in the case of the self — the dialectic is arrested at this point.

The arguments for this position go back to Leibnitz. The initial assumption of monadism is granted; there must be real individuals to compose the substance of the world and to afford a support for relations. But genuine individuals are discoverable only in the case of selves, which alone possess an indiscerptible unity. Turn the attention to any other empirical thing; it is no true individual; only arbitrarily, by means of your selective, interested attention, is it separated from environing things. Or regard the thing internally; you can cut it into halves, each of which will serve you just as well for an individual; and these halves may be again divided, and so on. Such a thing possesses no individuality which marks it off as one from other things, and no internal unity forbidding division. Moreover, empirical things are only presentations of the self; they have no being of their own. But selves, in contrast to things, possess all the attributes essential to individuality. At every moment consciousness is whole; its distinctness from other things is not a matter of arbitrary external interest and selection; it is an indivisible distinguishing; and the unity also is no arbitrary imposition from the outside, but a self-felt unity. You can, of course, distinguish elements in the self; but you have to

recognize that they could not exist separate; that they are more or less artificially made; that the whole alone is given. Hence the self is the only real individual; the others are constructions of the self to serve its purposes, formed after the analogy of the self.

After the individual has been identified with the self, the interpretation of relations proceeds much after the fashion of rigorous monadism. A purely subjectivistic interpretation of ideal relations is required by the theory. For example, the likeness or unlikeness of two sense data or of two personalities must be interpreted as "feelings-of-relation" in response to these facts. Spatial or dynamic relations of things within the mind are to be conceived differently, however, for there the relations are of elements of the self; hence, since the self is allowed to be a real whole, the connections between its elements must be allowed to be as real as the elements themselves, as genuinely empirical and substantial as they. As for causal and other real relations between selves, they are interpreted as responses in the fashion already expounded.

The first thing that gives one pause when one scrutinizes this modified monadism is just the fact that it is based on the limitation of a principle in general accepted. One inevitably begins to inquire whether the limitation be not arbitrarily imposed; one wonders whether a principle found to be faulty within the self must not also be inadequate between selves. One would think, I should suppose, that a satisfactory theory of relations would hold everywhere. At any rate, it is plain that modified monadism stands or falls with the adequacy of its interpretation of the relations between

selves. These we shall proceed to examine, after which we shall be led into another theory of relations.

Every one will grant, I suppose, that there are at least three relations between selves: the causal, temporal and noetic. Let us begin with inquiring into the pluralistic treatment of the first. Suppose I speak and you hear or I walk and you see me walk; then your auditory and visual sensations are connected with my voluntary muscular sensations. Now, for monadism, since each of these events is within a different mind, and since minds are separate and there is nothing real besides them, the relation of causation can exist only as some fact in each of the minds between which, as we say, it holds. Yet what can this fact be? For there seems to be nothing besides the events; there is event *A* in one mind and event *B* in another mind; that is all. It is of course true that *B* follows *A*, and follows regularly. But mere sequence is not causation, even when sequence is habitual; there must be, in addition, activity, necessity. To this, of course, the monadist has his answer ready: "Fact is the sole necessity; or rather, necessity is the subjective side of fact. The habitual sequence of *A* upon *B* constrains the mind to infer from the proposition '*A* exists' to the proposition '*B* will exist soon after.' The logical relation of implication between the propositions which state the facts in question is the causal tie between them; and the constraint felt by the mind in passing from one to the other is the necessity which you seek." But, as we have shown in our chapter on Causality, in order that there may be some basis for confidence in such implications between propositions,

there must be some objective necessity in the facts which the propositions report. A logical relation is valid only because of some real relation. And the truth that *B* has often followed *A* in the past does not guarantee that it will do so in the future.

This, I think, is the heart of Lotze's famous critique of interaction conceived monadistically.[1] It is impossible to understand, once you have conceived of individuals as monads, how there can be any influence of one upon another, any real tie between them. Ward,[2] in his answer to Lotze, misses this point entirely. If we grant, he says, that individuals are "in sympathetic rapport" we obviate the difficulty. But what is sympathetic rapport? Is it anything more than just a renaming of the fact of habitual sequence? Does it include that constraint, that necessitation, which makes of causation something more than mere habit? If it does, how can it exist between individuals which are in no sort of substantial contact with one another? The notion of causation is derived, like all other notions, from certain personal experiences, of which it is the reflection. Now, in our own life we find that one thing grows out of, is forced into, made out of some other; that there is necessity in this process because it embodies a conation; that this growing and making and constraining is in and upon elements which jostle and jolt and keep in contact with one another. Such is causation as we know it in our lives. Snap the contacts and the unifying purpose, and the whole thing becomes incomprehensible.

[1] *Grundzüge der Metaphysik*, 1883, sec. 48.
[2] *The Realm of Ends*, Lecture X.

Monadism involves, in effect, a denial of causality between events in different minds, for which mere correlation is substituted.

We are thus brought to the second type of relation, the temporal, admitted to obtain between events in different minds. How does monadism interpret this? Of the two fundamental temporal relations, contemporaneity and sequence, it will be sufficient to consider the latter. Since the sequent events are each in a different mind, there cannot exist between them, of course, that experienced relation, called by us contact-sequence, which we observe between events in our own minds. The monadist must conceive of it according to his own doctrine of relations as a mere "feeling of relation" invoked in the mind which knows it. For monadism, there can be no real order in events belonging to different minds; there can be only events with their characteristic qualities; their order is simply a form which is imposed upon them by the apperceiving mind. The proposition "*A* follows *B*," when *A* and *B* are events belonging to different minds, can mean nothing more than that *A* has one quality and *B* another, and that the knowledge of the two together makes a certain impression on the human mind — an ordinal feeling. Thus time becomes subjective, a mere "tendency to feign" or fiction. Causal relations between events in different minds vanish into temporal relations, and these vanish altogether. Only when some real contact between the elements of the world is admitted to exist can there be a real relation of sequence between them. Then, through the mediation of the intervening substance, an

event in one mind and an event in another would be connected by the same sort of contact-sequence as exists between successive events in a single mind. There would be only one sequence — between successive phases of the one universe, of which what we call separate events and minds would be only parts.

Last, we have to inquire how modified monadism interprets the cognitive relations between minds. It is perhaps possible for one to deny causal and temporal relations between minds conceived of monadistically. The conception of the universe as a multitude of separate lives, each running its own course unaffected by the lives of others, while wholly unreal, is, perhaps, not utterly unthinkable. One might conceive of the apparent interactions between minds as due wholly to the chance conjunction of events resulting from the internal development of each. If, for example, you seem to influence my life by your thought or example, the change in me may really be due to some spontaneous growth within, which just happens to coincide with the expression of your thought in teaching or action. Such an accidental harmony of events is at least a stateable doctrine. But it is not possible to deny cognitive relations between selves. For, even if your life is without any other real influence on mine, if I can affirm your existence, I must have some knowledge of you. How can pluralistic idealism interpret this knowledge which one self has of another ?

Monadism is, of course, committed to a representative theory of the knowledge of other minds. Since minds are existentially separate, the knowledge which one has of

another cannot imply that the mind which knows possesses the life of the other, but only ideas which mean or represent that life. Now whenever an idea knows an object there is some relation between the two by reason of which the idea knows this object rather than that; the idea and the object are not on the same level with reference to each other that they are with reference to the rest of the universe; there is some distinguishing communion between them. I may interpret this relation variously as resemblance or causation. Suppose I interpret it as some unique resemblance between the two, by reason of which the idea may take the place of the object in my mind. How then would monadism interpret this? In accordance with the scheme of interpretation to which it is committed, the relation must be reduced to qualities of the terms related. Suppose, for example, that the idea is of you laughing, formed by me through the interpretation of sensations of my own which I call your body, and that the object which it knows and resembles is you laughing; each, therefore, has the quality of laughter. Yet it seems impossible to interpret the resemblance of idea and object in this simple fashion. We grant that when two things are alike they have each a certain quality; but they are alike only when they have "like" qualities. The monadist's answer to this objection is, of course, that the element of likeness in the situation is just a reaction of the mind which knows them to the terms together. But "together" — is not togetherness itself a relation? "To be sure," the monadist would reply, "but the togetherness is just the co-presence of the two terms in consciousness; it is one of those experien-

tial relations, which modified monadism is prepared to admit, holding only when things are in consciousness. The resemblance between idea and object is the feeling which I have when I get the idea and the object into the one unity of apperception." But, according to the representative theory of knowledge, I never can get the object in mind; I can possess only an idea of it. The resemblance between idea and object turns out to be the resemblance between my idea of the object and my idea of the idea reflectively obtained. Hence, resemblance cannot be asserted between idea and object. If now the monadist persists, declaring that this is still possible because, since the idea takes the place of the object, whatever is true of the idea is true of the object, and therefore whatever is affirmed of the idea of the object and of the idea of the idea is true of the idea and the object, we call his attention to the fact that, in his reply, he is covertly using the very relation of representation which he set out to explain. He seeks to explain representation in terms of resemblance, but, in order to explain resemblance, he is driven back again upon representation.

There is no way open for him to interpret representation in terms of causation; he cannot say that an idea means its object when the latter controls it in his mind; for he has already denied the existence of causal relations outside of the mind. The monadist can get no further than the pre-established harmony of Leibnitz, which is simply a renaming of the facts. He points to correspondences, of which we have always been aware; he does not give us what we seek — linkages. If now, as a last resort, he declares that knowledge

is just the existence of an idea and the existence of an object, with no relation at all between them, failure is instantaneous. For, as Royce[1] has urged, the mere existence of two things does not make the one a knowing of the other. What makes the idea an idea of that one thing rather than of another thing? Apart from some ideal relation like resemblance or some real relation like causation, knowledge is unthinkable. Scepticism or subjectivism is the logical outcome of monadism. Just as time and causation become mere forms of the spirit without objective validity, so knowledge becomes a mere state of mind undetermined by and unrelated to the world which it pretends to know. The possibility that all our boasted knowledge be only a vagrant dream or an insidious lie becomes more than a vain suggestion.

The failure of monadism compels us to seek elsewhere for a satisfactory theory of relations. An alternative view, apparently the simplest of all, is to accept relations as ultimate. This view has today the high authority of Russell.[2] A pluralism, not of terms, but of terms and relations is supposed to be ultimate. The terms are either simple, corresponding to the atoms of monadism, or complex, capable of being reduced to simple terms in relation. By means of this general scheme, things of any order, even of infinite order of complexity, can be built up. The task of science is defined as the discovery of the ultimate elements and relations in all things and situations. For example, space is analyzed into simple elements called points with relations of order and

[1] *The World and the Individual*, vol. i, Lecture VII.
[2] *Op. cit.*, passim.

distance between them. These simplest elements with their relations constitute wholes — extents of space — which may themselves stand in relation to other things of like order of complexity, and so create the final whole of space. Or consider the self; this is analyzed into elementary sensations bound by relations temporal, causal, and associative; and, through its relations to other selves, it may itself be an element in a whole of higher order — a society.

No discussion of this, as of all other theories, would be satisfactory without reference to Bradley's [1] critique. This critique contains two main parts. The first is as follows. If you accept terms and relations as ultimate, you really fail to do what it seems self-evident that you must do — you fail to bring your terms into relation. For, let us consider any complex situation: A related to B, symbolized as ARB. Then, according to the theory in question, A is one thing, R is another and B is a third, each being just what it is distinct from the others. Yet surely, A and B, and B and R, must be related: A has the relation to B, and B has the converse relation to A. There is then a relation, a new one, between A and R, let us call it r. But if now we consider A and r, the same situation confronts us. And plainly this process can never end: there must exist an infinity of relations between A and R. But, argues Bradley, an infinity of relations between A and R is equivalent to no relations at all; the logic of relations adopted results in the destruction of all relations; it is therefore self-contradictory, hence, false.

[1] *Op. cit.*, passim.

Both Russell [1] and Royce [2] seek to evade this difficulty by maintaining that the infinity of relations involved does not destroy relation: *R* relates *A* and *B* in the first instance, and the other relations implied by the original one do not destroy its integrity. But the force of Bradley's argument is not thus overcome, I believe. The point that is not met is this: If you take relations as distinct and ultimate, you get a situation of infinite complexity for your thought, whereas empirically no such thing exists. If, for example, *A* is father of *B*, no such infinitely complex situation can be observed; in so far as relations are directly experienced, they bind elements quite simply. This is the contention of James,[3] although he fails to perceive that it is no objection to Bradley, but rather a confirmation of Bradley's view. To state the argument in a new form: even if the infinite regress is not inconsistent with itself, it is in contradiction with the nature of reality as presented in our experience.

The root of the difficulty lies in treating relation as if it were itself an individual. When so treated, of course, it must be brought into relation again with the original individuals related. The infinity of relations pointed out by Bradley is the natural result. To defend this, as Russell does, is to persist in the original error. The relation is not one thing and the two terms two others. This may seem to be the case only because we use an individual term to designate it. A relation is a mode of union; it is not itself a thing which

[1] *Op. cit.*, sec. 99.

[2] *The World and the Individual*, vol. i. Supplementary Essay.

[3] *The Thing and its Relations*, "Journ. of Philos.," etc., vol. iv, January 19, 1905.

could be united with another thing. When, as the result of some triumph, a man's self is filled with pride and exultation, there is surely a relation between his thoughts and his emotion; they are permeated with it; and we recognize immediately the union which is present and directly experienced. But there is no experience of a relation between this relation and its terms. What we experience is the union of thought and emotion, not the union of the union and the emotion. Russell does not assume, I suppose, that there is a complexity of this kind in immediate experience, but only in experience reflectively considered. But the point of interest is whether the account is a description of the actual situation; and as such, as we have seen, it is false. How it seems to arise in reflection we have already indicated. In the description of the situation we use a concept of relation which, as concept, is an individual thing; we can therefore inquire into its relation to the concepts which indicate the individuals related. This relation will then be found; it will be a new one directly experienced on the plane of thought. If now we wish to designate it, we have to make use of another individual concept; whence the same situation arises again, and so on *in infinitum*. But throughout we have been dealing with the concepts used in the description of the facts, not with the facts themselves.

Bradley's[1] well-known argument against relations, or rather against the theory of relations as self-subsistent entities, is as follows: If A, R, and B are distinguishable, then A, for example, must have some nature independent of

[1] *Loc. cit.* For another discussion of this point, see beyond, on page 260.

the relation R in which it now happens to stand; yet it cannot be wholly unaffected by this relation; for, if it were, the latter would be totally foreign to it. Hence A must have one part as term in relation and another part as term in itself. Call the former a and the latter b. But, in accordance with the theory of relations under discussion, a and b must themselves be related, hence the problem breaks out afresh. Our original term A turns out to be infinitely complex; its relation destroys its simplicity; there are no simple terms.

At present the favorite way of avoiding this difficulty is to deny that a term is affected by its relations — relations are "external." This is quite in line with the theory of relations as ultimate. A term is just itself, whether unrelated or in relation; the acquirement of a new relation or the loss of an old one does not affect its nature at all. The inadequacy of this answer consists in its variance with the plain facts of ordinary experience. No object with which we are familiar remains identical after the acquirement of a new relation; the relation never leaves the term unaffected. No man is the same after he has accepted a new office, undertaken new duties, entered a new club, and so on. For example, no man is the same after marriage or parenthood. The falsity of the theory of relations as external is palpable in the case of social relations. But it is no less striking in the case of physical or psychical relations. The weight, heat-energy, even size and shape of physical things is absolutely dependent on relation to other physical things; it is even impossible to define these qualities apart from relations.[1] In the realm of mind there is

[1] See, for example, Stallo: *Concepts and Theories of Modern Physics.*

no contact with a new object, idea or emotion that does not penetrate into the very core of the self, transforming it, not merely as a whole, but in its several parts, coloring each. Moreover, it is plain that relations and terms are not indifferent to one another, from the fact that all terms cannot stand in all relations. A stone cannot hate a man, a thought cannot be heavier than an emotion. Not only do terms depend on relations, but relations depend on terms. Love, for example, can subsist only between animals, romantic love only between members of the *genus homo*. And finally, no relations can subsist at all without terms.

In his famous critique of Bradley's theory of relations, James [1] objects to the use of concrete relations and situations in the discussion of the internality or externality of relations. Such a use, he argues, involves an appeal to physical, social and other such facts which complicate and obscure the purely logical situations under discussion. For example, he says that it is wrong in considering whether change of spatial relations affects things to point to the obvious thermal and gravitational alterations involved. The reply to this seems to me to consist in emphasizing the fact that there are no purely logical relations. Logical relations are only the most abstract features of real physical, social and psychical relations. The logical relation of antecedence and consequence, for example, so fundamental in all order, does not exist in itself; what exist are such concrete relations as before and after in space and time, greater and less among quantities, precedence and subordination in rank, and the like. Yet it is

[1] *The Thing and its Relations.*

possible to argue the theory of relations from an abstract logical point of view; yet not, I think, with anything like the same vividness.

We may sum the arguments against Russell's view as follows: (1) You cannot treat relations as independent facts, because if you do, you really fail to relate individuals; thus interpreted, relations fail to perform their obvious function. (2) Individuals are themselves not independent of relations. In so far as all things are related, they are at least partly made by relations. (3) Relations are not independent of individuals; for particular relations can exist only between particular individuals.

We turn now to the last current attempt to interpret relations — the monistic. This view is best represented by Bradley and has found its keenest critic in Russell.

The view is as follows: any statement of relation between individuals is to be interpreted as a statement about a whole which they form, as the ascription of a quality to them all together. The real subject of a relational proposition is not any one of its terms, but the whole which they constitute, and the relation asserted is a predicate of that whole. Whenever we seem to find individuals in relation, the real fact is the existence of one individual, of which the former are members. A relation is a quality of a total situation. In so far, then, as things are related, they are subservient and secondary to the whole which they form, and any quality, which they may possess through being related, they derive through membership in it. Relationship is thus reduced to quality of a whole, and, since all things are related, individuality is

reduced to membership in the one absolute individual, the universe.

Let us apply this theory to some concrete cases. The relations between members of a family imply their existence as members of an individual of higher order — a family spirit — which determines them to be what they are. The love that may be between them is not a mere sentiment of the father, mother, and children severally, but a feeling which pervades the whole, and in which they share. They do not create it; on the contrary, it informs and uses them as its instruments. Or if, on the other hand, there be strife in that family, that too is a dissension in the whole, an experience not existing distributively in the members of the family, but qualifying the whole, and through the whole, the members. Those that love are made into one through their love, and in loving express not so much themselves as love itself, which uses them as its organs. Causal relations, again, imply the existence of a whole which includes all things. The supposed interactions between the parts of this whole are really only qualitative changes of its single nature. When consistently carried out, as Russell has shown,[1] this view results in the denial of any real individuality short of that of the universe. For in so far as two things are, as such, different, they must, since difference is a relation, make a whole of which difference itself is a quality. Difference is not, therefore, a character of things which are different, but of the one thing which includes them, and through including them makes them different. Hence even difference is determined by the whole, and all real individuality vanishes.

[1] *Op. cit.*, secs. 215, 425.

The monistic theory may seek a psycho-epistemological as well as a logical basis. All knowledge begins with the whole and finds parts only subsequently. For example, we know the human body first through its activity as a whole; it is the man, the total attitudes and movements, with which we start. We then proceed to distinguish the various limbs and organs according to spatial solidarity and differentiation of function. The division of the organs into tissues and of the tissues into cells is a later acquisition. Only recently have parts been discerned in the cell itself. Throughout, the procedure has been from the whole to the parts. Logically the whole from which we start is prior to the elements which we subsequently discover. The failure to recognize this is responsible for many of the difficulties of physiology and biology. Exactly the same process has taken place in the study of the self. We start with the self as a whole, the first and most indubitable piece of psychological knowledge. The distinction of the various kinds of elements, sensations and feelings, and the modes of their combination in association or active synthesis, is secondary to the prime discovery of the self. The failure of associationism and psychological atomism has its origin in the failure to perceive that in passing from the self to its elements we do not destroy it; it remains the primary reality, and its efficacy as a whole persists and has to be reckoned with.

Russell's *Principles of Mathematics*[1] contains several logical arguments against the monistic theory of relations. The first is as follows: Consider A in relation to B, symbol-

[1] *Op. cit.*, sec. 215.

ized as ARB. Suppose that R is an asymmetrical relation, that is, a relation such that if ARB is true, then BRA is false. Now "the monistic theory of relations holds that every relational proposition ARB is to be resolved into a proposition concerning the whole which A and B compose — a proposition which we may denote by $(AB)R$. . . . The proposition A is greater than B, we are told, does not really say anything about either A or B, but about the two together. Denoting the whole which they compose by (AB), it says, we will suppose, '(AB) contains diversity of magnitude.' Now to this statement there is a special objection in the case of asymmetry. (AB) is symmetrical with respect to A and B, and thus the property of the whole will be exactly the same in the case where A is greater than B as in the case where B is greater than A . . . in the whole (AB) as such there is neither antecedent nor consequent. In order to distinguish a whole (AB) from a whole (BA), as we must do if we are to explain asymmetry, we shall be forced back from the whole to the parts and their relation. For (AB) and (BA) consist of precisely the same parts, and differ in no respect whatever save the sense of the relation between A and B. 'A is greater than B' and 'B is greater than A' are propositions containing precisely the same constituents, and giving rise therefore to precisely the same whole; their difference lies solely in the fact that greater is, in the first case, a relation of A to B, in the second, a relation of B to A. Thus the distinction of sense, that is, the distinction between an asymmetrical relation and its converse, is one which the monistic theory of relations is wholly unable to explain."

This argument from asymmetrical relations might seem to have lost all of its force here, just as in the case of the monadistic theory, through Royce's discovery already cited that asymmetrical relations can be defined in terms of symmetrical ones. Royce has shown how that most general of all asymmetrical relations, the relation of antecedence and consequence, can be defined in terms of his perfectly symmetrical *O*-relation; whence it follows that the order systems of space and time, the implication of propositions, the inclusion of classes, the greater and less of quantities, all of which seem to depend on asymmetry, are really definable in terms of symmetry. But doubts have been raised against this reduction of asymmetry to symmetry. For, consider a very simple case, the order of three points on a line. Call the points *A*, *B*, and *C*, and let them be in this order. Now at first sight the order seems to be definable only in terms of some asymmetrical and transitive relation such as "before," the two propositions "*A* is before *B*" and "*B* is before *C*" defining the order of the terms in question. But if we make use of the perfectly symmetrical relations "next to" and "not next to," it is plain that we can express precisely the same facts; the same order of elements is given by the logical product of the three statements "*A* is next to *B*," "*B* is next to *C*" and "*C* is not next to *A*," the last proposition being necessary to insure that the series be an open and not a closed one. But now, have we actually redefined the order without any covert assumption of asymmetry? That something of the kind has been done can be seen if we consider what would be the definition of the order *CBA*,

in terms of the symmetrical relations "next to" and "not next to." Suppose we take the converse of each of the above propositions, beginning however with the last one, and forming their logical product. We then get: "*A* is not next to *C*," "*C* is next to *B*," "*B* is next to *A*." And this is the definition which we seek. But now, since the original propositions are symmetrical, and the relation of product between propositions is also commutative and symmetrical, our new definition is precisely equivalent to the one from which we started. As a mere inspection of the case suffices to show, the symmetrical definition is as good for the order *CBA* as for *ABC*; hence, in itself, it does not provide for the distinction between them. As Royce himself puts it, the distinction between an asymmetrical relation and its converse, hence the very existence of an asymmetrical relation, depends on the choice of an origin. Whether we shall read *ABC* or *CBA*, the direction or sense of the order, depends wholly on whether we choose *A* or *C* as a "base." This determines whether *C* is before *B* or *B* is before *C*.

The results which follow from this discussion are of the utmost importance. First, there is the fact — which however we do not use here — that there is an aspect of every ordinal situation which can be expressed in symmetrical terms. Yet this does not prove, as Royce asserts, that the distinction between a symmetrical and an asymmetrical relation is a superficial one; for, as we shall show, the choice of a base, upon which the existence of asymmetry depends, is not arbitrary, but grounded in the very nature of reality. What is of capital importance to us just now is the fact that

in order to get the meaning of asymmetry, the sense or direction of a relation, it is necessary to have recourse to some definite, particular element in the whole which the related elements form. Hence the precise point of Russell's objection to the monistic theory of relations remains, despite Royce's discovery. It constitutes, in my opinion, a fatal objection to extreme forms of monism. It proves that the whole cannot predetermine the complete character of the parts, that you cannot describe the whole as whole, neglecting the individuality of the parts, and get all the meaning which it contains.

Russell's [1] second objection is as follows: Monism presupposes that all statements of relation can be interpreted as the ascription of corresponding predicates to the whole formed by the elements in relation; that is, that all propositions can be resolved into subject-predicate propositions. But " a predicate is either something or nothing. If nothing it cannot be predicated, and the pretended proposition collapses. If something, predication expresses a relation," which, by the way, is also asymmetrical, thus involving the theory in contradiction with itself, and entailing the first difficulty.

Again, if every relation is reduced to some quality of the one whole, the universe, we are no further towards a final reduction of relations than when we started; for the qualities of the whole would themselves stand in relation to one another. A situation would exist like that pointed out by Bradley in his objection to monadism, with the universe substituted for the many separate individuals.

[1] *Op. cit.*, sec. 426.

A final difficulty, also due to Russell, is the following: — *ARB* implies, according to monism, that there exists a whole of which *A* and *B* are members. There is then a relation — that of membership of *A* and *B* in the whole — still on our hands to interpret. Apparently we have got no further than we were at the start. We have simply shifted the burden of interpretation from the relation between the elements to the relation between the elements and the whole. If now the monist goes on to interpret this relation in terms of his scheme, he meets with unwelcome consequences. The relation of *A* to the whole of which it is a member becomes a mere quality of the whole *AB*. That is, membership in the whole *AB* means simply the possession by the whole of a certain quality. In other words, the individuals *A* and *B* reduce to qualities of the whole — they disappear as individuals. And yet this consequence is impossible. For the relation of membership in a whole is asymmetrical; in order to understand it, therefore, one is driven from the whole to the individuals; one has to admit their existence as such. Thus the argument against monism from the nature of asymmetrical relations can be applied in the case of every relation; for each involves, even when symmetrical, the asymmetrical relation of the individuals so related to the whole which they form through relation. If, however, in monadistic fashion, one retains the reality of the individuals, while maintaining the sufficiency of the interpretation of the relation of membership in a whole in terms of qualities, affirming that the relation means simply that the member possesses a certain quality and the whole another quality, it

is obvious that what one does is equally disastrous — one leaves the whole and member disunited, two separate individuals, side by side, not one in the other.

A concrete illustration will perhaps clarify this last argument. Suppose the relation to be interpreted is that of father to son. This implies the existence of a whole, a family, of which the father and son are members. But how interpret the relation of membership which they bear to the whole? If we follow out the monistic theory we must affirm that membership in the whole means the possession by the whole of some quality — is, in fact, a quality of the whole. The family becomes the sole individual; the members, mere "organs of its spirit." If, on the other hand, we perceive that this sort of interpretation is mythological, that the family is created by its members and does not pre-exist to them; then if we would still maintain the sufficiency of the interpretation of relations in terms of qualities, we must simply affirm that membership in a family means the existence of one individual, the family, and the existence of other individuals, father and son, each possessing qualities corresponding to their relationships, and what we reach in the end is the separate existence of three individuals, father, son and family.

Russell's [1] own statement of this argument is, I think, not flawless. Russell puts the difficulty thus. Suppose you seek to interpret ARB as $AR(AB)$. Then you must proceed to interpret this new relational situation as A in relation to the whole composed of A and AB. But this whole, according to

[1] *Op. cit.*, sec. 215.

monism, is not the same as AB. Whence you get $AR(A, AB)$. But plainly you have your task over again; you are falling into the infinite regress. Now the existence of the regress is the matter which I doubt. It arises from the supposition that the whole composed of A and AB is a different whole from AB. Russell believes that all monists are compelled to make this supposition; but this, I think, is hardly the truth. The two wholes are the same; just as when one class includes another, or one extent embraces another, the logical sum of the two, part and whole, is the same as the whole. It is difficult to see what could be added to or subtracted from the whole to make it different, by adding to it one of its own parts, already included in the original whole. The two wholes are different in the statement, but not in reality. Russell supposes that all monists are committed to this view because they maintain that the whole is not identical with the logical sum of its parts. This, however, is a misunderstanding of the ordinary monistic position. When a monist says that a whole is not the sum of its parts he means, if he has any explicit meaning at all, that when elements acquire relationships, and so become involved in a whole, they are altered from their original natures, hence are not the same in the whole as they were outside of it — the whole is not identical with the mere arithmetical sum of the elements as they were before they became its members. And this seems to me nothing less than a statement of the truth — the elements in the whole are not the same as they were before they entered it. Yet the whole is the logical sum of its own parts, of the elements as they now subsist in it. And

the relation of whole and member, the relation which we are now studying, is not the relation of the elements before they were members of the whole, but of the actual elements of the actual whole which now includes them. And no monist, to my knowledge, ever maintained anything different. The attempt, then, to interpret membership in a whole after the ordinary monistic fashion does not involve an infinite regress; it does involve, however, the consequences which were pointed out before — the loss of the individuality of the members or else the separation of them from the whole. The first alternative is impossible for the reason which Russell himself urges — the relation of membership has no meaning unless you preserve the individuality of the members, and the last is obviously unreal. These consequences vanish, as we shall see, as soon as relation is understood to involve the equal reality of individuals and the whole, together with the union of the former in the latter.

So far as I know, no sufficient answer has been made to these objections of Russell, and they constitute, in my opinion, a perfectly valid proof of the falsity of monism.

The foregoing critique of theories of relations implies a positive theory of our own, which we are now in a position to develop. The dependence of our theory on all the views which we have rejected will be evident. But this can be nothing against our view; for it would be strange if the different theories did not each contain an element of truth, since they have been framed by men with a vast experience in the problems at issue and with no other motive than the love of truth.

We must begin our account by declaring the sense in which we use the term relation. Relation is used in contemporary logic to denote the class of couples which exemplify the relation in question, just as one may use blue to denote the class of all blue things. This extensional meaning is used by Russell in the formal development of the theory of relations. Whatever working advantage it may have, it is obviously a secondary meaning; it presupposes, as Russell clearly understands, a meaning of relation closely analogous to that of class concept, through which an ordinary class of things is defined. Indeed, the defining function through which a class of couples is created is absolutely correlative to the function which defines an ordinary class, the only difference being that in the case of relation the function has two variables: "x is a ϕ," or $\phi\ (x)$, corresponds to "x, y have the relation θ," or $\theta\ (x, y)$. But here ϕ and θ are both universals, the one being, say the predicate "blue," the other, the relation "precedes." But what I shall mean by relation in this discussion will not be a universal, but any concrete instance of a universal. Just as I may use the concept "blue" to denote the concrete quality of a real thing, like the sky, so I may use the concept "precedes" to denote the concrete precedence of A when compared with B, A and B being real men.

Right here, however, I am involved in controversy. Russell maintains that all relations are universals, that every relation is precisely and numerically the same in all cases of relation, that, in fact, there are no instances of relation. Before examining Russell's arguments, I will state certain

reasons which lie close at hand to render it improbable. In the first place, the notion of a universal without instances is so strange as immediately to excite suspicion. One is familiar with the denial of the existence of universals and the attempt to reduce them to the multitude of their instances; but the existence of a universal without instances would be an unparalleled phenomenon. And, empirically, it seems plain that a relation is just as much differentiated by the pairs of elements between which it holds as a sense quality is individualized by the different individual things which are characterized by it. If the green of one leaf is not numerically the same green as that of another leaf, so the relation of ruler to subject in England is a different relation from that which holds in Germany, and even the royal relation to one man in England is not the same as to another man — not the same, for example, to Asquith as to Balfour. Every relation between unique pairs of terms is a unique relation, which of course does not prevent its being an instance of some universal.

The argument of Russell [1] is based on the analysis of the relation of difference, where the relation does not denote difference of quality, but bare numerical difference, in virtue of which individuals are two; that is, it is the relation that would hold even between precisely similar things. The argument is this: " even if differences did differ they would still have to have something in common. But the most general way for two terms to have something in common is by both having a given relation to a given term. Hence if no

[1] *The Principles of Mathematics*, sec. 55.

two terms can have the same relation it follows that no two terms can have anything in common, and hence different differences will not be in any definable sense instances of difference. I conclude then that the relation affirmed between *A* and *B* in the proposition '*A* differs from *B*' is the general relation of difference, and is precisely and numerically the same as the relation affirmed between *C* and *D* in '*C* differs from *D*.' And for the same reasons this doctrine must be held to be true of all relations; relations do not have instances, but are strictly the same in all propositions in which they occur." In a note Russell indicates the real point of this argument: "the relation of an instance to its universal, at any rate, must be actually and numerically the same in all cases in which it occurs."

This argument plainly rests on the definition given of similarity. But this definition does not, I think, involve the consequences which Russell draws from it. Two terms are indeed similar or have something in common when the same universal is related to each in whatever way one may express the relation of the universal to the particular. But why does this definition involve that the relation in question should be precisely and numerically the same? Is it not sufficient that they be two relations of the same type? That is, that they be both relations of an individual to the universal in question? Now to this Russell of course objects that in referring to relations as being of the same type, one is making a circular definition; for to be of the same type means nothing else than to be similar. We raise here one of the most difficult and debatable problems of the recent

development of logic. But it seems as if Russell's own latest theory, that of *Principia Mathematica*, the so-called theory of types, permits us to show how this seeming circularity is only seeming. For it is impossible to give a definition of similarity that should cover all cases. The similarity of two individuals is on a different plane from the similarity of two relations. Two terms are similar, if they possess similar relations to a given term, in particular, to a given universal; two relations are similar, if they possess similar relations to their universal. These definitions are not circular or tautologous because the similarity of individuals is different from the similarity of relations, and the similarity of relations of relations is again different from both. The paradox and the infinite regress involved here are precisely the same as in the well-known case of the class of all classes, and they are solved in precisely the same way; in the case just cited, the solution being the recognition that a class of classes is not an ordinary class and cannot be treated as one. The whole doctrine of types is indeed a recognition of what Hegel so strongly insisted upon: the inseparability of sameness and difference. Relations are always the same when they belong to the same universal, but they are also and indefeasibly different in so far as they hold between different individuals.

From this discussion I therefore conclude that there is no reason for believing that relations are universals without instances, and hence that in every case of relation a unique, that is, an individual concrete relation is involved. It is with these and not with the corresponding universals that we

shall be concerned here. Let us now proceed to the systematic interpretation of relations.

First, whenever there is a relation between individuals a specific character is conferred on each by the relationship; or, more accurately, part of the meaning of being related is always the possession of certain characters, which we shall call relative or acquired characters. Thus part of the meaning of "*A* is predecessor of *B*" is "*A* is (predecessor-of-*B*)" and "*B* is (successor-of-*A*)." These propositions, as Russell points out, are directly involved in the original statement. The very linguistic form of the proposition permits of this analysis; the entire latter part of the proposition is predicated of the earlier term of the relation, which may properly be called its subject. Every concrete case of relationship is an illustration of this fact. As we have already observed, social relations are the most obvious instances. To be father of means in part to possess certain characters correlative with others involved in being a son. This aspect of the meaning of relationship is rightly insisted on by the monadists; but they go astray, as we have seen, because they seek to reduce the whole meaning to it.

But now, although in all cases of relation the presence of such acquired characters is involved, it is equally clear that the nature of the individuals related cannot be equated to these characters. In all cases some non-relational characters render the individuals independent, in part, of other individuals and of relations. The concrete situations of our experience bear this out. Let us examine several of these. Take the case of one thing being larger than another. What we

call the size of a thing is certainly not independent of comparison with other things. It is well known that our conception, nay, even our perception of size, is the result of numberless comparisons, that is, relations. Yet, even so, we must admit a purely qualitative aspect of bigness, spreadoutness, voluminousness. Or take the case of one thing which is predecessor of another. It is always richer than this relationship. It derives part of its nature from it, yet surely not all. You can destroy the relation or give it the converse — make it successor — and it will still be in part what it was before. We find in every case that comes to our experience that related elements are not wholly made by the relations into which they are seen to enter. And we have no reason for supposing that this has been different in the past. Into the making of every element the contact of other elements in relation has entered; but in every case the element has started with a nature not yet made by the relationship. Go back as far as you will in the process of the making of anything you know, you will always find alongside of the acquired, relative, or dependent, the native, original, or spontaneous.

There is, to put the matter in another way, some truth in the view of relations as "external." A consideration of the various sense qualities enforces this most clearly. Take colors, for example. The quality of each color is certainly not unaffected by its juxtaposition with other colors, upon which its significance for feeling strictly depends, as every student of pictorial art understands, yet if, without ever having seen color before, one were to open one's eyes upon

the blue of the sky, surely a distinct and specific *quale* would enter into experience. And if you put a color and a tone together in experience, you certainly do recreate the nature of each; yet in so far as one item is still color and the other sound, there has remained an aboriginal essence not made by the relationship. Of course it will be objected that color depends upon relation to eye and stimulus. But do we know enough about this relation to show that the quality depends wholly upon it? But suppose we knew all the relations of each thing, would there remain any aspect of individuality not made by these relationships? I see no reason for thinking that the real situation is other than what we find it to be in our experience. We find a multitude of related elements. Each has a nature. When we study these natures we find that they are for the most part relative. The more we study the more relativity we discern. Yet we never discover complete relativity.

The possession of acquired or relative characters by individuals is thus an essential part of the fact of relation. That it is not the whole of this fact is clear from the criticism of monadism. There is at least the further fact of unity which monadism, as we have seen, denies. The necessity for unity emerges, however, from all those considerations which prove the insufficiency of that doctrine. Mutual modification, the acquirement of new characters, is dependent on unity and inexplicable apart from it. The situation *ARB* means not only that *A* is predecessor and *B* is follower, but that the two elements are in union with one another. Without union how could the one be predecessor of, and the other follower of,

the other? Relative characters conceived to belong to a separate individual are only partially meaningful; in order to complete their meaning it is necessary to have recourse to the other individual of the relationship; their presence in one individual implies its union with the other. To take another illustration. If *A* is greater than *B*, why of course *A* has the property of being greater and *B* has that of being less. But *A* is not merely greater, but greater than, and *B* is not only less, but less than. Individuals cannot be greater or less unto themselves; they are greater and less with definite reference to other individuals, in union with them. Again, the fact that *A* is father of *B* means the possession by *A* of certain characters, certain sentiments and purposes. But *A* is not a mere father; he is father of *B*. This implies union of *A* and *B*. To say that unity is subjective is to involve oneself in the absurdities already recounted. It is as objective as the existence of *A* and his relative characters. Apart from its union with other things, an individual has only its native characters. Thus apart from union with *B*, *A* has bigness, but is not greater than; or *A* is a point, but is not before *B*; or *A* is a man, but is not a father. In our discussion of monadism the necessity for unity was proved with especial force for the relations of time, cause and knowledge.

On the other hand, the theory that relations are ultimate facts is an overemphasis of unity as a necessary aspect of relation. Because of the unity which they imply, you cannot reduce relations to qualities of the related individuals. Yet you cannot treat relation as something over and above the relative characters of individuals and their unity. Just as

soon as you do this you begin to treat relation as itself an individual and then you fall into all the difficulties which we recounted in our critique of Russell's view. Russell[1] himself raises the most important of these when he asks, what serves to unite *A* and *R* and *B* in the proposition *ARB* ? He answers, a certain unity, indefinable and unanalyzable, which distinguishes *ARB* from *A* and *R* and *B*. But clearly this statement of the situation is redundant. Relation and unity are not two facts; unity is one aspect of the complex fact, relation. There is no reason for asking what unites *A* and *B* in the proposition *ARB*, for *R* itself does this. The unity of *A* and *B* is given in their being related. You cannot demand the unity of *A* and *R* and *B*, because *R* is not another fact besides *A* and *B*, but just that unity which you are seeking between them. Relations are modes of unification of elements, not further elements demanding unification. Despite the countenance which linguistic usage may seem to give to the view, relations have not — to use the language of Leibnitz — one foot in one individual, another foot in the other, with a part stretching between. Relations are not thus suspended in the air; they are supported throughout their whole length; there is no part of them which does not belong somewhere. They are neither divided up among the terms, as Leibnitz thought, or suspended between them, as Russell would have us believe, but characters of the terms when united. We should not think of the unity which relation involves as a link or a tie or as glue, as a thing which externally affixes itself to elements and thus unites them.

[1] *Op. cit.*, par. 54.

We should think of relations as rather running through terms, as embedded in them, or as threads upon which they are strung; or if we cannot help thinking of them as bonds, we should picture them as so tight that they cut into the flesh and leave no space between.

A couple of illustrations will illumine this discussion immediately. Suppose some impulse or passion contends with a principle in the mind of a man. The struggle of the two is what we should call their relation. Yet if we examine the concrete reality before us we shall not find that this relation has any existence alongside of the two forces; it is rather a character of each in its connection with the other; it is that which makes them contending rather than peaceful forces. Again, if A is greater than B, greater than does not exist alongside of A and B; it is a character which A possesses in its togetherness with B when we compare them. You cannot find it anywhere between them; its whole self is distributed among them — as greater than, a character of A, and as less than, a character of B — in their union. The feeling of relation of which James speaks is a quality of elements in their union, not an independent something alongside of them. Relations have a peculiar instability. They are certainly not individuals; they are too secondary to individuals and too unsubstantial. Yet they are with equal certainty not mere adjectives of terms. They are something more than each taken singly; they embrace and unite them, giving color to each.

Of course in so far as we recognize unity as a fundamental category, we agree with Russell in denying the sufficiency of

the notions of individual and quality for the description of reality. Yet this does not imply that we regard the notion of relation as unanalyzable. Unity is irreducible, but not relation. Relation is a complex concept susceptible of just the analysis which we are giving of it. The reality of unity I take to be unmistakable for two reasons: the failure to dispense with it in any attempt to describe reality — a failure which we have, I hope, abundantly proved; and the immediate evidence which experience itself offers of its presence. I find, for example, the unity of intensity and hue in any color, or the unity of various extents of space in a larger whole of space, just as surely as I find these extents or qualities themselves.

A further fact which is involved in the existence of relations is this: wherever there is a relation there is an individual of higher order of which they are members. Consider *ARB*. The situation not only involves the possession by *A* and *B* of certain properties, called by us relative properties, and the unity of *A* and *B*, but also the existence of an individual of higher order, which is neither *A* nor *B*, but the couple, the order which they form through their unity. This new individual possesses properties which neither of its members can claim as its own — it is a couple, an order, with sense or direction. Consider some other illustrations. Take a line in space. The elements of the line have relations of distance and order; together they constitute a new individual, the line, with properties certainly not possessed by any point — it is dense, continuous and of such and such a length. Or consider a family: it has a social status not possessed by

its individual members. An army has a strength and array which is not possessed by any single man. A color scheme has a unity and an emotional significance which cannot be predicated of any single color. The converse of this is, of course, also true. The elements of the whole have severally properties not possessed by the whole. The single colors in the picture have hue, but the picture has none; the men in the army are conscious, not so the latter; the side of the triangle has length, the triangle only area.

This last point represents the modicum of truth in the monistic theory. That theory is, however, wrong in the conclusions which it draws as to the relation of the individual to the whole of which it becomes a member through relation. The monistic theory supposes that the whole completely determines the character of the members. This view of the situation rests on the supposition that the individual is, in every case, made by the relations into which it enters. But, as we know, this making of the individual by relation is only partial — it applies only to the acquired properties of the individual, the original qualities are not thus made. And far from it being true that the whole completely determines the nature of the individual, it is rather true conversely that the individuals determine the nature of the wholes which they form. As we have seen, you cannot impose all relations upon all individuals. The sort of relation which one thing bears to another, and so the sort of whole which they compose, flows from the nature of the things themselves. An appeal to illustrations makes this convincing. Social relations have their bases in the instincts and mental faculties of

individuals. Of course it is true that relationships once established modify instinct and mental faculty. I do not mean to argue that individuals are ever isolated, ever free from allegiance to some whole. What I am contending for is this: when we watch the genesis of new relations, of larger individualities — and the world process consists very largely of just this — we perceive that they are established from below in the first instance, that they grow out of the natures of the elements which are to compose them. To be sure, as the relation becomes established, the individuals undergo modification, and they have already owed part of their natures to the wholes of which they were members; for every new whole grows out of the bosom of some old whole; but the new whole does not pre-exist to its members, determining them; rather they, with the spirit of adventure upon them, go forth to create it, which only then comes into being. A study of the more abstract relations confirms this view. Equality of size changes to inequality through the expansion or contraction of either one of the quanta so related. The new relation grows from within, springing from the nature of the terms of the old relation, it does not grow from without, imposed by the new one. Just so, likeness may become unlikeness, and *vice versa*.

That the whole cannot tyrannize over the parts Russell has conclusively proved from the nature of asymmetrical relations. Suppose we consider the simplest case of asymmetry, when the relation is dyadic, as in our illustration, *A* precedes *B*. Then, in accordance with our interpretation of relation as we have so far developed it, there must exist a

whole formed by the related elements, possessed of a character of its own, and each of the elements must possess acquired as well as original characters. The whole, to use the language of Frege, is a "couple with sense." But how can you determine its sense or direction? Not by a mere regard of the whole *AB*; for this whole, as whole, is perfectly symmetrical with reference to *A* and *B*; whether *ARB* or *BRA* is entirely indeterminate. Only when, as we have seen, you take some one element in the whole as starting point or base and regard both from its point of view, going from the one to the other, can the asymmetry be determined. Hence the sense of the couple, its nature so far at least as this character is concerned, is dependent on the parts. And that the choice of a base is not arbitrary, and so not without clear metaphysical significance, is proved by the cases of irreversible asymmetry. Temporal and teleological relations — among the most significant of all — are the most striking instances. You may survey the time sequence forwards or backwards, but you cannot grow either way. You may look back from the goal to the plan, but you cannot act in that way according to your choice; your choice is determined for you by the nature of things. Even if the choice of a base were always arbitrary, the point for which we are contending would be proved. For a world which left choices free, which made arbitrary decisions possible, would not be one which absolutely predetermined everything.

We have used Russell's argument from asymmetrical relations at this point for its bearing on individuality, but Rus-

sell himself uses it, as we have seen, to refute the monistic reduction of relation to quality of the whole formed by the related elements. Now, despite the insufficiency of this view, it nevertheless possesses the modicum of truth which we have indicated, and it is incumbent upon us to show that asymmetrical relations offer no difficulties. The proof consists in demonstrating that the whole formed of the related elements, when the relation in question is asymmetrical, possesses the predicate which we call sense or direction, and not the elements taken singly. That this is true is clear from the following examples. If *A* precedes *B*, we have a couple with sense, if notes are one before another in time, they form a melody, if a man goes from one point to another, the class of points over which he travels constitute a path with direction, and in every case the sense or direction — that upon which Russell lays so much stress — belongs to the whole made by the elements and not to any one of them. A single element cannot have direction. It is of course true, as we have seen at length, that the sense of the relation is determined by the elements of the whole; but this fact does not dislodge it from the place where we have put it; for, although its nature is determined by the elements, it is none the less, after it has been constituted, a character of the whole and not of the elements. The direction of a melody or a journey is determined by the starting point, yet does not belong to any one of the individual elements, whether first, last or intermediate, nor does it subsist as a further element between them, but characterizes the whole, the melody, the journey.

Every extreme form of monism, issuing in the theory that individuality is an illusion, that distinctions are only artificial, is untenable. The monists are right in their contention that the whole is the first thing in knowledge, but wrong when they go on to affirm as a consequence of this that the individuals which make up the whole are unreal. Sometimes this contention is supported on *a priori* grounds, sometimes on grounds more empirical. It may be argued,[1] for example, that in proceeding to the elements of the whole, singling them out, designating them with names, one necessarily wrenches them from the whole in which they belong, and so, after all, gets nothing quite real, but only something artificially constructed. I cannot see, however, that this argument is cogent. It rests on a queer way of interpreting analysis after the analogy of dissection, as if the process of thought were a real dismemberment of things. Thinking is not cutting; it is discovery; and in discovering the elements of a whole, I leave them there; I do not even think of them as existing apart from the whole; I simply become more vividly aware of them in the whole. Moreover, it is perfectly possible to be aware of a whole and of its elements at once. When I perceive a couple of stakes in an order, I can be aware at once of the two as a group and of each one in its individuality. And when, for some purpose, I become exclusively attentive to the elements and neglect the whole, I do not effect any real dismemberment of it; I do not take the elements out of it and so destroy both; I go to them, they do not come out to me. Instead of supposing that individ-

[1] Both Bergson and Bradley afford abundant examples of this.

uals are constructed by us, we ought to perceive that the world presents them to us. Our fellow men are such individuals. To be sure, the fellow man comes to us as living and breathing in the larger whole of nature which surrounds and supports him; yet in that whole he stands out as a true unity, a real individual.

The fact that everything of which we have experience is not only itself a whole of lesser elements, but also a member of a larger whole, itself possessed of the same formal structure, proves only that this too is an individual, an individual not of lower, but of higher order. In the end we never find anything else in nature except individuals. The fact that all the individuals we find are members of individuals of higher order and contain individuals of lower order does not prove the unreality of individuality; but simply its omnipresence. Nevertheless, I imagine that just this involution of individuals one in another has led to the fallacy which we are exposing. A world which is nothing except a system of individuals may seem not to possess any individuals at all; being omnipresent like the atmosphere, they may seem to be non-existent.

In concluding this discussion I wish to examine certain objections to our account of relations, and other difficulties, which it may be held to share with the doctrines rejected.

First, if relations have no more of independent reality than we have ascribed to them, and if wholes are determined through elements, how does it happen, one might ask, that the same individuals can create different wholes? It would seem as if, in order to explain this difference, one would be

compelled to have recourse to arrangement, plan, order — to relation, in short — as an independent factor. Out of the same blocks, according to the relations in which he disposes them, a child can build many different houses. Of themselves, it would seem, elements cannot form wholes; but out of even a very few elements, by means of different relations, numberless various compositions can be evolved. In all building, in addition to materials, I need a form or plan.

To this the reply is as follows: Although new wholes are usually made after the pattern of old ones, this does not imply that the patterns of the old are efficient as independent facts in the making of the new. The form is effective in shaping the material only through the artist in whom the architectural conception exists; in itself, the form is powerless. When new wholes spring from old ones, they depend for their nature on the relational characters of the latter, as when a child grows from its parents' bodies; but the form is effective only as a property of these complex individuals. Moreover, the fact that one can make different wholes out of the same individuals by ordering them differently does not imply any more ultimate reality in order than we have ascribed to it. For identical elements cannot in themselves create different wholes. By themselves, for example, the blocks cannot assume various patterns; they can only take on the one which is in the mind of the child. We had forgotten the child as a factor in the creative process. And when the child makes another pattern, he is not exactly the same as he was before; for he is at least so far different as to have a different plan. When we think of the blocks as falling

of themselves into any pattern we forget their actual physical constitution and relations. Materials are indifferent to various forms in the sense that they can assume different forms under different conditions; but the conditions are of the utmost importance. Two artists can make different shapes out of the same clay, but the clay cannot of itself assume different shapes. The relation, the plan, is a factor in the making of new wholes, not however as an independent existence, but only as a character of another pre-existing whole. The Aristotelian statement of the situation is final.

Wholes, we conclude, spring from the elements which compose them; the character of the wholes, the relations into which the elements are to fall, is determined by the nature of the elements themselves, always, however, after the pattern of some old whole to which the elements belong. Familiar illustrations of new relations, that is, of new wholes, springing from the elements which are to compose them are the marriage, business organizations, societies and clubs of human individuals. The relations involved in all these cases are not metaphysically independent entities; for the individuals which enter into the new wholes and the old ones which supply the type are the sufficient agents in the process of formation.

Second, there is the difficulty involved in the distinction which we have made between the original and relative qualities of an individual. Every individual, we saw, owes some of its qualities to its union with other individuals; yet not all; there are, in addition, some which are native to the thing itself. But now, when we consider these qualities of

individuals are we not confronted with the same problem over again ? For every time, for example, that an individual entered into a new relationship it would acquire a new quality, which would therefore enter into relation with those already possessed by the thing. The problem of relation would simply be shifted from between individuals to between qualities within each individual, and there the same distinction would have to be drawn over again between an original and an acquired aspect of the qualities in question; for by being brought into relation with each other the qualities would undergo mutual modification. Since everything exists both on account of itself and on account of other things, there would be a part of the thing which would remain the same before the entrance into the new relationship and another part which would be different. Call the one *A* and the other *B*. But these two parts would be in relation; hence they would modify each other. Yet, as in the case of the individual, you could distinguish part as the same and part as different — in *A* for example, *C* and *D*. But clearly this would involve once more the same problem of the relation between the original and the acquired, only this time within a quality of the individual. Again the problem is shifted — from between individuals to between qualities, then within the single qualities. Obviously an infinite regress is commencing, and our individual, which seemed simple enough at first, is becoming infinitely complex.

Royce here,[1] as in a previous case, accepts the infinite regress as harmless and the infinite complexity of each

[1] *The World and the Individual.* Supplementary Essay. See page 227.

individual as no more than just the truth about the constitution of everything. The regress arises, he says, in the attempt to determine the self identity or uniqueness or individuality of a thing in contradistinction from that aspect of its nature which it owns as a result of its relations. We have been seeking to get the individuality pure; but, as a fact, it is never pure. The original and the acquired are always intertwined. The purely original is a limit in the mathematical sense, to which we may approach indefinitely by an endless process of making distinctions between what a thing is as an individual and what it is as related, but which we can never reach. This solution of the difficulty, although it contains a certain amount of truth, as we shall see directly, is nevertheless subject to the same defect as that which affected Russell's dealing with the problem of the infinity of relations between an individual and its relations to other things — it accepts as real a complexity in the individual far beyond anything given in our experience.

A similar difficulty arises when we consider any whole formed through the union of individuals. Wherever there are relations between individuals, we have seen, there is a whole which possesses properties not possessed by any of its elements. But what of these properties? Since they all belong to a certain whole, it would seem as if they must be united in that whole, and there be subject to manifold relations between each other. And among these related properties, the same distinction would have to be drawn between what they are in themselves and what they are through their relations to each other, and the same apparent problem of the infinite met.

The solution of the difficulty is, I think, within our reach. The difficulty arose from the effort to separate out the original and the acquired properties of related things, or what comes to the same, to mark off the identity from the difference in things which change and acquire new relationships. But you cannot make this separation; for the two interpenetrate, and the give and take between them is again not of something which exists alongside of each, but is just the very nature of each.

For example, consider the illustration which we have already used. Through some new relation to the public, a man's thought of himself becomes tinged with pride. His thought of himself becomes a proud thought. We can now distinguish, if we will, the two aspects in his new state of mind — that of pride and that of thought; and it is true that the pride and the thought are united with one another, and that there is a mutual influence of one on the other. But this union does not involve a new complexity and a new problem of relation. The thought in relation to pride becomes a new quality, a richer quality; but what it takes on is not something other than itself and other than pride; it becomes a proud thought; and the pride does not acquire something different from thought; it becomes simply pride of this thought. When, as happens here, and generally whenever the qualities of things are modified through relation to other things, the mutual modification consists in each quality taking on the nature of the other; there is no new complexity of relationship developed in each, but a simple fusion of the two into a total quality. The infinite

regress, of which Bradley makes so much, develops through the supposition that when an element is modified through relationship you can find one part which remains the same despite the relation and another part which is the increment of difference created through this relationship. The man is the same as he was before the new honor, and of course he is also different, so you want to separate the sameness from the difference. You want to find the thought as it was originally, and then, alongside of it, the difference which was made to it through its relation to pride. But, I say, the thought is the same in being thought and different in being proud thought. And if you persist and ask, Is there not in the thought itself some part which is just thought and some other part which is the ingredient of pride? I answer, There is none; there is not the slightest part of the thought which is not permeated with pride; there is no part which is not at once the same and different. It is impossible to separate the sameness from the difference, to get the sameness pure and the difference pure.

The principle just employed to solve the problem of the relation between the qualities of related individuals serves to solve the similar problem of the relation of the qualities of the whole formed by these individuals. For there, too, the qualities come into relation with and modify one another. But the interrelation of qualities of a whole involves the same type of unity as the interrelation of qualities of an individual in the whole. There also the qualities modify one another, but through participation, not through a creation of new qualities, so that no further complexity is involved, least of all an infinite regress.

The recognition of interpenetration as a special type of unity throws much light upon the definition of the individual and its distinction from quality. An individual is usually defined as something which can exist by itself. But since it is impossible wholly to isolate anything, we should never know, if this definition were true, whether anything were an individual or not. Moreover, since individuals derive their relative characters from other individuals, the statement cannot be exact. We cannot take the individual out of the universe, and so we cannot define it as if we could. However, starting with the given whole, we may define the individual as something which can be found separate from the rest of the whole. This does not mean that the individual could exist out of the whole, but that one does not find the whole or any other part of the whole when one finds a given individual. For example, I can find the panel of the door without finding the knob, although both belong to the one whole of space. It might seem as if there were a limit to this; for the relative characters of an individual cannot be known without a knowledge of other individuals with which the former stands in relation. I cannot know that A is greater than B, unless I know B as well as A. Yet this is really no objection; for the knowledge of B is not a finding of A in B, but an inference from the relative characters of A to the correlative characters of B. An individual, then, is not something which could exist by itself apart from the whole, but something which can be found separate from other elements in the whole, and does not derive all its characters from them.

Next, what is the definition of quality in distinction from individual? There are two things to consider here — the qualities of individuals and the qualities of the wholes in which individuals exist. An individual is a union of qualities. The Aristotelian tradition has it that an individual is something besides its qualities, their subject or bearer, but this entity is certainly not empirical or real. The qualities in their unity are the thing which owns any one of them and to which any one of them may be attributed. The notion of subject served two purposes: it made possible the identity or persistence of the individual despite change; it served to distinguish the individual from the universal. How identity and difference, permanence and change can be conceived as co-existing in the thing without the notion of a substrate, we have already discovered in our studies of time and the self. The need of the subject to provide for the uniqueness of the thing sprang, I think, from a misconception of qualities rooted in the platonic philosophy. Qualities were thought of as universals; hence, since the individual is a unity of qualities, it too, without something to guarantee its particularity, would have become a universal, an idea. But the qualities of things must not be confounded with the abstract ideas or concepts used in the description of things. The blue which I see in the sky is a concrete *quale*, not the universal blueness. Qualities do not have to be made unique through attachment to a subject; they are given each unique. Everything which can be distinguished in the existing world is already unique and individual in the sense of not being universal.

But, if this is true, why not say that an individual is a quality and that a quality is an individual? Individuals can unite into individuals of higher order — are not qualities in exactly the same case — what we call an individual being really a complex individual composed of lesser individuals, *qualia?* The difference is this: the qualities of an individual are all involved in one another, and it is impossible for any one of them to exist separate from the rest, that is, separate from the thing of which, we say, it is a quality. For example, a bit of blue in the sky is an individual; for when you find it, you do not find that other bit of sky to the right, which is also an individual in the same whole of space; the two are united, yet they are not involved in one another. But the hue and the intensity of the first bit of sky are not individuals; for you cannot find the one separate from the other; they are fused, intertwined. And whereas individuals — qualities in their fusion — can exist when other individuals in the same whole disintegrate and the whole is broken up; no single quality can exist by itself apart from others, that is, apart from the individual. You cannot find, for example, the intensity of the blue by itself unfused with hue and spreadoutness.

The distinction between quality and individual depends therefore upon the distinction between two types of unity: one, in which the things united are fused in one another; the other, in which the united elements retain their separate existence. The one is the type of union of qualities; the other is the type of union of individuals. Qualities unite and form individuals and are lost in one another; individuals

unite and form wholes and are outside of one another. A quality in its union with another quality in the thing takes on the other quality as its own; but an individual in its union with another in an individual of higher order, although modified by that other, does not assimilate its characteristics. Thus, when a man and woman marry, each is modified by the relationship; yet this does not involve the feminization of the man and the virilizing of the woman; the modification consists rather in making the one more masculine and the other more feminine. It involves adjustment to one another, not fusion of one another. Within the individual, however, the union of qualities involves a taking on by the one of the other — the blue becomes extended, the extensity becomes a blue extensity.

Failure to distinguish these two types of unity, or, what comes to the same, failure to distinguish qualities from individuals, is characteristic of all mystical types of monism. For there individuals are reduced to qualities of the whole which they form through relation; whence it follows that they must participate in one another just as the qualities of an individual do. Since all things are related to all things, the result is the doctrine of universal compenetration — each in all and all in each. The clearest evidence against this view, as we have already seen, is afforded by asymmetrical relations. For there the adjustment to one another which follows upon the relation of the terms to one another is specifically not the acquirement of anything which would eliminate difference and distinction, but the reverse; for example, one becomes a predecessor, the other a successor,

one a father, the other a son. There is a greater differentiation between father and son than between the former and another boy to whom he is not related. A man in his relation to his wife is a far more highly differentiated creature than he is in his simpler relations to other women. Relation is therefore not so much a source of identity as of difference, of richness. Another clear case of union without interfusion is that of the parts of space into larger wholes of space. Here the whole is indubitable; yet the parts are not fused in one another; for each can be found separate. Moreover, the sort of relation and wholeness which they possess demands this very separation. Even contiguous elements do not have towards each other the type of relation possessed by qualities of an individual, such as have, for example, the hue and intensity of a color. If they had, since all elements in space are mediately in contact with any one of them, they would all flow together into one — would all reduce to a single point. Here the union, along with the preservation of the distinctness of the individuals united, is a plain fact of observation.

The recognition of unity as an indispensable aspect of the meaning of relation, together with the recognition of two kinds of unity, solves the third and last of the problems which we confronted on the way to the development of our own view.[1] The problem was one which monism had to face, but there are certain elements of it which exist for us also. They are as follows: Take any case of relationship between A and B, which we symbolize by ARB. This means,

[1] See above, pages 237–241.

in terms of our interpretation, that A and B exist each with its original and acquired characters, and that also some whole exists, which we designate as AB. But now, since A and B are elements in this whole, there must be a relation between each one of them and it, in addition to their relation to each other. The existence of this new relation involves, of course, the existence of another property of AB, and also further relational properties in A and in B. The existence of these properties causes us no difficulty; for they fuse simply, in the fashion already explained, with the other properties. But there was another difficulty in the situation: the choice between the loss of the individuality of the members and the separation of them from the whole. The first, as we saw, was impossible, owing to the asymmetry of the relation of membership in a whole, which is impossible without the individuality of the parties to the relationship, and the second is obviously impossible. Now, despite the fact that, with monism, we recognize the existence of the whole AB, we are saved from the former alternative through our equal recognition of the individuality of A and B, and from the latter alternative, through our insistence on the unity of A and B and of each with AB. The relation of A to AB does not reduce to a mere quality of AB, because the relation involves the distinctive existence of A; and, since unity is an indispensable aspect of the meaning of being related, A does not fall outside of AB, for, in being united with both B and AB, it necessarily falls within the whole AB. Moreover, keeping in mind the two kinds of union which we have come to recognize, we see that, although the

relational properties accruing to the whole through their relations with their members are lost in one another, *A* and *B* are not lost in the whole, because both they and the whole are individuals, and hence united with one another in a different fashion — externally and by contact, not by fusion.

We may summarize the results of this chapter as follows:

1. A relation cannot be reduced to its terms; yet no relations can exist without terms and no unrelated individuals exist.

2. Relation implies union of the individuals between which it holds in a whole or individual of higher order. The unity of individuals implied by relation is ultimate and irreducible.

3. Individuals as members of wholes — as terms in relation — acquire certain characters which are lost when the wholes in question are broken up. These characters we have called acquired or relative.

4. In addition to these characters, each term possesses others, called by us original or native, which do not depend upon the wholes into which it enters.

5. The nature of the wholes into which an individual enters — or the nature of the relation which unites it with other individuals, the direction or sense of the relation in particular and the consequent position of the individual in the whole, are determined by the original natures of the individuals concerned.

6. In any individual the original and the acquired characters are distinguishable in thought, but in reality fused. The element is at once individual and relative — the "re-

spects" can be distinguished, but neither is a substance existing separate.

7. The acquirement of a new relation by an individual involves a new aspect, yet despite this change, the individual retains identity. It is at once the same and different. Here again the aspects can be distinguished — how the individual is the same and how different; but there is no item, no stuff or substance or part, which is not at once the same and different.

8. There are two types of unity: fusion, the unity of qualities, original and acquired, which make up an individual; and external unity or contact between individuals in an individual of higher order. In the one case, the related elements interpenetrate and are lost in one another; in the other case, they remain distinct from one another.

The distinction between ideal and real relations offers no difficulties; for our theory applies equally well to both. Ideal relations are those which exist between real things only when some mind knows them, or they are relations which exist between purely ideal entities, like numbers or other concepts. For example, the relation of likeness between two observed sense elements is an ideal relation of the former type; the relation of successor of between Two and One is an ideal relation of the latter type. It is clear that the likeness of two sense data is not itself a sense datum or a physical fact in any meaning, and it is equally clear that it exists only through the act of comparing the things which we subsequently call like. Now when we compare sense data the resulting relation involves all the elements

of our analysis: the total quality of each datum is affected by the comparison, the data are united through this act of the mind and, in that act, they form a new whole with its own properties. Of course, where we do not actually have in mind the things compared — as when, for example, we compare the size of two cities — the ideal relation exists, not between the real things compared, but between our concepts of them; and our interpretation applies there: each concept is enriched through the comparison and both are united into a larger total meaning. Finally, in the case where the relations hold between things which are themselves ideal, both the ideal things and the relations between them exist only through the mind; hence the situation is the same. Yet, even in this case, and generally, ideal relations are not wholly subjective. For, although they exist only through the mental act of comparison, it is the native characters of the things compared, either directly or through their conceptual representatives, which initiate the comparison, and these are objective.

CHAPTER X

THE UNITY OF MINDS

IN our chapter on Relations we studied the more abstract aspects of the relations of one mind to another and to nature at large; in this chapter, using all the results which we have won so far, we shall try to sketch a concrete theory of these relations. How shall we conceive of the unity of our world: as the ideal unity of a multitude of individuals, like a constellation of stars, or as a real unity, like the composition of colors in a painting, where each patch is contiguous with its neighbor in a single whole ? This is the problem expressed in the alternative — monism or pluralism ?

That each mind is a little world, distinct from other human minds, is a commonplace of philosophical reflection. Although there is great similarity both in the structure and the elements of minds, there are no elements common to both. We think of minds in relation to one another as like islands of the sea; if you are in one you cannot be at the same time in another and there is no getting directly from one to another. But despite the lack of contiguity and overlapping among minds, there are the obvious relations between them: one knows another, one exists in the same time-series with another and one can exert causal influence upon another. How can we reconcile the separation of minds with these empirical relations between them of time and cause and knowledge ?

It is natural to suppose that these relations must be mediated by the physical world which lies somehow "between" minds, just as the ocean mediates communication between the islands which dot its expanse. But most doctrines of pluralism, especially the extreme form called monadism, deny themselves this avenue of solution. For, recognizing, as we do, that nature is only experience, monadism conceives of that experience either as falling within known minds or else as composed of assumed minds equally isolated; and so, by interpreting the medium after the nature of the things to be mediated by it, monadism deprives it of all mediating power, thus leaving us with a larger number of separate individuals, with the relations between them still to interpret.

That monadism is incapable of interpreting these relations, we have shown in the preceding chapter.

And not only the relations between minds, but their origin and death as well, are difficult for the monadist to explain, as Ward has shown in his *Realm of Ends*. Every mind that we know has an origin in time out of the bodies of its parents. Now, if all reproduction were monosexual, we might perhaps conceive of a mind as thrown off by the parent body, much as a satellite is thrown off by a planet; it would spring from its parent and yet, having once come to be, would exist separate from its source and carry on an independent career. But such an interpretation of the facts is clearly insufficient in the case of bisexual reproduction. For the new individual springs from the fusion of two other individuals, which must first come into

actual contact before the new one can arise. The birth of every human mind presupposes, therefore, the possibility of a substantial bond between other individuals, which is denied by monadism. Moreover, although the new individual acquires an existence which is materially separate from its parents, it always remains in contact with the world of nature as a whole, and in dependence upon it for preservation. Just as the satellite still keeps its gravitational relations with the planet and the rest of the universe, so the mind depends for sustenance upon the sense experiences which flow in upon it from nature.

Finally, monadism is incompatible with the fact that minds die. Everybody who accepts the doctrine of the unity of mind and body must recognize that even as the mind springs from nature, so it dissipates back into nature again. But if the mind is self-subsistent, it is difficult to see how it could disintegrate. Were the death of the mind due to a conflict of elements within it, we might perhaps conceive of this as possible; but its death is obviously co-determined by external facts. The somatic forces of the body, for the most part unrepresented in consciousness, are the proximate causes of the death of a mind, and the indirect cause may even be some fact in another mind. If the monadistic world view is true, how can one mind destroy another? Surely a mind which can destroy another must be connected with it by some substantial root — both must be parts of a single whole. Consistent monadists, like Howison and McTaggart, deny that minds are ever born or die.

The inability of monadism to explain the relations between minds and their origin and death, is due to its theory of the mind as an isolated and autonomous reality. This theory, we believe, is false. Let us recall some of the facts developed by us in our early chapters.

The self is given to us, not isolated and circumscribed, but in immediate contact with sense elements which are a true part of nature. These sense elements, in connection with others beyond my own mind, but continuous with them, bring me into indirect touch with all other minds. All minds overlap with nature and through nature with one another. Although the ideas which we have of another mind are not in contact with it, they are, nevertheless, mediated by a continuum of unbroken reality right from the door of one mind to that of another. Just as when I touch this side of the wall I am in indirect contact with the other side through connecting and continuous material, so through my body and the intervening sense world and the body of my fellow — all parts of one uncut reality — I am in indirect contact with his mind. Monadism makes the mistake of interpreting nature in its relations to our minds after the analogy of one mind in its relations to another. But because a sense element in your mind is not in mine also, it does not follow that both are not together in the mind of nature. Just the opposite, we claim, is the case. And because nature contains the sense elements belonging to both minds, it can mediate the causal and noetic relations of both. If we understand the relations of the mind to nature we can comprehend the relations of one mind to another. The theory which I wish to present is as follows.

Much of the content of the mind is determined by the activities of the self. For example, the muscular sensations which arise when I lift my hand are the expression of some interest of mine in this act. But by far the larger part of the content of mind does not express my activities. The visual panorama, for example, is created not by me, but for me. Of course, in so far as what I see depends upon my attention, I co-operate in bringing it into existence; nevertheless my share in its creation is small. Its dependence on the eye is not dependence on me; for I do not create my eyes. And even when, in reacting to and transforming the environment, I seem to be most active in determining the content of the mind, I am dependent upon the help of foreign forces. When, for example, seeing a leaf fall, I stretch out my hand to grasp it or weave it into a garland with other leaves, I obviously create sensations in my own mind, and in nature's also, since it overlaps with mine; yet even in this my own work I am dependent upon the help of nature. For, in the first place, the hands which I use were made and are maintained by forces which are no part of myself; and, in the second place, I can have my way with the leaves only in so far as I can adapt my way to their way, my will to their will. All my acts, and therefore all the sensations which result from them, depend upon the co-operation, first, of the somatic forces — the, to me, unconscious forces of the body — and second, upon the forces in the environment of the body.

But how can these foreign forces affect the content of my mind? Simply because they are attached to the sense

materials which they determine in exactly as immediate a fashion as my own impulses are attached to the body. They play directly upon, terminate and are expressed directly in the content of my mind. Of course I am not in contact with them; if I were, they would be a part of my mind and I should understand them as I do my own acts; but I am in contact with the material of their expression. And so, indirectly at any rate, through the sense elements, they and I form a single whole. The same sense elements figure twice over and are under a double control — once in my mind and once in the mind of nature, which is at least two minds, the mind of the body and the mind of the environment. The sense content of the mind has two parts — the one, containing the muscular and organic sensations, controlled jointly by the self and the unconscious forces of the body; the other, containing the so-called peripheral sensations, which are under the control of the self only through the body and the environment.

Sometimes I seem not to be in co-operation but in conflict with the will of nature. Thus, I, a craftsman, may try to impose a form upon my materials which they will not take; or I may sail against the breeze which, tack as I may, will perhaps overturn my boat; I may pull at something which will not budge, or try to move a limb which is paralyzed.

How are we to conceive of these relations of co-operation or conflict between the self and nature? Such relations are familiar enough within the self where they are immediately given. Whenever we use both arms to draw a load, we exemplify the one relation; whenever, beginning to do something,

we gradually or suddenly inhibit the action because of some conscientious scruple, we exemplify the other. But in such cases the conflicting or conspiring activities are grown together in a single self; they touch one another directly; while in the cases before us there is no such touch of one with the other.

Yet, with the theory in hand, we need not be at a loss to understand. We must conceive of every sense element as the terminus of many activities which are in immediate actual or potential control of it. These activities are not in direct contact with one another as are the activities within a self; but they are indirectly connected through the sense elements which are their common termini. Now suppose that one of the activities which terminates upon a sense element begins to alter it; this will immediately stimulate others to responses which, issuing upon the same datum, will join forces with it in a common action. Hence changes wrought in the environment of the organism stimulate it to activities which lay hold of this same material and recreate it into forms favorable to survival. The will of nature, in effecting the original changes, meets the reacting will of the organism in exactly the same point of the world, and the upshot of the interaction is the resultant of the forces thus engaged. Just as the efforts of the organism are directed towards changes in a certain direction, so, we must suppose, the intent of nature is likewise fixed. If the tendency of the organism falls in with the will of nature, the result must be an accelerated change in the direction desired by both; if it be in the contrary direction, the result must be some

sort of compromise between the two, depending upon the persistence, the strength of purpose of each.

We can now understand the mechanism of the interaction between one self and another. Suppose I see a log of wood. This means, of course, the presence of visual sense elements in my mind. Suppose now that the presence of these elements incites me to lift one end of the log. This means the release of an activity which, through the co-operation of the somatic forces governing my muscles, is directed upon the very same sense elements which incited it, so that, through the further co-operation of the will of nature in control of the log, one end is raised — a new configuration of sense elements is produced. But now, this lifting of the object is a process not only in my mind, but in the mind of nature also, and excites some interest there to prolong it in a larger visual process with which your mind overlaps. Hence, you too get visual sensations which you call your seeing of the log; these, in turn, release an activity in you; you, therefore, raise the other end; between us both, with the co-operation of nature, of course, the log of wood is carried to the mill where it undergoes further changes satisfying other purposes. There has been no contact between one self and another; yet there has been an interaction — through the common sense world upon which your activities and mine unite and terminate. The case might be, of course, that instead of carrying the log between us, we should each pull at an end and try to wrest it from the other; when the result would depend upon the persistence of purpose of each, on the one hand, and on what we call the strength of each, on

the other, this strength being nothing else than the will of the somatic forces of our respective bodies, without the co-operation of which we are powerless to effect anything. But, in either case, of co-operation or conflict between us, the mode of the interaction is the same — an activity controlling a sense element releases another activity, which meets it and influences it through the intermediation of this same sense medium.

The differences between the interaction of one empirical self and another and between a self and the environment are obviously as follows. In the former case, since the sense content of no two empirical minds is the same, the action of the two activities does not terminate directly upon the same sense elements, but only indirectly through the intermediation of further connecting sense elements; whereas, between the self and nature, the body or the physical environment, there is immediate contact. Another difference is this — my interaction with the fellow man is coupled with some understanding of the purposes which underlie the changes which he effects in the sense world, and to which I respond with my own activities; whereas I am utterly unable to interpret the stimuli which I receive from nature. Yet clearly, the process is essentially the same in both cases.

If the view which we have expounded be correct, the causal cosmic process is throughout spiritual and continuous. The forces which govern it are strivings, the world in which they operate is a world of experience, of minds, and throughout knowledge is the guide to action. Every response, the blindest, the most purely instinctive, implies a kind of

knowledge of the material upon which it operates and of the mode of activity of the forces which it has to meet and master. Only in the case of our fellow men, and to a slighter degree in the case of the lower animals, are we able sympathetically to understand the forces at work in our world; yet we can always know their mode of operation; and such knowledge is all that we need for action. Our science is the perfection of such knowledge.

The theory of interaction which we have been advocating is obviously similar to that which Ward expounds so persuasively in his *Realm of Ends*. We, like him, conceive of all causation as the response of one activity — intelligent in the large meaning of this term — to another. We claim, however, this superiority for our version of the doctrine: through our conception of the continuity of the sense world and the overlapping, directly or indirectly, of minds we supply a common ground and basis for interaction. We are able to bring together the manifold forces which, in his view as in all monadisms, must remain forever out of touch with one another and incapable of mutual effect. The great unities of time and causation become for us something more than mere ideal frames or illusions. And the knowledge which one mind has of another is shown to be no accidental harmony, but the result of an indirect contact through sense experience. I could never image the inner life of my fellow if I did not live in contact with its expressions. And, although the resemblance between idea and object in the purely representative knowledge which we have of our fellow men, who are cut off from direct contact with the ideas

through which this knowledge is mediated, can never be observed and directly verified by us, we are able to give to it an unequivocal interpretation. The ideal relation of resemblance, which would emerge in the mind if we could get the idea and the object there together, has its ground and counterpart in the real objective genesis of both in a common contiguous world. My interpretations of the inner life of my fellow grow up in contact with its expressions, which are themselves in contact and in correspondence with the inner life which my ideas mean. If minds are cut off from their objects, it is impossible to conceive how knowledge should grow up within them; but if both are parts of a single whole, we can understand how the subjective world can be fashioned into truth about the objective; how this harmony should spring up between them. Instead of the accidental or unaccountably pre-established harmony of separate worlds, we have the self-establishing harmony of parts of a single world.

The origin of the self which monadism, as we have seen, has so much trouble in explaining, can be understood without difficulty in terms of our theory. The self is an outgrowth of two bodies. These bodies are, to be sure, brought together by the selves of which they are partially the expressions, but the new self which results is not born of the substance of those selves. The self is only a part of the system of the body; interwoven with it and supporting it are the, for us, unconscious somatic forces. In mysterious ways, which we cannot hope to understand in detail, the activity of these forces, through the medium of the sense

world which is common to them and to us, prolongs itself into the mind and awakens there the sexual striving. As a result of the union of elements from the two bodies brought together by this striving, there develops a new body and a new mind. The somatic forces of the body — and by the soma I mean the body so far as it is unconscious, that is, unrepresented in the mind — are a mind or a system of minds. One set of elements in this system are the activities which express themselves in the sexual cells. These activities separate themselves from the others in a way which we can perhaps understand. We know that under certain circumstances parts of the self become split off from the rest and maintain a separate existence. This psychic fission is, we believe, of the same type as cellular fission; or, to express the same thought in another way, the one is the outer manifestation of the other. Thus the sexual elements get free of the rest of the body. In the act of fertilization they fuse into one whole. Just as one set of psychic activities can become split off from the whole of which it was once a part, so activities can unite with one another and form a new self. In all distraction or conflict of attention we have the commencement, in the normal mental life, of the one process, and in all redintegration of attention, the analogue of the other. Thus is born a new body with its somatic soul and its psyche, the new human self. The development and isolation of the nervous system as the organ of mind out of the general cytoplasm must be conceived of in the same fashion as the release of the sexual cells from the parent body. The mind is an offshoot of the soma, only more intimately connected with

it, just as the body is an offshoot of other bodies. The new body begins its development in closest touch with the mother body; then gradually gets free of it; but the mind never wins freedom from the soma.

By means of this conception of the origin of the self, we can understand the striking facts of heredity. The new body is like the parent bodies because it is their product — bone of their bone and flesh of their flesh. The new mind is like the minds of the parents because, although not an outgrowth of these minds, it is an outgrowth of the same forces from which they too sprang. And just as the form of the new mind is perpetuated through fission from the old, so all those wonderful harmonies between mind and body, and between parent-mind and child-mind, have their origin and continuation — harmonies so unintelligible from the monadistic standpoint — from the same source.

And we can go further in our understanding; we can understand not only the origin of mind but the origin of life itself. All scientific evidence points to the origin of life out of the inorganic world. The vitalist is doubtless right in his conviction that living activities cannot be reduced to the form of the inorganic; yet the materials of life are certainly inorganic and the new form must have been a development of what we call the lower form. Moreover, life never gets free of its dependence on the lifeless — on its environment; apart from which it would soon wither and die. The processes of life bear a relation to the inorganic world similar to that which the child bears to its mother. Just as the infant grows out of the body of its mother and remains for a long

period within her, so the vital process grew out of the inorganic and remains forever dependent upon it.

The cosmic process is a hierarchy of rhythms. The lower is the parent of the higher and its necessary support. The fundamental rhythm is that of the inorganic world. The minds expressed in this world are the parents of all minds and the absolute overruling destiny. Here certain plans are laid down — the so-called physical laws — to which all must conform and behind which there is nothing more ultimate — the premisses for all other forms of existence. Doubtless even here there is going on a slow process of change; but in this region of reality there is greater stability of form than in any other. Imposed upon this rhythm and sprung from it, is the vital rhythm. Here there is more rapid change, a superior adventurousness seemingly, but at the cost of independence. Finally, there is the human self — the last of nature's products. And here we seem to find the greatest originality and also the greatest instability. The most wayward and spontaneous of nature's children are also the most delicate and ephemeral. Some stirring of unrest in the bosom of nature, incompatible with its own way of existence and so incapable of development there, led to that fission of its substance whence sprang life and the human mind.

After the problem of birth we must briefly consider the problem of death. We have seen how hopeless it is for monadism to solve this. On the other hand, our theory of the solidarity of the cosmos permits us to do so without great difficulty. In our chapter on the relation of soul and body we proved the dependence of the former on its material

organs of expression. Not only is it impossible to conceive of the existence of the former apart from the latter; it is equally impossible to conceive of the continuance of one without the other. The two are a single integral fact — the destruction of one necessarily entails the destruction of the other. Now these organs of expression are subject not only to the mind but to the somatic forces of the body and the forces of the environment as well. Like all other material facts, they are the termini not of one, but of manifold activities, and their form and integrity is created and maintained through the equilibrium of these. The death of the mind is the result of a conflict between the body and powers of the environment which find the activities of the organism incompatible with their own. The instinct of self-preservation is the endeavor of the psyche to resist the forces which tend to break up its organs of expression. This resistance is, we know, of only short duration; in the end, the form of the organism and the soul, which is its entelechy, must submit wholly to the control of the inorganic world. This world permits the deviation which we call life; but only for a short time; it soon finds the continuance of the organism incompatible with its own interests; jealous, as it were, of the use of matter for the new form, it reabsorbs it to itself again. And so, " all life pays the penalty in death for its existence."

Thus, through the same theory of the solidarity of the mind with nature by means of which we solved the problem of the mind's birth, we solve that of its death. And in terms of this theory, we can also understand how one mind can destroy another. This cannot occur directly any more than

interaction between them can occur directly. But through acts which are its expressions, acts which prolong themselves beyond the body into the physical world with which it is continuous, a mind can destroy the form of the body of its fellow, also continuous with nature, and so destroy his inner life which is a function of that form. The contact of one mind with another through the medium of the common sense world, and the relations of harmony and of conflict between the forces at work there, enable us to understand how this is possible.

Those who refuse to accept the death of the mind as a fact, point to the worlds of memory and imagination and thought where the soul seems to be free of the sense world. They admit the dependence of the mind upon the sense world in perception, and also that memory and imagination and intellect presuppose this world genetically, but they believe that, once having arisen, the higher spheres of mental life are free from the lower. And in these spheres, to be sure, man does acquire a certain independence of the changing aspects of his environment; he gradually accumulates and creates a little microcosm all his own. But, as we have proved in our chapter on the relation of mind and body, this seeming independence is an illusion. For memory, imagination and intellect cannot exist apart from their bodily organs of expression. Now these latter are admittedly under the control of nature and finally destroyed by its will. And hence there is no part of man which is exempt from death.

The view of the cosmic solidarity defended in this chapter is very different from that known as absolute idealism.

According to absolute idealism, minds are not one in so far as they are connected by a common sense world — our view — but in so far as they are parts of one mind — the absolute. The advantage of this latter view is that it enables us to conceive of interaction according to the type of the interplay of activities within a self; the re-enforcements and inhibitions of strivings, the springing up and the dying away of interests. And this advantage is, I think, great; for this mode of interaction, being most intimate to us, is best understood by us. Yet the advantages of a theory for the solution of a particular problem cannot outweigh inherent contradictions. Some of these have been convincingly set forth by James. The unity of the self is incompatible with the manifold differences and oppositions which exist between empirical selves. It is impossible that a single self should at once know and not know, or at the same time seek and reject a given thing, which the absolute self would have to do if it contained within itself as parts human selves with their antipathies and their varieties of knowledge and ignorance. The world, of course, contains these differences, but this does not imply that they are united under the form of a single self. Absolute idealism is valuable as a corrective for extreme types of pluralism; our view is close to it in emphasizing the solidarity of minds; but, on the other hand, is opposed to it in insisting on the real separateness of selves and the incompatibility of their interests. The various selves are not next-to-next directly, but only through intervening sense material; their minds may, therefore, overlap, but they do not constitute one mind.

The theory of the unity of minds which we have been developing has involved the use of two concepts — that of interaction as response and that of the hierarchy of causes — which require further elucidation. The reader will also rightly demand of us that we state the bearing of these ideas upon the important problem of freedom.

The unit of all causation is an action, a process embodying impulse or purpose. But every action, as we have seen, is a response. And we must go further; for the situation which stimulates the response is itself stimulated and responds; the reaction broadens out into an interaction. A moving body tends in obedience to its impulse to move towards the earth, and the earth in its turn responds to the body and moves towards it. The environment awakens the organism to adaptive movements, but answers by being moulded into hut and food and clothing. Every impulse, in order to find fulfillment, goes beyond the body in which it is resident and invokes the co-operation of other elements.

Another simple illustration drawn from human life will make plain what is meant. A wood carver seeks to carry out his design in the material of his art. His purpose animating his hand would be ineffective without the co-operation of knife and material. These must lend themselves to his uses, and the final product is their co-operative endeavor. The maker of the design is quite as much the wood which submitted to the handling as the artist who planned and wrought.

Every new event is, therefore, due to the action of some system. We can never trace it back to a single agent as

cause. We attribute the new institution to the reformer, yet we know that without the co-operation of the other members of the society it could not have been. Still, in affirming that the system is the cause, we do not imply that the individual member is not cause; for the system is nothing besides the elements in their interrelations, the wills in their consensus. Moreover, it is always possible to attribute an event more to one member of a conspiracy than to others; the responsibility cannot be equally divided; it has to be borne chiefly by the stronger and more persuasive members, in whom the purpose which brought about the event originated, and by whom it is sustained.

If all causation takes place through a system, we have to inquire how large the system is which is the cause of any effect. Now every effect has its proximate origin in some relatively isolated system of individuals in immediate contact with one another. Changes accrue to individuals because of internal processes evoked through their relations with other individuals; the appearance of spontaneity is due to this, as we have seen. In this manner changes arise in the various individuals all over the cosmos. But, since all individuals are in direct or remote contact with each other, a change in any one part of the world must have some effect in every other part. The individual and its environment undergo mutual modification; but the environment has itself an environment; hence its responses to that will necessarily be modified by its responses to this, and *vice versa*, to the remotest corners of the world. Waves of change spread from each thing to every other thing, and return

again upon each; and although such changes are subsequent and transitive, being carried by intermediates, nevertheless, since any wave of change must be met by other waves proceeding from other things, every concrete change involves the interference of waves and is, therefore, partly determined by everything in the universe.

Moreover, the system into which any causal agent enters is not a simple one where all the elements are on a level. So far at least as the human mind is concerned, there are no less than two into which it directly enters — the body and the external world. The mind can act only through the consent and co-operation of the body, and when the body acts it acts subject to the laws — that is, the control of — the physical environment. A twofold limit is, therefore, set to all human behaviour. The sense elements, through which alone the mind can express itself and act, are also media for the action and expression of the system of the body, which, in turn, is played upon by the forces of the physical world. The acts of the mind, therefore, while single outwardly, are complex in their inner significance and control. They represent in themselves an equilibrium of many forces. Being multiply determined, every event in human life is richer in its meaning than would appear.

Despite the entanglement of human purposes in cosmic intentions, despite the fact that we realize our wills only because nature finds it conducive to its own ends that we do so, our human freedom is not imperiled. For by freedom we mean, above all, that an individual's acts are its own; that of whatever it does it is itself cause. Now this, we have

seen, is true. For, although all causation is interaction and each event depends upon a system, nevertheless, the agent is a necessary element in the system. If a thing's acts were wholly determined by its environment, then indeed it would be unfree; but this determination is only partial; for it contributes its due share to the result. If the deed could not happen without the co-operation of the other elements in the system, it could also not happen without the aid of this one; if it needs them, they also need it. Doubtless the world has made me what I am, but I have made the world. To the world belongs the responsibility for what I do; yet I, being part of the world, must accept my share of the praise or blame. To be sure, every act which I perform expresses nature's will as well as my own; yet nature has taken account of my will in expressing its own.

Again, if the past were discontinuous with the present and, having brought it into existence, still controlled it, then indeed we should be unfree and there would be no self-determination. But, as we know, the past as such does not exist, but only so much of it as survives in the present. The past, therefore, as past, can never compel us to the performance of any act; for only that which exists can be a cause and act; and the supposed control of the present by the past is simply part of the present's own control of itself — the control exerted by that part of the past which is identical with the present. *A* may cause *B*, and *B*, *C*; but *A* cannot cause *C* except in so far as a part of *A* is a part of *B*. And *B*, as we know, is always unique, despite the share of *A* which it contains; whence again *B* and not *A* is the true cause of

C. We cannot, therefore, shift the blame for our misdeeds upon our hereditary past; for our heredity exists and operates only through ourselves; in blaming it, we blame ourselves. And again, when the sexual elements fuse and make me; they are no alien creators of me, to whose poor selves I can attribute all my imperfections — they are the elemental me. The past has made me what I am; but I am that past that made me.

As a conclusion to this chapter, let us examine and test the so-called consciousness of freedom in the light of the abstract principles which we have now worked out. Our consciousness of freedom, is, in the first place, a consciousness of authorship. We are conscious that what we do is our own; that it is we who perform our acts, and not somebody or something else. And this means that we are conscious that each act belongs to the whole of interwoven activities which is the self; that it grows out of this rather than out of some other sphere of reality; and second, that each act is a substantial and effective fact, and not a mere expression or phenomenon or byplay of something else. Both the home of the act within the self and the substantiality of the act are given in the experience of the act. And, in accordance with our results, we know that with reference to both, consciousness does not lead us astray.

The consciousness of authorship is just as vivid, I think, when we are acting habitually, lawfully, in accordance with some plan or tendency from which the act can be deduced, as when we are acting spontaneously and perversely. In the latter case, moreover, one side of the feeling of authorship is

far less strong — the relation of the act to the self, its home. For, being novel and fortuitous, it is not completely explicable from the past and familiar self that we know; hence we feel that we are borne along by some power not ourselves, rather than self-determined. Yet the other aspect of the consciousness of freedom remains — the substantiality of the act.

There is, however, a certain amount of illusion in the consciousness of freedom. For we are seldom aware of the extent to which each act of ours depends upon the help of foreign forces, because these forces are not within the mind and accessible to us, as are our own. Yet, in more reflective or less self-assertive moods, the other side of the situation may come to mind; and we may clearly recognize that the act belongs not merely to the restricted area of the self, but also to the wider region of the world. Nevertheless, our consciousness of freedom never wholly misleads.

There is another aspect of the so-called consciousness of freedom upon which libertarians usually place more stress — the alleged awareness of indetermination, supposed to be most clear in the case of choice. Now as a rule, I think, this consciousness of indetermination is really less vivid in the case of choice than elsewhere, even when the alternatives are many. For, generally, choices are made in accordance with definite principles, habits or purposes, and are therefore necessary and predictable from them. Placed in a situation demanding a choice of policy or morals, no matter how many be the abstract possibilities of action, we know clearly how we shall act, and, after we have acted, we feel that we

could not have done otherwise; no other act could be ours, could consist with our nature. The consciousness of unlimited possibilities is purely imaginative. It is an aesthetic and playful putting of oneself into various abstractly possible situations, largely to the end of enlarging one's experience imaginatively; it does not imply the earnest supposition that any one of them is really possible for oneself. The process of reflection upon and weighing of alternatives is an endeavor to discover which act is logically demanded by one's own nature. In both cases the alternatives present to the mind represent only abstract possibilities, not real possibilities of action for *me*.

A clearer sphere of consciousness of indetermination is the sudden development, under the stress of novel circumstances, of new interests, beliefs, attitudes. A luminous consciousness of choice is not, as a rule, present here. One finds oneself believing, doing, valuing, as never before. Striking is the break with one's past. One cannot deduce this present self from the old. There is an unpleasant sense of rupture, of discontinuity. One longs perhaps for the old simplicity and single-mindedness; one is afraid of oneself and suspicious of the issue. Yet there is also a sense of exhilaration, of freedom. This is negative freedom, freedom from the past and its ties. We shall not try to evaluate it in comparison with the freedom of rational action. No one can deny, however, the interest and importance of it. It pertains to all refreshing and original natures. We are especially interested in the problem of how far this consciousness of indetermination is genuine or illusory. We have to admit,

of course, that the elements of discontinuity and chance are often not so great as they seem. We can usually show, not merely that the new acts and beliefs grew out of the past, but how they followed in terms of our former and still operative interests and instincts and attitudes. It is the business of every psychologist and scientific biographer to do this. Nevertheless, a large unaccountable element will remain. The biographer always finds it a problem in studying the life story of the man or woman of genius, especially of artistic genius. Yet the same thing is to be found in the history of less-gifted people. It may be only some subtle change in temperament or mood, which, however, may pervade the whole man. Now, as I have maintained in Chapter Six, I see no reason for supposing that, despite the failure to deduce these changes, they must be deducible. They are always a development; of this there can be no doubt; but they are not a logical development. Here is chance, the accidental, the non-rational. Of course, in its turn, it shares the fate of everything fortuitous — it becomes a new habit, and so a law. Yet there are some natures in whom novelties are never exhausted. Such natures are always wonderful to us.

CHAPTER XI

CONCLUSION

IDEALLY the speculative philosopher has no concern with the specifically human interests. His is an effort at complete dispassionateness. To survey all time and all existence without foreboding and without hope, is his aim. Since, however, the philosopher is after all a man, he cannot help inquiring into the bearing of his theory of the world upon happiness and the aspirations of men. He may not adjust his theory of the cosmos to his own wishes and emotions; yet he is bound so to order his inner life that, knowing what he does of the world, he may live there at peace with himself. The instinct of self-preservation is operative even on the spiritual plane.

The time is past for men to ask of either philosophy or religion a guarantee of the satisfaction of any of their mundane personal interests. The protection of the body from disease and death, happy love, children, the opportunity to direct and create, friendship and the esteem of one's fellows, they have no magic to assure. But touching certain ideal interests, men still seek confidence from the philosopher. First, there is the demand for the perpetuation of the individual, immortality; second, the demand for the perpetuation and continued development of human culture, progress and the birth of the superman; third, the meta-

physical ideal of cosmic perfection, theodicy. These demands, although they may all be held at the same time, form a series, each leading through renunciation to the more insistent emphasis on the one following.

The demand for immortality is an extension and sublimation of the instinct of self-preservation. The process of all life is the passage of purposes to fulfillment. But realization is never complete. Although at brief moments of triumph it sometimes seems to the human animal as if he had fulfilled his destiny and would be content to sleep, he soon discovers a new striving, awakening in the consummation of the old, to disturb the peace of work perfected. Hence, death leaves beauty unenjoyed or uncreated, the service of duty or affection unperformed. And, since for the full realization of human aims, the existence of other men is a necessary condition, the desire for immortality is as much or more a desire for the survival of one's friends and co-workers as of oneself.

But death is an evil for another reason besides its hindrance to the fulfillment of purposes. Men seek not only to realize aims, but to keep the values which accrue through realization. The good of life is not only activity in the pursuit of ends, but an ever expanding and enriched state of mind, a treasure house of memories, insights and aptitudes. A by-product of every action and performance is the creation of personality. We cannot keep our works or days, but the memory of them, and the character which we have built up through them, may abide, at least for a time. It is the loss of these, the finest result of any man's endeavors, which we so poignantly deplore at his death. We can dispense with his

services, for any other man, perhaps, can take his place; but the man's self is unique and its destruction irretrievable. Seeing as we soon do their inevitableness, we soon get used to the passage of youth and the transiency of pleasures; although they too bring their inevitable sting, for we ask that even the flying moments stay their course; but to the loss of their possible fruits in memory and personality, to this, reconciliation is a far harder task.

Indifference to death is always an indication of callousness; we admire it in the soldier or the explorer not as an end in itself, but as a sign that something better than mere existence is esteemed. Of itself, it signalizes a want of feeling for the individual and personal. Yet to lament annihilation and to recognize its inevitableness are not incompatible. To this end there is needed, only in larger measure, the same subjugation of regret which we discover in the fine old man who, while remaining sensitive to the loss of his youth, still preserves sweetness and serenity. For, rebel against it as he may, the philosopher must recognize that nature did not intend that the individual should survive. Viewed dispassionately, the life of man is no different, from the aspect of survival, than that of a plant — it has its growth, its flowering time, its inescapable decay and death. As we have already explained, it is just as impossible for the soul of man to survive the disintegration of its organs of expression, as it would be for a plant to live on without roots and sunshine.

But, as we saw in our last chapter, the necessity that the individual should perish is not blind. It is due, in the end, to an incompatibility of the purposes of the individual with the

purposes of the environment. If a man could continue to live without affecting the course of the world, or if he could live without the use of organs, then doubtless he might survive indefinitely. But, just as we men are compelled to take the life of animals, and sometimes, in the case of an individual whose purposes are absolutely irreconcilable with our own, to destroy one of our own kind, so with equal reason nature destroys us. Of course it is impossible for us to conceive of a purpose which could be frustrated by the longer life of a Keats or a Shelley, or which would not renounce something of its own good for the new poems which would have been the fruit of such lives as theirs; yet we cannot suppose that our own standards of value are binding upon nature; for all we know, some superhuman poet sang sweeter songs because of their demise.

The death of the individual represents, therefore, a twofold failure: first, completely to realize his purposes and second, to preserve the personality which he and the world have built up. Many who recognize this console themselves with the doctrine of the immortality of the race. The desire for personal immortality and the love of children are contradictory, yet compensating attitudes. It is clear that the somatic forces of the body, realizing that they cannot preserve the individual, seek a vicarious perpetuation in the creation of a new individual of the same type. Hence, just as the joy of producing and maintaining offspring often supplants ambition, so the doctrine of immortality may be interpreted in racial rather than in personal terms. The worth of the individual may be thought of as conserved in

communal and over-individual aims — progress in science, art, invention, social organization. Even as the soldier gives his life freely that his cause may win, so perhaps the individual may willingly renounce his existence that the race may triumph and the superman be born.

The importance of racial purposes cannot be overestimated by the moral philosopher. Since the race is more powerful and enduring than the individual, men who measure their worth by their contributions to progress have a more stable basis for happiness than those who think only of self. Yet it is as impossible for the philosopher to guarantee the immortality of the race as to give assurance of the survival of the individual. And the worth of life should not be made to rest on uncriticized metaphysical assumptions. A rational happiness can be founded only on well-based ideas.

An estimate of the doctrine of racial immortality involves an interpretation of the evolutionary process and a study of its relation to the inorganic world of which, as we saw in our last chapter, it is an outgrowth. And here, it might seem, is a region where, contrary to the usual, an interpretation of nature in terms of purpose is possible. The connection of mind with the body and the apparently teleological character of the structure and functions of the organism appear to provide a clue.

The old theistic conception of evolution as a unified, masterful and anthropocentric process no longer recommends itself to dispassionate observation. There is, to be sure, much harmony of aims manifest in the similarity of structure and function in individuals of widely different

genera and in the mutual adjustment of species to one another; yet common origin and adaptation rather than a common aim suffice to explain them. And, on the other hand, the omnipresent fact of conflict — the soul with its high ambitions at odds with its unyielding body, bodies of the same species at battle with one another, the different species engaged in a death struggle, and all striving against the forces of the inorganic world — this fact, coupled with the divergence of the many contemporaneous lines of development, tells finally against the hypothesis of singleness of aim. One cannot claim that the bird ever did, or ever will, strive to be a man or that he exists to serve man. The group of facts which Haeckel has called dysteleological, such facts as the harmful persistence of organs in the body after their uses have been outgrown, monstrosities, abortions, insanity and disease, prove that the purposes expressed in the vital rhythm are not omnipotent. They show beyond a doubt that at every step this process has had to adjust itself, accommodate, compromise, retract.

The conception of Bergson that life has won its way to the creation and dominion of man only after much faltering and unclearness of aims, after many false steps and against the opposition of matter, is far more in harmony with the facts than the older theism. It gives wiser recognition to the great outstanding truth that life is only a fragment of a larger process, the process of the inorganic world, to which life has had continually to adjust itself, and on the sufferance of which it alone exists. Yet Bergson does not go far enough in this recognition. There is no evidence that man has so

ingratiated himself into favor with the will of nature, that he has so moulded his purposes into harmony with its purposes, that the perpetuity of his own is assured. Of course, the very existence of life and man's actual attainment are evidences that nature has at least consented to their presence in the world. Nature has not looked with indifference upon the fate of its offspring. Nevertheless, just as a gale at sea may overturn a boat and all on board may perish, so humanity may suffer shipwreck at the hands of cosmic forces.

The doctrine of the conservation of values, failing to find assurance for the individual and the race, has a final refuge in the hypothesis of a cosmical immortality. Even if, in the end, all human beings are destroyed and leave no offspring, it may still be true that their death is necessary to the development of the beings who destroy them, in whose increased perfection they may win perpetuation. Such a view would be only carrying to the ultimate limit the idealization of purpose which any father exemplifies when he thinks of the happiness of his children as the justification of his efforts, even of his failures, and willingly gives his life for them. Provided only that the cosmical purposes were in some fashion continuous with humanity's, including the latter in its own, a man could feel that the values of all his activities were eternalized there. If, moreover, he could think that no effort of his was lost, that even his sin and suffering and failure were means to the perfection of the universe, he would have a source of consolation and a motive for living triumphant over all despair. The task of religion — to

provide new and indefeasible motives for living — would be accomplished.

In face of such a conception of the meaning of human life, it is impossible for the philosopher to be speechless. He cannot accept it merely because of its sublimity and moving power, yet he can reject it only because of some positive view of the nature of reality with which it is in conflict. Obviously, the truth of every theodicy depends upon its ability successfully to take account of evil. It behooves us, therefore, both because of the independent interest which this fact must possess for the speculative philosopher, and because of its bearing on a great religious ideal, to inquire how we must think of it in terms of our own philosophy.

If every interest could be fulfilled, there would be only good and no evil in the world; for all evil clearly depends upon the obstruction or failure of a purpose. To ask for the cause of evil is, therefore, identical with inquiring into the grounds for failure. Now failure, I think, has no other source than the community and mutual dependence of our aims. If we were independent beings, each pursuing his own life without effect upon the lives of others, in atomistic or monadistic fashion, then there would be no evil — and also less of the good — in the world. But because for the realization of our purposes we need the co-operation of other wills, upon which we cannot count, and because, owing to the solidarity of our lives, we seek ends which are incompatible, the success and happiness of all is impossible. The clearest cases of this are to be found in our social life. When two men run a race, or compete for the love of a woman, or for

some prize or place, the happiness of one implies necessarily the unhappiness of the other. Or if, seeking to rise to higher and more intense ways of living, where one cannot live alone, — seeking more subtle and various values in art or social life — men strive to elevate their fellows who refuse, then, too, it is obvious that they must suffer. These examples of evils which grow out of our human solidarity and mutual dependence are typical, I believe, of all evil in the cosmos. For to us the cosmos is itself a larger society, and our relations with nature are of the same sort with our relations to our fellow men, only closer and more intimate. The failure of any purpose in the world is due, in the last resort, to its inability to win the co-operation of other individuals or to its incompatibility with their purposes.

There are, to be sure, certain evils like death and physical suffering which seem not to be explicable in this way. Yet we have already tried to bring the former within our theory. We have shown that we die because for us to live longer would interfere with the purposes expressed in the physical world. Our will to live is in competition with the will of the environment for self-expression through the sense elements which make up our bodies. As for physical suffering, Schopenhauer has given us, I think, the true explanation. Pain is an echo in the mind of the suffering of the somatic forces which have failed, for the time being, to maintain themselves in competition with the environment. We must remember that our sensations are a part of the mind expressed in the soma. We suffer when it becomes deranged because the realization of our wills depends upon its success.

Such suffering is comparable to the sympathetic pains which we feel when we see another man in distress upon whose happiness our own depends. Once more, we suffer because we do not live unto ourselves alone, because of the interwovenness of our wills. Through sympathy every failure is multiplied; hence, here we find another great source of evil in the world, sprung from the same root of solidarity.

There is, finally, another type of evil which can be traced to the same fact — I mean sin. Sin is another instance of failure due to the competition of purposes — a broader and sympathetic purpose, looking to the future and total interests of the individual, and including his relations to other individuals, vying with some narrower purpose, rooted usually in the animal self. The animal impulses are not in themselves sinful; in harmony with the more inclusive and subtle purposes, they are an indispensable element in the worth of life, feeding all the rest; and isolated, as in the animal or the savage, they may be low, but they are not evil. It is only when they are in conflict with other purposes that there is sin. The poignant peculiarity of sin resides in this complexity and internality: the conflict is within, and the failure is due, not to the interference of an external purpose, but to an element of our own nature. We are unhappy because, despite the triumph of the lower self — which, in itself, would be a good, yielding in pleasure its reward — we still maintain our thwarted end and feel sympathetically the sorrow and disapproval of our fellows who take its side. Obviously, were it not for the intimate communion between parts of our own nature

and between individuals, there would be no sin and no remorse.

An empirical metaphysic would be content to do what we think we have accomplished, to trace the root of evil in the conflict and solidarity of purposes. But theodicy goes beyond and demands not only a ground, but a good. It is unwilling to accept evil as something inherent in the nature of reality and therefore not further explicable, but demands an explanation in terms of purpose. An attempt is made to prove that every type of evil not only may be, but actually is, a source of good. And that certain goods are conditioned by failure, there can be no doubt. First, there are the values of triumph and competition — the joys of striving against and proving oneself superior, distinction and cruelty, pride and scorn and the rest. Men little realize how large a share of their delights they owe to the existence of their enemies and inferiors. These values, of course, are not commonly emphasized by moralists and apologists of the universe, yet, they are none the less a real compensation for evil, however distasteful to sensitive and high-minded natures. But second, failure makes possible a large share of the moral and aesthetic values — endurance, helpfulness and self-sacrifice, comedy and tragedy. Without suffering there could have been no Prometheus; without sin, no Christ; without either, no Aristophanes or Swift, no Shakespeare or Goethe. So much at least seems certain — there is no evil which does not offer an opportunity for some good.

The Theist, as we have remarked, again goes further, asserting that this potential opportunity is always realized;

which, so far as the world of human life is concerned, is certainly not true. It is not true that every individual wins strength or spiritual grace from sorrow and failure; quite as often he is only crippled and embittered. Insanity and suicide are clear proofs that there are evils too hard for some to bear and profit by. And, even when the sphere of atonement is enlarged beyond the individual to include his fellow men, we have to admit that there are many evils which are not justified by the kindness, the remedial or scientific or aesthetic activities called forth because of them, in other men. They cannot help us in our unrecorded despairs, or create beauty out of the pains of the neurasthenic or the agonies of drowning men.

Yet if we take in the larger environment of man, if we include nature which surrounds and supports us, may not even such evils as these be atoned for ? There may be superhuman beings who triumph when we fail, who win something by our death, and from whose sight the agonies of drowning men are not hidden. We do not know what supreme tragic or comic poet there may not be watching our mortal sufferings and making of them verses with pity and fear. This is the hypothesis of Royce. In the life of the Absolute, of which we are parts, all evils are atoned for. He wins through our very losses, just as we win where we ourselves lose, whenever we resist temptation or weakness, or make something of worth for knowledge or art or character out of our sins or failures.

In our own interpretation of nature, we have surely enlarged the scope of the significance of human action, pro-

viding room for all sorts of values to be realized in nature through our sufferings and failures. Yet even if there were no evil in the life of any individual which was not atoned for in that of another, we could not be content. For, although we would not minimize the worth of such atonement even for the vanquished, realizing that we are able, through sympathy, to put ourselves in the place of the victor or spectator, even in defeat; nevertheless it is impossible wholly to get rid of the consciousness of the relativity of good and evil. Our values are too personal and our sympathies too democractic for us to view with complacence the sacrifice of one individual to another, especially without the knowledge and consent of the victim. We do not bear the same relation to one another that we bear to ourselves, or to nature as to our children or the state, with whose aims we have sympathy and understanding. However lofty be nature's aims — and we do not doubt that they are higher than our own; still, they are not ours. To consent to one's own defeat, in ignorance of the cause which triumphs, involves a self-abnegation more pusillanimous than noble. We are more high-minded if, remaining loyal to our purposes, we keep our protest, asking of nature that she adjust her aims to ours, or, if this is impossible, that she at least include ours in her own. Failing this, even if we no longer strive, we cannot greet the world as good.

Royce, of course, with his view that nature is not a separate individual or individuals, but a self which includes us as parts, might seem to provide a way out of the difficulties which we have been stressing. For, if his view were true, we

ourselves who fail would also triumph in the successes of the absolute. The will of the absolute that we die would be our own will, just as it is our own will which expresses itself both in an impulse which is suppressed and in the ideal which triumphs. But in our chapter on the unity of minds we have shown the unreasonableness of the premiss on which this doctrine rests, namely that various minds can unite together in a more inclusive mind. And, empirically, there is no such tie as this between our minds and those of our fellows, or between our minds and those of nature. We are at once the sorrow and the endurance of sorrow, the regret and the bearing of regret, but we do not feel another's suffering as we do our own, nor do we feel the absolute's masterful joys.

We conclude, therefore, that any attempt to find a reason for evil, in the sense of an inclusive good which should absorb and atone for it all, is doomed to failure. We can find the root of evil, but not the justification of it. We cannot eliminate the individuality of purposes or their incompatibility, which even sympathy cannot entirely overcome. The good, like the evil, is always from a point of view which is finite. We cannot call the whole world good, because there is no all-embracing will or purpose. And even were we able to renounce our own personal wills, and take a disinterested survey of the universe, we could not be content that some should suffer, in order that others might triumph. Our sense of justice requires that we distribute our sympathy; we cannot confine it to the few, no matter how exalted. Our democratic ideal of the good is incompatible with theodicy.

After registering our belief that philosophy cannot prove the ideas of immortality or theodicy, it is incumbent upon us to ask, first, what, in view of this, we shall think of the cosmos, and second, what we shall think of ourselves. It must be admitted that for him who has renounced these beliefs, a new world dawns.

First, negatively, we cannot look upon the cosmos as cruel for not realizing these our wishes: the fate that destroys us is no wanton spirit reveling in our death. Whatever happens to us occurs, not for its own sake, but because otherwise some being not ourselves could not realize its destiny. Our death is necessary to the perfection of those forces which, destroying the form of the body, need its material for their own uses. We cannot blame them for seeking their own perfection or expect that they should renounce their own wills for ours. Surely we have no right to live superior to that of all other creatures. We may project an ideal of mutual accommodation whereby all may achieve success; but we do not know that any method could be devised to this end; and, short of this, it is surely better that in a free competition of purposes some should be realized rather than none. It would not be " good cosmic manners " to curse our competitors and be unwilling gracefully to fail and die.

Again, in our view there is none of the sting of those theories which regard man as the sport of blind and inferior forces, which suppose that there is no reason for our failure and death. For, according to our animistic conception of nature, there are no such forces as these. The beings which feed upon our death are doubtless far higher than we are:

hence we cannot think it wholly unjust that they should exert control over our destiny. And with our view of individual responsibility, we cannot complain that they have fed us on illusions of immortality only to destroy us; for the belief in survival, as we have seen, is only a natural, though illusory, development of our own instinct of self-preservation. Finally, we cannot doubt that nature has had regard for us. The actual existence of man on the earth, and the high development which he has attained there, are evidences that our parent nature which produced us has been kind to us, its offspring. Nature, we reiterate, has co-operated with us in our endeavors, adjusting its will to ours, so far as it could. We are indeed made to suffer and die, but our death and suffering are doubtless necessary. And, on the other hand, we are permitted to obtain a real, if mortal, happiness.

I do not advocate any mood of quietism or resignation in our attitude towards nature; but only that some courtesy and self-limitation which we exercise towards those who have proved themselves superior in the attainment of anything which we ourselves have been seeking. We do not wish to arrogate everything to ourselves, nor do we feel hate or envy towards those who have succeeded where we have failed. Just as we are willing to forego something that other members of society may profit, so in our relations with the larger society which is the cosmos, we cannot complain because we are not given full scope to our desires. Yet, just as in society we deem it our right to live our own lives, so in the cosmos. We are willing to co-operate with all forces with which co-operation is possible; and even to limit our

happiness where that is necessary; but not passively to resign ourselves to a fate which we do not understand. We rightfully seek to control our own destiny, knowing that the control which we actually exert will be only so much as other beings, greater than we, find it compatible with their own ends to permit.

After having lived some time away from the theistic position, one does not look back with regret upon it; or only with such regret, perhaps, as one remembers the childhood that is outgrown. After measuring one's strength, without fear or favor, in the great world of conflicting aims seeking adjustment, the conception of man as the world's darling cared for by a benignant heavenly father, while appealing to old memories in moments of weakness, is too unreal and too little challenging to courage and adventure, to keep hold of the twentieth century man. One finally ceases to wish to live in that protected world. Reviewing the past century, as we who are far enough from it can do, we can understand, though we cannot share, its pessimism, as the result of a disillusion coming to sensitive spirits incapable of making a heroic adjustment to a new view of life. Our children, who will not have had the illusion, will be free also from the disappointment. And they will not be required to win that victory over self which has been our portion.

Here our task as metaphysicians is ended. We have tried to exhibit the nature of the world in which we live; we have shown the bearing of our doctrine upon certain old cherished conceptions; we have explained the attitude towards the world which commends itself to us in view of our theory.

There is one thing more which we might do. We might show how life can be justified despite mortality and the failure of theodicy. All the fundamental values of human existence remain intact. He surely has small hold upon the good who, despite sorrow and disappointment, does not find life worth while, just in thinking and loving, in laughing and creating, be it only for a brief period, followed by a sleep where no evil memories mock. But to enforce this conviction belongs to the moralist, not to the speculative philosopher.

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