

Nature Alive (1938)

Alfred North Whitehead

THE STATUS of LIFE in nature, as defined in the previous chapter, is the modern problem of philosophy and of science. Indeed it is the central meeting point of all the strains of systematic thought, humanistic, naturalistic, philosophic. The very meaning of life is in doubt. When we understand it, we shall also understand its status in the world. But its essence and its status are alike baffling.

After all, this conclusion is not very different from our conclusion respecting nature, considered in abstraction from the notion of life. We were left with the notion of an activity in which nothing is effected. Also this activity, thus considered, discloses no ground for its own coherence. There is merely a formula for succession. But there is an absence of understandable causation to give a reason for that formula for that succession. Of course it is always possible to work oneself into a state of complete contentment with [203]an ultimate irrationality. The popular positivistic philosophy adopts this attitude.

The weakness of this positivism is the way in which we all welcome the detached fragments of explanation attained in our present stage of civilization. Suppose that a hundred thousand years ago our ancestors had been wise positivists. They sought for no reasons. What they had observed was sheer matter of fact. It was the development of no necessity. They would have searched for no reasons underlying facts immediately observed. Civilization would never have developed. Our varied powers of detailed observation of the world would have remained dormant. For the peculiarity of a reason is that the intellectual development of its consequences suggests consequences beyond the topics already observed. The extension of observation waits upon some dim apprehension of reasonable connection. For example, the observation of insects on flowers dimly suggests some congruity between the natures of insects and of flowers, and thus leads to a wealth of observation from which whole branches of science have developed. But a consistent positivist should be content with the observed facts, namely insects visiting flowers. It is a fact of charming simplicity. There is nothing further to be said upon the matter, according to the doctrine of a positivist. At present the [204]scientific world is suffering from a bad attack of muddle-headed positivism, which arbitrarily applies its doctrine and arbitrarily escapes from it. The whole doctrine of life in nature has suffered from this positivist taint. We are told that there is the routine described in physical and chemical formulae, and that in the process of nature there is nothing else.

The origin of this persuasion is the dualism which gradually developed in European thought in respect to mind and nature. At the beginning of the modern period Descartes expresses this dualism with the utmost distinctness. For him, there are material substances with spatial relations, and mental substances. The mental substances are external to the material substances. Neither type requires the other type for the completion of its essence. Their unexplained interrelations are unnecessary for their respective existences. In truth, this formulation of the problem in terms of minds and matter is unfortunate. It omits the lower forms of life, such as vegetation and the lower animal types. These forms touch upon human mentality at their highest, and upon inorganic nature at their lowest.

The effect of this sharp division between nature and life has poisoned all subsequent philosophy. Even when the coördinate existence of the two types of actualities is abandoned, there is no [205]proper fusion of the two in most modern schools of thought. For some, nature is mere appearance and mind is the sole reality. For others, physical nature is the sole reality and mind is an epiphenomenon. Here the phrases 'mere

appearance' and 'epiphenomenon' obviously carry the implication of slight importance for the understanding of the final nature of things.

The doctrine that I am maintaining is that neither physical nature nor life can be understood unless we fuse them together as essential factors in the composition of 'really real' things whose interconnections and individual characters constitute the universe.

The first step in the argument must be to form some concept of what life can mean. Also we require that the deficiencies in our concept of physical nature should be supplied by its fusion with life. And we require that, on the other hand, the notion of life should involve the notion of physical nature.

Now as a first approximation the notion of life implies a certain absoluteness of self-enjoyment. This must mean a certain immediate individuality, which is a complex process of appropriating into a unity of existence the many data presented as relevant by the physical processes of nature. Life implies the absolute, individual self-enjoyment arising out of this process [206]of appropriation. I have, in my recent writings, used the word 'prehension' to express this process of appropriation. Also I have termed each individual act of immediate self-enjoyment an 'occasion of experience'. I hold that these unities of existence, these occasions of experience, are the really real things which in their collective unity compose the evolving universe, ever plunging into the creative advance.

But these are forward references to the issue of the argument. As a first approximation we have conceived life as implying absolute, individual self-enjoyment of a process of appropriation. The data appropriated are provided by the antecedent functioning of the universe. Thus the occasion of experience is absolute in respect to its immediate self-enjoyment. How it deals with its data is to be understood without reference to any other concurrent occasions. Thus the occasion, in reference to its internal process, requires no contemporary process in order to exist. In fact this mutual independence in the internal process of self-adjustment is the definition of contemporaneousness.

This concept of self-enjoyment does not exhaust that aspect of process here termed 'life'. Process for its intelligibility involves the notion of a creative activity belonging to the very essence of each occasion. It is the process of eliciting into [207]actual being factors in the universe which antecedently to that process exist only in the mode of unrealized potentialities. The process of self-creation is the transformation of the potential into the actual, and the fact of such transformation includes the immediacy of self-enjoyment.

Thus in conceiving the function of life in an occasion of experience, we must discriminate the actualized data presented by the antecedent world, the non-actualized potentialities which lie ready to promote their fusion into a new unity of experience, and the immediacy of self-enjoyment which belongs to the creative fusion of those data with those potentialities. This is the doctrine of the creative advance whereby it belongs to the essence of the universe, that it passes into a future. It is nonsense to conceive of nature as a static fact, even for an instant devoid of duration. There is no nature apart from transition, and there is no transition apart from temporal duration. This is the reason why the notion of an instant of time, conceived as a primary simple fact, is nonsense.

But even yet we have not exhausted the notion of creation which is essential to the understanding of nature. We must add yet another character to our description of life. This missing characteristic is 'aim'. By this term 'aim' is meant the exclusion of the boundless wealth of alternative [208]potentiality, and the inclusion of that definite factor of novelty which constitutes the selected way of entertaining those data in that process of unification. The aim is at that complex of feeling which is the enjoyment of those data in that way. 'That way of enjoyment' is selected from the boundless wealth of alternatives. It has been aimed at for actualization in that process.

Thus the characteristics of life are absolute self-enjoyment, creative activity, aim. Here ‘aim’ evidently involves the entertainment of the purely ideal so as to be directive of the creative process. Also the enjoyment belongs to the process and is not a characteristic of any static result. The aim is at the enjoyment belonging to the process.

The question at once arises as to whether this factor of life in nature, as thus interpreted, corresponds to anything that we observe in nature. All philosophy is an endeavor to obtain a self-consistent understanding of things observed. Thus its development is guided in two ways, one is the demand for a coherent self-consistency, and the other is the elucidation of things observed. It is therefore our first task to compare the above doctrine of life in nature with our direct observations.

Without doubt the sort of observations most prominent in our conscious experience are the [209]sense-perceptions. Sight, hearing, taste, smell, touch, constitute a rough list of our major modes of perception through the senses. But there are an indefinite set of obscure bodily feelings which form a background of feeling with items occasionally flashing into prominence. The peculiarity of sense-perception is its dual character, partly irrelevant to the body and partly referent to the body. In the case of sight, the irrelevance to the body is at its maximum. We look at the scenery, at a picture, or at an approaching car on the road, as an external presentation given for our mental entertainment or mental anxiety. There it is, exposed to view. But on reflection, we elicit the underlying experience that we were seeing with our eyes. Usually this fact is not in explicit consciousness at the moment of perception. The bodily reference is recessive, the visible presentation is dominant. In the other modes of sensation, the body is more prominent. There is great variation in this respect between the different modes. In any doctrine as to the information derived from sense-perception this dual reference, external reference and bodily reference, should be kept in mind. The current philosophic doctrines, mostly derived from Hume, are defective by reason of their neglect of bodily reference. Their vice is the deduction of a sharp-cut doctrine from an assumed sharp-cut mode of per- [210]-ception. The truth is that our sense-perceptions are extraordinarily vague and confused modes of experience. Also there is every evidence that their prominent side of external reference is very superficial in its disclosure of the universe. It is important. For example, pragmatically a paving-stone is a hard, solid, static, irremovable fact. This is what sense-perception, on its sharp-cut side, discloses. But if physical science be correct, this is a very superficial account of that portion of the universe which we call the paving-stone. Modern physical science is the issue of a co-ordinated effort, sustained for more than three centuries, to understand those activities of Nature by reason of which the transitions of sense-perception occur.

Two conclusions are now abundantly clear. One is that sense-perception omits any discrimination of the fundamental activities within nature. For example, consider the difference between the paving-stone as perceived visually, or by falling upon it, and the molecular activities of the paving-stone as described by the physicist. The second conclusion is the failure of science to endow its formulae for activity with any meaning. The divergence of the formulae about nature from the appearance of nature has robbed the formulae of any explanatory character. It has even robbed us of reason for believing that [211]the past gives any ground for expectation of the future. In fact, science conceived as resting on mere sense-perception, with no other source of observation, is bankrupt, so far as concerns its claim to self-sufficiency.

Science can find no individual enjoyment in nature: Science can find no aim in nature: Science can find no creativity in nature; it finds mere rules of succession. These negations are true of Natural Science. They are inherent in its methodology. The reason for this blindness of Physical Science lies in the fact that such Science only deals with half the evidence provided by human experience. It divides the seamless coat—or, to

change the metaphor into a happier form, it examines the coat, which is superficial, and neglects the body which is fundamental.

The disastrous separation of body and mind which has been fixed on European thought by Descartes is responsible for this blindness of Science. In one sense the abstraction has been a happy one, in that it has allowed the simplest things to be considered first, for about ten generations. Now these simplest things are those widespread habits of nature that dominate the whole stretch of the universe within our remotest, vaguest observation. None of these Laws of Nature gives the slightest evidence of necessity. They are the modes of procedure which [212] within the scale of our observations do in fact prevail. I mean, the fact that the extensiveness of the Universe is dimensional, the fact that the number of spatial dimensions is three, the spatial laws of geometry, the ultimate formulae for physical occurrences. There is no necessity in any of these ways of behaviour. They exist as average, regulative conditions because the majority of actualities are swaying each other to modes of interconnection exemplifying those laws. New modes of self-expression may be gaining ground. We cannot tell. But, to judge by all analogy, after a sufficient span of existence our present laws will fade into unimportance. New interests will dominate. In our present sense of the term, our spatio-physical epoch will pass into that background of the past, which conditions all things dimly and without evident effect on the decision of prominent relations.

These massive laws, at present prevailing, are the general physical laws of inorganic nature. At a certain scale of observation they are prevalent without hint of interference. The formation of suns, the motions of planets, the geologic changes on the earth, seem to proceed with a massive impetus which excludes any hint of modification by other agencies. To this extent sense-perception on which science relies discloses no aim in nature.

[213] Yet it is untrue to state that the general observation of mankind, in which sense-perception is only one factor, discloses no aim. The exact contrary is the case. All explanations of the sociological functionings of mankind include 'aim' as an essential factor in explanation. For example, in a criminal trial where the evidence is circumstantial the demonstration of motive is one chief reliance of the prosecution. In such a trial would the defence plead the doctrine that purpose could not direct the motions of the body, and that to indict the thief for stealing was analogous to indicting the sun for rising? Again no statesman can conduct international relations without some estimate—implicit or explicit in his consciousness—of the types of patriotism respectively prevalent in various nations and in the statesmen of these nations. A lost dog can be seen trying to find his master or trying to find his way home. In fact we are directly conscious of our purposes as directive of our actions. Apart from such direction no doctrine could in any sense be acted upon. The notions entertained mentally would have no effect upon bodily actions. Thus what happens would happen in complete indifference to the entertainment of such notions.

Scientific reasoning is completely dominated by the presupposition that mental functionings [214] are not properly part of nature. Accordingly it disregards all those mental antecedents which mankind habitually presuppose as effective in guiding cosmological functionings. As a method this procedure is entirely justifiable, provided that we recognize the limitations involved. These limitations are both obvious and undefined. The gradual eliciting of their definition is the hope of philosophy.

The points that I would emphasize are, first that this sharp division between mentality and nature has no ground in our fundamental observation. We find ourselves living within nature. Secondly, I conclude that we should conceive mental operations as among the factors which make up the constitution of nature. Thirdly, that we should reject the notion of idle wheels in the process of nature. Every factor which emerges makes a difference, and that difference can only be expressed in terms of the individual character of that factor.

Fourthly, that we have now the task of defining natural facts, so as to understand how mental occurrences are operative in conditioning the subsequent course of nature.

A rough division can be made of six types of occurrences in nature. The first type is human existence, body and mind. The second type includes all sorts of animal life, insects, the vertebrates, and other genera. In fact all the various [215]types of animal life other than human. The third type includes all vegetable life. The fourth type consists of the single living cells. The fifth type consists of all large scale inorganic aggregates, on a scale comparable to the size of animal bodies, or larger. The sixth type is composed of the happenings on an infinitesimal scale, disclosed by the minute analysis of modern physics.

Now all these functionings of Nature influence each other, require each other, and lead on to each other. The list has purposely been made roughly, without any scientific pretension. The sharp-cut scientific classifications are essential for scientific method. But they are dangerous for philosophy. Such classification hides the truth that the different modes of natural existence shade off into each other. There is the animal life with its central direction of a society of cells, there is the vegetable life with its organized republic of cells, there is the cell life with its organized republic of molecules, there is the large-scale inorganic society of molecules with its passive acceptance of necessities derived from spatial relations, there is the infra-molecular activity which has lost all trace of the passivity of inorganic nature on a larger scale.

In this survey some main conclusions stand out. One conclusion is the diverse modes of functioning which are produced by diverse modes of [216]organization. The second conclusion is the aspect of continuity between these different modes. There are border-line cases, which bridge the gaps. Often the borderline cases are unstable, and pass quickly. But span of existence is merely relative to our habits of human life. For infra-molecular occurrence, a second is a vast period of time. A third conclusion is the difference in the aspects of nature according as we change the scale of observation. Each scale of observation presents us with average effects proper to that scale.

Again, another consideration arises. How do we observe nature? Also, what is the proper analysis of an observation? The conventional answer to this question is that we perceive nature through our senses. Also in the analysis of sense-perception we are apt to concentrate upon its most clear-cut instance, namely sight. Now visual perception is the final product of evolution. It belongs to high grade animals—to vertebrates and to the more advanced type of insects. There are numberless living things which afford no evidence of possessing sight. Yet they show every sign of taking account of their environment in the way proper to living things. Also human beings shut off sight with peculiar ease, by closing our eyes or by the calamity of blindness. The information provided by mere sight is [217]peculiarly barren—namely external regions disclosed as coloured. There is no necessary transition of colours, and no necessary selection of regions, and no necessary mutual adaptation of the display of colours. Sight at any instant merely provides the passive fact of regions variously coloured. If we have memories, we observe the transition of colours. But there is nothing intrinsic to the mere coloured regions which provides any hint of internal activity whereby change can be understood. It is from this experience that our conception of a spatial distribution of passive material substances arises. Nature is thus described as made up of vacuous bits of matter with no internal values, and merely hurrying through space.

But there are two accompaniments of this experience which should make us suspicious of accepting it at its face value as any direct disclosure of the metaphysical nature of things. In the first place, even in visual experience we are also aware of the intervention of the body. We know directly that we see with our eyes. That is a vague feeling, but extremely important. Secondly, every type of crucial experiment proves that what we see, and where we see it, depend entirely upon the physiological functioning of our body. Any method of

making our body function internally in a given way, will provide us [218]with an assigned visual sensation. The body is supremely indifferent to the happenings of nature a short way off, where it places its visual sense.

Now the same is true of all other modes of sensation, only to a greater extent. All sense-perception is merely one outcome of the dependence of our experience upon bodily functionings. Thus if we wish to understand the relation of our personal experience to the activities of nature, the proper procedure is to examine the dependence of our personal experiences upon our personal bodies.

Let us ask about our overwhelming persuasions as to our own personal body-mind relation. In the first place, there is the claim to unity. The human individual is one fact, body and mind. This claim to unity is the fundamental fact, always presupposed, rarely explicitly formulated. I am experiencing and my body is mine. In the second place, the functioning of our body has a much wider influence than the mere production of sense-experience. We find ourselves in a healthy enjoyment of life by reason of the healthy functionings of our internal organs—heart, lungs, bowels, kidneys, etc. The emotional state arises just because they are not providing any sense directly associated with themselves. Even in sight, we enjoy our vision because there is no eyestrain. [219]Also we enjoy our general state of life, because we have no stomachache. I am insisting that the enjoyment of health, good or bad, is a positive feeling only casually associated with particular sense. For example, you can enjoy the ease with which your eyes are functioning even when you are looking at a bad picture or a vulgar building. This direct feeling of the derivation of emotion from the body is among our fundamental experiences. There are emotions of various types—but every type of emotion is at least modified by derivation from the body. It is for physiologists to analyse in detail the modes of bodily functioning. For philosophy, the one fundamental fact is that the whole complexity of mental experience is either derived or modified by such functioning. Also our basic feeling is this sense of derivation, which leads to our claim for unity, body and mind.

But our immediate experience also claims derivation from another source, and equally claims a unity founded upon this alternative source of derivation. This second source is our own state of mind directly preceding the immediate present of our conscious experience. A quarter of a second ago, we were entertaining such and such ideas, we were enjoying such and such emotions, and we were making such and such observations of external fact. In our present [220]state of mind, we are continuing that previous state. The word ‘continuing’ states only half the truth. In one sense it is too weak, and in another sense it overstates. It is too weak, because we not only continue, but we claim absolute identity with our previous state. It was our very identical self in that state of mind, which is of course the basis of our present experience a quarter of a second later. In another sense the word ‘continuing’ overstates. For we do not quite continue in our preceding state of experience. New elements have intervened. All of these new elements are provided by our bodily functionings. We fuse these new elements with the basic stuff of experience provided by our state of mind a quarter of a second ago. Also, as we have already agreed, we claim an identification with our body. Thus our experience in the present discloses its own nature as with two sources of derivation, namely, the body and the antecedent experiential functionings. Also there is a claim for identification with each of these sources. The body is mine, and the antecedent experience is mine. Still more, there is only one ego, to claim the body and to claim the stream of experience. I submit that we have here the fundamental basic persuasion on which we found the whole practice of our existence. While we exist, body and soul are inescapable elements in [221]our being, each with the full reality of our own immediate self. But neither body nor soul possesses the sharp observational definition which at first sight we attribute to them. Our knowledge of the body places it as a complex unity of happenings within the larger field of nature. But its demarcation from the rest of nature is vague in the extreme. The body consists of the coördinated functionings of billions of

molecules. It belongs to the structural essence of the body that, in an indefinite number of ways, it is always losing molecules and gaining molecules. When we consider the question with microscopic accuracy, there is no definite boundary to determine where the body begins and external nature ends. Again the body can lose whole limbs, and yet we claim identity with the same body. Also the vital functions of the cells in the amputated limb ebb slowly. Indeed the limb survives in separation from the body for an immense time compared to the internal vibratory periods of its molecules. Also apart from such catastrophes, the body requires the environment in order to exist. Thus there is a unity of the body with the environment, as well as a unity of body and soul into one person.

But in conceiving our personal identity we are apt to emphasize rather the soul than the body. The one individual is that coördinated stream [222]of personal experiences, which is my thread of life or your thread of life. It is that succession of self-realization, each occasion with its direct memory of its past and with its anticipation of the future. That claim to enduring self-identity is our self-assertion of personal identity.

Yet when we examine this notion of the soul, it discloses itself as even vaguer than our definition of the body. First, the continuity of the soul—so far as concerns consciousness—has to leap gaps in time. We sleep or we are stunned. And yet it is the same person who recovers consciousness. We trust to memory, and we ground our trust on the continuity of the functionings of nature, more especially on the continuity of our body. Thus nature in general and the body in particular provide the stuff for the personal endurance of the soul. Again there is a curious variation in the vividness of the successive occasions of the soul's existence. We are living at full stretch with a keen observation of external occurrence; then external attention dies away and we are lost in meditation; the meditation gradually weakens in vivid presentation: we doze; we dream; we sleep with a total lapse of the stream of consciousness. These functionings of the soul are diverse, variable, and discontinuous. The claim to the unity of the soul is analogous to the claim to the unity of the body, and is [223]analogous to the claim to the unity of body and soul, and is analogous to the claim to the community of the body with an external nature. It is the task of philosophic speculation to conceive the happenings of the universe so as to render understandable the outlook of physical science and to combine this outlook with these direct persuasions representing the basic facts upon which epistemology must build. The weakness of the epistemology of the eighteenth and nineteenth centuries was that it based itself purely upon a narrow formulation of sense-perception. Also among the various modes of sensation, visual experience was picked out as the typical example. The result was to exclude all the really fundamental factors constituting our experience.

In such an epistemology we are far from the complex data which philosophic speculation has to account for in a system rendering the whole understandable. Consider the types of community of body and soul, of body and nature, of soul and nature, or successive occasions of bodily existence, or the soul's existence. These fundamental interconnections have one very remarkable characteristic. Let us ask what is the function of the external world for the stream of experience which constitute the soul. This world, thus experienced, is the basic fact within those experiences. All the emotions, and purposes, and en-[224]-joyments, proper to the individual existence of the soul are nothing other than the soul's reactions to this experienced world which lies at the base of the soul's existence.

Thus in a sense, the experienced world is one complex factor in the composition of many factors constituting the essence of the soul. We can phrase this shortly by saying that in one sense the world is in the soul.

But there is an antithetical doctrine balancing this primary truth. Namely, our experience of the world involves the exhibition of the soul itself as one of the components within the world. Thus there is a dual

aspect to the relationship of an occasion of experience as one relatum and the experienced world as another relatum. The world is included within the occasion in one sense, and the occasion is included in the world in another sense. For example, I am in the room, and the room is an item in my present experience. But my present experience is what I now am.

But this baffling antithetical relation extends to all the connections which we have been discussing. For example, consider the enduring self-identity of the soul. The soul is nothing else than the succession of my occasions of experience, extending from birth to the present moment. Now, at this instant, I am the complete person embodying all these occasions. They are [225]mine. On the other hand it is equally true that my immediate occasion of experience, at the present moment, is only one among the stream of occasions which constitutes my soul. Again, the world for me is nothing else than how the functionings of my body present it for my experience. The world is thus wholly to be discerned within those functionings. Knowledge of the world is nothing else than an analysis of the functionings. And yet, on the other hand, the body is merely one society of functionings within the universal society of the world. We have to construe the world in terms of the bodily society, and the bodily society in terms of the general functionings of the world.

Thus, as disclosed in the fundamental essence of our experience, the togetherness of things involves some doctrine of mutual immanence. In some sense or other, this community of the actualities of the world means that each happening is a factor in the nature of every other happening. After all, this is the only way in which we can understand notions habitually employed in daily life. Consider our notion of 'causation'. How can one event be the cause of another? In the first place, no event can be wholly and solely the cause of another event. The whole antecedent world conspires to produce a new occasion. But some one occasion in an important way con-[226]-ditions the formation of a successor. How can we understand this process of conditioning?

The mere notion of transferring a quality is entirely unintelligible. Suppose that two occurrences may be in fact detached so that one of them is comprehensible without reference to the other. Then all notion of causation between them, or of conditioning, becomes unintelligible. There is—with this supposition—no reason why the possession of any quality by one of them should in any way influence the possession of that quality, or of any other quality, by the other. With such a doctrine the play and interplay of qualitative succession in the world becomes a blank fact from which no conclusions can be drawn as to past, present, or future, beyond the range of direct observation. Such a positivistic belief is quite self-consistent, provided that we do not include in it any hopes for the future or regrets for the past. Science is then without any importance. Also effort is foolish, because it determines nothing. The only intelligible doctrine of causation is founded on the doctrine of immanence. Each occasion presupposes the antecedent world as active in its own nature. This is the reason why events have a determinate status relatively to each other. Also it is the reason why the qualitative energies of the past are combined into a pattern of qualita-[227]-tive energies in each present occasion. This is the doctrine of causation. It is the reason why it belongs to the essence of each occasion that it is where it is. It is the reason for the transference of character from occasion to occasion. It is the reason for the relative stability of laws of nature, some laws for a wider environment, some laws for a narrower environment. It is the reason why—as we have already noted—in our direct apprehension of the world around us we find that curious habit of claiming a two-fold unity with the observed data. We are in the world and the world is in us. Our immediate occasion is in the society of occasions forming the soul, and our soul is in our present occasion. The body is ours, and we are an activity within our body. This fact of observation, vague but imperative, is the foundation of the connexity of the world, and of the transmission of its types of order.

In this survey of the observational data in terms of which our philosophic cosmology must be founded, we have brought together the conclusions of physical science, and those habitual persuasions dominating the sociological functionings of mankind. These persuasions also guide the humanism of literature, of art, and of religion. Mere existence has never entered into the consciousness of man, except as the remote terminus of an abstraction in thought. Descartes' [228]'Cogito, ergo sum' is wrongly translated, 'I think, therefore I am'. It is never bare thought or bare existence that we are aware of. I find myself as essentially a unity of emotions, enjoyments, hopes, fears, regrets, valuations of alternatives, decisions—all of them subjective reactions to the environment as active in my nature. My unity—which is Descartes' 'I am'—is my process of shaping this welter of material into a consistent pattern of feelings. The individual enjoyment is what I am in my role of a natural activity, as I shape the activities of the environment into a new creation, which is myself at this moment; and yet, as being myself, it is a continuation of the antecedent world. If we stress the role of the environment, this process is causation. If we stress the role of my immediate pattern of active enjoyment, this process is self-creation. If we stress the role of the conceptual anticipation of the future whose existence is a necessity in the nature of the present, this process is the teleological aim at some ideal in the future. This aim, however, is not really beyond the present process. For the aim at the future is an enjoyment in the present. It thus effectively conditions the immediate self-creation of the new creature.

We can now again ask the final question as put forward at the close of the former lecture. Physical science has reduced nature to activity, [229]and has discovered abstract mathematical formulae which are illustrated in these activities of Nature. But the fundamental question remains, How do we add content to the notion of bare activity? This question can only be answered by fusing life with nature.

In the first place, we must distinguish life from mentality. Mentality involves conceptual experience, and is only one variable ingredient in life. The sort of functioning here termed 'conceptual experience' is the entertainment of possibilities for ideal realization in abstraction from any sheer physical realization. The most obvious example of conceptual experience is the entertainment of alternatives. Life lies below this grade of mentality. Life is the enjoyment of emotion, derived from the past and aimed at the future. It is the enjoyment of emotion which was then, which is now, and which will be then. This vector character is of the essence of such entertainment.

The emotion transcends the present in two ways. It issues from, and it issues towards. It is received, it is enjoyed, and it is passed along, from moment to moment. Each occasion is an activity of concern, in the Quaker sense of that term. It is the conjunction of transcendence and immanence. The occasion is concerned, in the way of feeling and aim, with things that in their own [230]essence lie beyond it; although these things in their present functions are factors in the concern of that occasion. Thus each occasion, although engaged in its own immediate self-realization, is concerned with the universe.

The process is always a process of modification by reason of the numberless avenues of sup-ply, and by reason of the numberless modes of qualitative texture. The unity of emotion, which is the unity of the present occasion, is a patterned texture of qualities, always shifting as it is passed into the future. The creative activity aims at preservation of the components and at preservation of intensity. The modifications of pattern, the dismissal into elimination, are in obedience to this aim.

In so far as conceptual mentality does not intervene, the grand patterns pervading the environment are passed on with the inherited modes of adjustment. Here we find the patterns of activity studied by the physicists and chemists. Mentality is merely latent in all these occasions as thus studied. In the case of inorganic nature any sporadic flashes are inoperative so far as our powers of discernment are concerned. The lowest stages of effective mentality, controlled by the inheritance of physical pattern, involves the faint

direction of emphasis by unconscious ideal aim. The various examples of the higher forms [231]of life exhibit the variety of grades of effectiveness of mentality. In the social habits of animals, there is evidence of flashes of mentality in the past which have degenerated into physical habits. Finally in the higher mammals and more particularly in mankind, we have clear evidence of mentality habitually effective. In our own experience, our knowledge consciously entertained and systematized can only mean such mentality, directly observed.

The qualities entertained as objects in conceptual activity are of the nature of catalytic agents, in the sense in which that phrase is used in chemistry. They modify the aesthetic process by which the occasion constitutes itself out of the many streams of feeling received from the past. It is not necessary to assume that conceptions introduce additional sources of measurable energy. They may do so; for the doctrine of the conservation of energy is not based upon exhaustive measurements. But the operation of mentality is primarily to be conceived as a diversion of the flow of energy.

In these lectures I have not entered upon systematic metaphysical cosmology. The object of the lectures is to indicate those elements in our experience in terms of which such a cosmology should be constructed. The key notion from which such construction should start is that the [232]energetic activity considered in physics is the emotional intensity entertained in life.

Philosophy begins in wonder. And, at the end, when philosophic thought has done its best, the wonder remains. There have been added, however, some grasp of the immensity of things, some purification of emotion by understanding. Yet there is a danger in such reflections. An immediate good is apt to be thought of in the degenerate form of a passive enjoyment. Existence is activity ever merging into the future. The aim at philosophic understanding is the aim at piercing the blindness of activity in respect to its transcendent functions.

Alfred North Whitehead, "Nature Alive," Modes of Thought (1938) New York: Macmillan, 202-232-
