Six Lectures Delivered in Wellesley College, Massachusetts, and Two Lectures in the University of Chicago

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TO
MY CHILDREN
AND GRANDCHILDREN
The doctrine dominating these lectures is that factors in our experience are "clear and distinct" in proportion to their variability, provided that they sustain themselves for that moderate period required for importance. The necessities are invariable, and for that reason remain in the background of thought, dimly and vaguely. Thus philosophic truth is to be sought in the presuppositions of language rather than in its express statements. For this reason philosophy is akin to poetry, and both of them seek to express that ultimate good sense which we term civilization.

The first six chapters, namely Parts I and II, were delivered as lectures at Wellesley College, Massachusetts, during the session 1937–38, succeeding my retirement from Harvard. This fortunate opportunity has helped me to condense for publication those features of my Harvard lectures which are incompletely presented in my published works. The two lectures of Part III, entitled "Nature and Life," were delivered four years earlier at the University of Chicago, and have been published by the University of Chicago Press, and in England by the Cambridge Press. They were meant to form part of a book such as the present one, but
various circumstances have delayed the completion of the plan.

The Epilogue, "The Aim of Philosophy," is adapted from a short address at an annual reception, 1935, for graduate students of the Harvard and Radcliffe Philosophical Departments. It was reported in the Harvard Alumni Bulletin.

Alfred North Whitehead

April 25, 1938
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The first chapter in philosophic approach should consist in a free examination of some ultimate notions, as they occur naturally in daily life. I am referring to the generalities which are inherent in literature, in social organization, in the effort towards understanding physical occurrences.

There are no definitions of such notions. They are incapable of analysis in terms of factors more far-reaching than themselves. Each must be displayed as necessary to the various meanings of groups of notions, of equal depth with itself. In discussion of such a group any one of its members might, with slight adjustment of language, have been chosen as the central figure. In this lecture the notion of “Importance” has been taken as central, so that the discussion of a variety of topics comes back, time and again, to this idea.

In this whole set of lectures my aim is to examine some of those general characterizations of our experience which are presupposed in the directed activities of mankind. There will be no attempt to frame a systematic philosophy. Such a goal is too ambitious for a short course. All systematic thought must start from presuppositions. Also, as
mentioned above—the discussion will incidentally employ more basic notions than are expressed in its explicit aim. The verbal expositions of such data must be trimmed, and dressed, and put in order, during any process of systematization.

In all systematic thought, there is a tinge of pedantry. There is a putting aside of notions, of experiences, and of suggestions, with the prim excuse that of course we are not thinking of such things. System is important. It is necessary for the handling, for the utilization, and for the criticism of the thoughts which throng into our experience.

But before the work of systematization commences, there is a previous task—a very necessary task if we are to avoid the narrownesses inherent in all finite systems. Today, even Logic itself is struggling with the discovery embodied in a formal proof, that every finite set of premises must indicate notions which are excluded from its direct purview. Philosophy can exclude nothing. Thus it should never start from systematization. Its primary stage can be termed assemblage.

Such a process is, of course, unending. All that can be achieved is the emphasis on a few large-scale notions, together with attention to the variety of other ideas which arise in the display of those chosen for primary emphasis. Systematic philosophy is a subject of study for specialists. On the other hand, the philosophic process of assemblage should have received some attention from every educated mind, in its escape from its own specialism.

In Western literature there are four great thinkers, whose services to civilized thought rest largely upon their achievements in philosophical assemblage; though each of them made important contributions to the structure of philosophic system. These men are Plato, Aristotle, Leibniz, and William James.

Plato grasped the importance of mathematical system;
but his chief fame rests upon the wealth of profound suggestions scattered throughout his dialogues, suggestions half smothered by the archaic misconceptions of the age in which he lived. Aristotle systematized as he assembled. He inherited from Plato, imposing his own systematic structures.

Leibniz inherited two thousand years of thought. He really did inherit more of the varied thoughts of his predecessors than any man before or since. His interests ranged from mathematics to divinity, and from divinity to political philosophy, and from political philosophy to physical science. These interests were backed by profound learning. There is a book to be written, and its title should be, *The Mind of Leibniz*.

Finally, there is William James, essentially a modern man. His mind was adequately based upon the learning of the past. But the essence of his greatness was his marvellous sensitivity to the ideas of the present. He knew the world in which he lived, by travel, by personal relations with its leading men, by the variety of his own studies. He systematized; but above all he assembled. His intellectual life was one protest against the dismissal of experience in the interest of system. He had discovered intuitively the great truth with which modern logic is now wrestling.

This prefatory discussion has been concerned with the two aspects of philosophy. Systematization is the criticism of generality by methods derived from the specialization of science. It presupposes a closed group of primary ideas. In another aspect philosophy is the entertainment of notions of large, adequate generality. Such a habit of mind is the very essence of civilization. It is civilization. The hermit thrush and the nightingale can produce sound of the utmost beauty. But they are not civilized beings. They lack ideas of adequate generality respecting their own actions and the world around them. Without doubt the higher
animals entertain notions, hopes, and fears. And yet they lack civilization by reason of the deficient generality of their mental functionings. Their love, their devotion, their beauty of performance, rightly claim our love and our tenderness in return. Civilization is more than all these; and in moral worth it can be less than all these. Civilized beings are those who survey the world with some large generality of understanding.

2. There are two contrasted ideas which seem inevitably to underlie all width of experience, one of them is the notion of importance, the sense of importance, the presupposition of importance. The other is the notion of matter-of-fact. There is no escape from sheer matter-of-fact. It is the basis of importance; and importance is important because of the inescapable character of matter-of-fact. We concentrate by reason of a sense of importance. And when we concentrate, we attend to matter-of-fact. Those people who in a hard-headed way confine their attention to matter-of-fact do so by reason of their sense of the importance of such an attitude. The two notions are antithetical, and require each other.

One characteristic of the primary mode of conscious experience is its fusion of a large generality with an insistent particularity. There is a lack of precise analysis in the characterization of the particularities of experience. It is not true that the characterization of individual experience by qualitative notions commences with any detailed analysis of such quality. The basis of our primary consciousness of quality is a large generality. For example, characteristic modes of thought, as we first recall ourselves to civilized experience, are—"This is important," "That is difficult," "This is lovely."

In such ways of thinking there is an insistent particularity, symbolized above by the words this and that; and there is a large, vague characterization indicative of some
form of excitement arising from the particular fact in the world without. This vagueness is the despair of cultivated people. For the generality, when stated, is too obvious to be worth mentioning. And yet it is always there, just on the edge of consciousness. But good literature avoids the large philosophic generality which the quality exhibits. It fastens upon the accidental precision which inevitably clothes the qualitative generality. Literature is a curious mixture of tacitly presupposing analysis, and conversely of returning to emphasize explicitly the fundamental emotional importance of our naïve general intuitions.

Language is always relapsing into the generality of this intermediate stage between animal habit and learned precision. It is always degenerating into philosophic generality, under the guise of words capable of more precise use. Such a lapse is uneducated, because it expresses the obvious. And yet, it is philosophic; because the obvious embodies the permanent importance of variable detail. Literary people object to the vague use of words which are capable of precision.

For example, Coleridge, in his *Biographia Literaria*, objects to a party of tourists who gazed at a torrent and ejaculated “How pretty!” as a vague characterization of an awe-inspiring spectacle. Undoubtedly, in this instance, the degenerate phrase “How pretty!” lets down the whole vividness of the scene. And yet there is a real difficulty in the way of verbal expression. Words, in general, indicate useful particularities. How can they be employed to evoke a sense of that general character on which all importance depends? It is one function of great literature to evoke a vivid feeling of what lies beyond words.

3. Unfortunately for philosophy, learning tends to detail. Although in attempting to grasp our fundamental presuppositions, such as the contrast between “Importance” and “Matter-of-fact,” we must undoubtedly have recourse
to the learning which we inherit; yet in the development of intelligence there is a great principle which is often forgotten. In order to acquire learning, we must first shake ourselves free of it. We must grasp the topic in the rough, before we smooth it out and shape it. For example, the mentality of John Stuart Mill was limited by his peculiar education which gave him system before any enjoyment of the relevant experience. Thus his systems were closed. We must be systematic; but we should keep our systems open. In other words, we should be sensitive to their limitations. There is always a vague beyond, waiting for penetration in respect to its detail.

The general notions which underlie the detailed thoughts of the modern Western civilizations of Europe and America are largely derived from the expressions of fundamental ideas bequeathed to us by the ancient world of Greeks, Semites, and Egyptians. All three sources emphasize the matter-of-fact world around us. But their emphasis of importance, as we have inherited from them, differs. From the Greeks our inheritance has been primarily aesthetic and logical; from the Semites it has been moral and religious; from the Egyptians it has been practical. The Greeks bequeathed enjoyment, the Semites worship, the Egyptians practical observation.

But this inheritance from the civilizations of the eastern Mediterranean has its special forms. Our notion of importance as a general factor in the universe has been restricted to these forms. It is the first task of modern philosophy to conceive of importance and matter-of-fact in some disen-gagement from the mentalities of the ancient world.

Matter-of-fact is the notion of mere existence. But when we seek to grasp this notion, it distinguishes itself into the subordinate notions of various types of existence—for example, fanciful or actual existences, and many other types. Thus the notion of existence involves the notion of
an environment of existences and of types of existences. Any one instance of existence involves the notion of other existences, connected with it and yet beyond it. This notion of the environment introduces the notion of "more and less," and of multiplicity.

The notion of importance also refers to grades of importance and types of importance. Here again we reach the notion of more and less. Also something has to be important. There is no importance in a vacuum. Thus importance leads us back to matter-of-fact. But the multiplicity of matter-of-fact requires for a finite intellect selection in dealing with it. Now "selection" requires the notion of "this rather than that." Thus intellectual freedom issues from selection, and selection requires the notion of relative importance in order to give it meaning. Thus importance, selection, and intellectual freedom are bound up together, and they all involve some reference to matter-of-fact.

We have now been brought back to matter-of-fact. Let us again consider it for a while. The environment surpasses us in every physical dimension. Thus matter-of-fact is tinged with the notion of a compulsive determinism. The earth rotates; and we move with it, experiencing the routine of day and night as a prime necessity in our lives. The first Roman to mention the report of the midnight sun disbelieved it. He was an educated man well aware of the necessities of nature. In this way, the necessities of nature can be exaggerated. But all the same, in some sense or other they are there. In the same way, the freedom presupposed in the notion of selection is there, in some sense or other. Here we find an example of the value of a systematic philosophy. For we have either to explain the diverse senses in which freedom and necessity can coexist, or we have to explain away one or other of the most obvious presuppositions of our daily thoughts.
4. Let us set these two topics of matter-of-fact and of importance in another light.

The notion of mere matter-of-fact is the emergence into thought of the habit of mere existence to coördinate itself with the necessities of external activity. It is the recognition of the goings-on of nature in which we, and all things of all types, are immersed. It has its origin in the thought of ourselves as process immersed in process beyond ourselves. This grasp of factuality is one extreme of thought. Namely, it is the concept of mere agitation of things agitated.

This is the ideal of physical science, and it is the hidden ideal of those who insist upon the exclusive importance of objectivity.

The notion of importance is equally dominant in civilized thought. It can be inadequately defined as "Interest, involving that intensity of individual feeling which leads to publicity of expression." We are here trenching upon the topic of the next lecture. The definition is inadequate because there are two aspects to importance; one based on the unity of the Universe, the other on the individuality of the details. The word interest suggests the latter aspect; the word importance leans towards the former. In some sense or other interest always modifies expression. Thus, for the sake of reminding ourselves of this aspect of importance, the word interest will occasionally be used as a synonym. But importance is a fundamental notion not to be fully explained by any reference to a finite number of other factors.

As an explicit thought it is somewhat at odds with the concept of "Fact." A sound technological procedure is to analyse the facts in disregard of any subjective judgment as to their relative interest. And yet the notion of importance is like nature itself: Expel it with a pitchfork, and it ever returns. The most ardent upholders of objectivity in
scientific thought insist upon its importance. In truth, "to uphold a doctrine" is itself such an insistence. Apart from a feeling of interest, you would merely notice the doctrine and not uphold it. The zeal for truth presupposes interest. Also sustained observation presupposes the notion. For concentrated attention means disregard of irrelevancies; and such disregard can only be sustained by some sense of importance.

Thus the sense of importance (or interest) is embedded in the very being of animal experience. As it sinks in dominance, experience trivializes and verges towards nothingness.

5. The notion of a mere fact is the triumph of the abstractive intellect. It has entered into the explicit thought of no baby and of no animal. Babies and animals are concerned with their wants as projected against the general environment. That is to say, they are immersed in their interest respecting details embedded in externality. There is the merest trace of the abstraction of the detail. A single fact in isolation is the primary myth required for finite thought, that is to say, for thought unable to embrace totality.

This mythological character arises because there is no such fact. Connectedness is of the essence of all things of all types. It is of the essence of types, that they be connected. Abstraction from connectedness involves the omission of an essential factor in the fact considered. No fact is merely itself. The penetration of literature and art at their height arises from our dumb sense that we have passed beyond mythology; namely, beyond the myth of isolation.

It follows that in every consideration of a single fact there is the suppressed presupposition of the environmental coördination requisite for its existence. This environment, thus coördinated, is the whole universe in its perspective to the fact. But perspective is gradation of rele-
vance; that is to say, it is gradation of importance. Feeling is the agent which reduces the universe to its perspective for fact. Apart from gradations of feeling, the infinitude of detail produces an infinitude of effect in the constitution of each fact. And that is all that is to be said, when we omit feeling. But we feel differently about these effects and thus reduce them to a perspective. "To be negligible" means "to be negligible for some coördination of feeling." Thus perspective is the outcome of feeling; and feeling is graded by the sense of interest as to the variety of its differentiations.

In this way the finite intellect deals with the myth of finite facts. There can be no objection to this procedure, provided that we remember what we are doing. We are presupposing an environment which, in its totality, we are unable to define. For example, science is always wrong, so far as it neglects this limitation. The conjunction of premises, from which logic proceeds, presupposes that no difficulty will arise from the conjunction of the various unexpressed presuppositions involved in these premises. Both in science and in logic you have only to develop your argument sufficiently, and sooner or later you are bound to arrive at a contradiction, either internally within the argument, or externally in its reference to fact.

Judging from the history of European science, about three or four thousand years of continuous thought by a sufficient number of able people suffice to uncover some contradiction latent in any logical train of thought. As to physical science, the unguarded Newtonian doctrines survived for three hundred years. The span of life for modern scientific schemes is about thirty years. The father of European philosophy, in one of his many moods of thought, laid down the axiom that the deeper truths must be adumbrated by myths. Surely, the subsequent history of Western thought has amply justified his fleeting intuition.
It is to be noticed that none of these logical or scientific myths is wrong, in an unqualified sense of that term. It is unguarded. Its truth is limited by unexpressed presuppositions; and as time goes on we discover some of these limitations. The simpleminded use of the notions "right" or "wrong" is one of the chief obstacles to the progress of understanding.

6. Thus one characterization of importance is that it is that aspect of feeling whereby a perspective is imposed upon the universe of things felt. In our more self-conscious entertainment of the notion, we are aware of grading the effectiveness of things about us in proportion to their interest. In this way, we put aside, and we direct attention, and we perform necessary functions without bestowing the emphasis of conscious attention. The two notions of importance and of perspective are closely intertwined.

We may well ask whether the doctrine of perspective is not an endeavour to reduce the concept of importance to mere matter-of-fact devoid of intrinsic interest. Of course such reduction is impossible. But it is true to say that perspective is the dead abstraction of mere fact from the living importance of things felt. The concrete truth is the variation of interest; the abstraction is the universe in perspective; the consequent science is the scheme of physical laws which, with unexpressed presuppositions, expresses the patterns of perspective as observed by average human beings.

Importance is a generic notion which has been obscured by the overwhelming prominence of a few of its innumerable species. The terms *morality, logic, religion, art*, have each of them been claimed as exhausting the whole meaning of importance. Each of them denotes a subordinate species. But the genus stretches beyond any finite group of species. There are perspectives of the universe to which morality is irrelevant, to which logic is irrelevant, to which
religion is irrelevant, to which art is irrelevant. By this false limitation the activity expressing the ultimate aim infused into the process of nature has been trivialized into the guardianship of mores, or of rules of thought, or of mystic sentiment, or of aesthetic enjoyment. No one of these specializations exhausts the final unity of purpose in the world. The generic aim of process is the attainment of importance, in that species and to that extent which in that instance is possible.

Of course the word *importance*, as in common use, has been reduced to suggest a silly little pomposity which is the extreme of trivialization of its meaning here. This is a permanent difficulty of philosophic discussion; namely, that words must be stretched beyond their common meanings in the marketplace. But notwithstanding this difficulty, philosophy must found itself upon the presuppositions and the interpretations of ordinary life. In our first approach to philosophy, learning should be banished. We should appeal to the simple-minded notions issuing from ordinary civilized social relations.

I will illustrate this doctrine by an anecdote of an incident which illustrated to me the possible irrelevance of moral considerations. About eleven years ago, a young friend of mine reached her tenth birthday. I will not guarantee the precise accuracy of these figures. Anyhow the young woman is now twenty-one and our friendship is still flourishing. The child's great-aunt celebrated the day by taking her to an afternoon performance of the opera Carmen, rendered in English. Also, she was allowed to select two companions for the treat. She chose another little girl and—I am proud to say—myself. As we came out of the opera house after the performance, she looked up at her aunt and said—"Auntie, do you think that those were *really good* people?" Both the aunt and I sidestepped the question by looking for the car which was to take us home.
The point that I now wish to make is that our enjoyment in the theatre was irrelevant to moral considerations applied to the performance. Of course smugglers are naughty people, and Carmen is carefree as to niceties of behaviour. But while they are singing their parts and dancing on the stage, morals vanish and beauty remains.

I am not saying that moral considerations are always irrelevant to the stage. In fact, sometimes they are the very topic of the play, especially of modern plays. But the retreat of morals in the presence of music, and of dancing, and the general gaiety of the theatre, is a fact very interesting to philosophers and very puzzling to the official censors.

7. The point is that moral codes are relevant to presuppositions respecting the systematic character of the relevant universe. When the presuppositions do not apply, that special code is a vacuous statement of abstract irrelevancies. We evade this difficulty as to codes by retaining their language with alterations of meaning introduced by the social changes within centuries and millennia. Also the inevitable imperfections of translation help in effecting the evasion. The translation has always to make sense in the epoch of the translators. The notion of the unqualified stability of particular laws of nature and of particular moral codes is a primary illusion which has vitiated much philosophy.

For example, consider the application of our moral notions concerning family relations to beings such as fish, who produce hundreds, nay thousands, of eggs in one year.

This conclusion as to moral codes must not be extended to involve the negation of any meaning to the term morality. In the same way, the notion of legality of behaviour within a state evades the possibility of complete codification. The legal profession can never be superseded by automata.

Morality consists in the control of process so as to
maximize importance. It is the aim at greatness of experience in the various dimensions belonging to it. This notion of the dimensions of experience, and of its importance in each dimension and of its final unity of importance, is difficult and hard to understand.

But only so far as we can adumbrate it, do we grasp the notion of morality. Morality is always the aim at that union of harmony, intensity, and vividness which involves the perfection of importance for that occasion. The codifications carry us beyond our own direct immediate insights. They involve the usual judgments valid for the usual occasions in that epoch. They are useful, and indeed essential, for civilization. But we only weaken their influence by exaggerating their status.

For example, consider the Ten Commandments. Can we really hold that a rest day once in seven days, as distinct from once in six or eight days, is an ultimate moral law of the universe? Can we really think that no work whatever can be done on Sundays? Can we really think that the division of time into days is an absolute factor in the nature of all existence? Evidently, the commandments are to be construed with common sense. In other words, they are formulations of behaviours which in ordinary circumstances, apart from very special reasons, it is better to adopt.

There is no one behaviour system belonging to the essential character of the universe, as the universal moral ideal. What is universal is the spirit which should permeate any behaviour system in the circumstances of its adoption. Thus morality does not indicate what you are to do in mythological abstractions. It does concern the general ideal which should be the justification for any particular objective. The destruction of a man, or of an insect, or of a tree, or of the Parthenon, may be moral or immoral. The Ten Commandments tell us that in the vast majority of cases such slaughter is better avoided. In these exceptional
instances we avoid the term murder. Whether we destroy, or whether we preserve, our action is moral if we have thereby safeguarded the importance of experience so far as it depends on that concrete instance in the world's history.

8. Great advances in thought are often the result of fortunate errors. These errors are the result of oversimplification. The advance is due to the fact that, for the moment, the excess is not relevant to the use of the simplified notions. One of the chief examples of this truth is Aristotle's analysis into genus, and species, and sub-species. It was one of the happiest ideas possible, and it has clarified thinking ever since. Plato's doctrine of "division" was an anticipation, vague and hazy. He felt its value. It did not do much good, by reason of its lack of decisive clarity. Among sensible people, Aristotle's mode of analysis has been an essential feature in intellectual progress for two thousand years.

Of course, Plato was right and Aristotle was wrong. There is no clear division among genera; there is no clear division among species; there are no clear divisions anywhere. That is to say, there are no clear divisions when you push your observations beyond the presuppositions on which they rest. It so happens, however, that we always think within limitations.

As a practical question, Aristotle was right and Plato was muddled. But, what neither Aristotle nor Plato adequately conceived was the necessity for investigation of the peculiar characterization of that sense of importance which is current in the thought of each age. All classification depends on the current character of importance.

We have now behind us some detailed history of three or four thousand years of civilization. The Greeks (as Thucydides discloses) were ignorant of history, except for that of two or three almost contemporaneous generations.
The Egyptians and the Jews worshipped a long history, uncritically. The Greeks would have criticized history, if they had known anything about it; the Jews would have criticized history, if they had not worshipped its records; the Egyptians would have criticized history, if they had not been sensible men who confined themselves to “pure history.” By the same exercise of good sense, the Egyptians failed to generalize their geometrical knowledge, and thus lost their chance to become the founders of modern civilization. An excess of common sense has its disadvantages. The Greeks, with their airy generalizations, were always children—very fortunately for the modern world. Panic of error is the death of progress; and love of truth is its safeguard.

9. For these reasons, the criticism of history has been left for development by the modern world of the last four centuries. Of course there is no sudden beginning. Anticipations of such criticism can always be found in the older literature. Yet it remains true that modern thought is remarkable for its concentration of attention upon history. This criticism has itself passed through phases.

The first emphasis was upon the authenticity of the record. Such questions as, Did Plato write this dialogue?, Did the Emperor Constantine make this donation?, were the primary topics. This phase of correction passed to details. It was then called “emendation.” Is this manuscript of the Aeneid a correct version of what Virgil wrote? This is a fairly definite question. But the relation of Homer to the Iliad is vaguer. Perhaps Homer and his comrades could not write. Even if they could write, they were very unlikely to have written down the Iliad. Papyrus was scarce, and it was easier to remember it. Thus the poem was handed down through generations of groups of bards with a sublime indifference to minor variations. Later we have rec-
ords of formal revisions of the text. Analogous vagueness applies to the concepts of all social transactions. Thus the notion of accurate record has its limitations.

History has now passed into another phase. It is displaying transitions of behaviour. The Western historian is depicting types of activity, types of mood, and types of formulated belief, exhibited in the adventures of the European races as they overran first Europe, then America, and the fringes of other continents and islands. This change in emphasis showed itself decidedly in the eighteenth century.

For example, Bentley, the typical scholarly critic, died in 1742; and Gibbon, who traced the decline and fall of a political system, and the variations of motive animating its activity, was born in 1737. Gibbon corrected no editions of authors, and Bentley depicted no transitions of behaviour. In Europe, the change may be symbolized by Mabillon, who died in 1707, and Voltaire, who was born in 1694. Of course historical phases overlap each other. I am speaking of predominant interest. In the earlier period, even the discursive humanist, Erasmus, issued accurate editions; in the nineteenth century historical narrative was more prominent than devotion to editorial accuracy. Of course there were reasons for the change, and all the types of historic scholarship co-exist.

Under the influence of physical science, the task of history has more recently been limited to the narration of mere sequences. This ideal of knowledge is the triumph of matter-of-fact. Such suggestion of causation, as is admitted, is confined to the statements of physical materialities, such as the economic motive.

Such history confines itself to abstract mythology. The variety of motives is excluded. You cannot write the history of religious development without estimate of the motive-
power of religious belief. The history of the Papacy is not a mere sequence of behaviours. It illustrates a mode of causation, which is derived from a mode of thought.

Thus the study of history as mere sequence wears itself out. It is a make-belief. There are oceans of facts. We seek that thread of coordination derived from the special forms of importance prevalent in the respective epochs. Apart from such interests, intrinsic within each period, there would be no language, no art, no heroism, no devotion. Ideals lie beyond matter-of-fact, and yet provide the colour of its development.

10. Matter-of-fact is an abstraction, arrived at by confining thought to purely formal relations which then masquerade as the final reality. This is why science, in its perfection, relapses into the study of differential equations. The concrete world has slipped through the meshes of the scientific net.

Consider, for example, the scientific notion of measurement. Can we elucidate the turmoil of Europe by weighing its dictators, its prime ministers, and its editors of newspapers? The idea is absurd, although some relevant information might be obtained. I am not upholding the irrelevance of science. Such a doctrine would be foolish. For example, a daily record of the bodily temperatures of the men, above mentioned, might be useful. My point is the incompleteness of the information.

Each social system is realizing a variety of modes of interest, some of them dominant, and some in the background. The eighteenth century was not merely the age of reason, nor was the sixteenth century merely the age of religious excitement. For example, to study the Reformation turmoil without reference to America, and to India, and to the Turks, and to the rise of nationalism, and to the recent diffusion of printing, is ridiculous. The relevance of these factors consists in their modifications of
prevalent modes of importance, which interfused with the religious interest.

The chequered history of religion and morality is the main reason for the widespread desire to put them aside in favour of the more stable generalities of science. Unfortunately for this smug endeavour to view the universe as the incarnation of the commonplace, the impact of aesthetic, religious and moral notions is inescapable. They are the disrupting and the energizing forces of civilization. They force mankind upwards and downwards. When their vigour abates, a slow mild decay ensues. Then new ideals arise, bringing in their train a rise in the energy of social behaviour.

The concentration of attention upon matter-of-fact is the supremacy of the desert. Any approach to such triumph bestows on learning a fugitive, and a cloistered virtue, which shuns emphasis on essential connections such as disclose the universe in its impact upon individual experience.
This lecture is concerned with various ideas involved in the notion of "Expression." The more general notion of importance is presupposed by expression. Something is to be diffused throughout the environment which will make a difference. But there is a distinction between the two notions. Importance is primarily monistic in its reference to the universe. Importance, limited to a finite individual occasion, ceases to be important. In some sense or other, importance is derived from the immanence of infinitude in the finite.

But expression is founded on the finite occasion. It is the activity of finitude impressing itself on its environment. Thus it has its origin in the finite; and it represents the immanence of the finite in the multitude of its fellows beyond itself. The two together, namely importance and expression, are witnesses both to the monistic aspect of the universe and to its pluralistic character. Importance passes from the world as one to the world as many; whereas, expression is the gift from the world as many to the world as one.
Selection belongs to expression. A mood of the finite thing conditions the environment. There is an active entity which fashions its own perspective, implanted on the world around. The laws of nature are large average effects which reign impersonally. Whereas, there is nothing average about expression. It is essentially individual. In so far as an average dominates, expression fades.

Expression is the diffusion, in the environment, of something initially entertained in the experience of the expressor. No conscious determination is necessarily involved; only the impulse to diffuse. This urge is one of the simplest characteristics of animal nature. It is the most fundamental evidence of our presupposition of the world without.

In fact, the world beyond is so intimately entwined in our own natures that unconsciously we identify our more vivid perspectives of it with ourselves. For example, our bodies lie beyond our own individual existence. And yet they are part of it. We think of ourselves as so intimately entwined in bodily life that a man is a complex unity—body and mind. But the body is part of the external world, continuous with it. In fact, it is just as much part of nature as anything else there—a river, or a mountain, or a cloud. Also, if we are fussily exact, we cannot define where a body begins and where external nature ends.

Consider one definite molecule. It is part of nature. It has moved about for millions of years. Perhaps it started from a distant nebula. It enters the body; it may be as a factor in some edible vegetable; or it passes into the lungs as part of the air. At what exact point as it enters the mouth, or as it is absorbed through the skin, is it part of the body? At what exact moment, later on, does it cease to be part of the body? Exactness is out of the question. It can only be obtained by some trivial convention.
Thus we arrive at this definition of our bodies: The human body is that region of the world which is the primary field of human expression.

For example, anger issues into bodily excitements, which are then publicized in the form of appropriate language, or in other modes of violent action. We can leave it to the physiologists, in the various departments of that science, to analyse the special sorts of bodily functioning thus elicited. Philosophy should refrain from trespassing upon specialist investigations. Its business is to point out fields for research. Some fields remain untilled for centuries. The fruitful initiation is absent, or perhaps interest has never concentrated upon them.

In the present instance, we have defined an animal body—for the higher grade of animals—and have indicated the sort of researches required. Of course, mankind has been engaged on this job for some thousands of years, with some lack of comprehension of its full import. It is the business of philosophy to elicit this consciousness; and then, to coördinate the results of all such specialist enquiries.

So far, we have been considering the bodies of animals with dominant centres of feeling and of expression. We can now enlarge the definition so as to include all living bodies, animal and vegetable:—

Wherever there is a region of nature which is itself the primary field of the expressions issuing from each of its parts, that region is alive.

In this second definition, the phrase “expressions issuing from each of its parts” has been substituted for the phrase “human expression,” as used previously. The new definition is wider than the former by extending beyond human beings, and beyond the higher animals. Also it will be noticed that these definitions involve the direct negation
of any extreme form of Behaviourism. In such behaviouristic doctrines, importance and expression must be banished and can never be intelligently employed. A consistent behaviourist cannot feel it important to refute my statements. He can only behave.

There are two sides to an animal body of the higher type, and so far we have only developed one of them. The second, and wider, definition enables us to find the distinction between vegetation and animal life. This distinction, like others, refuses to be pushed to meticulous exactness. In the animal, there is the one experience expressing itself throughout the animal body. But this is only half the tale.

The other half of the tale is that the body is composed of various centres of experience imposing the expression of themselves on each other. Feeling (in the sense here used), or prehension, is the reception of expressions. Thus the animal body is composed of entities, which are mutually expressing and feeling. Expressions are the data for feeling diffused in the environment; and a living body is a peculiarly close adjustment of these two sides of experience, namely, expression and feeling. By reason of this organization, an adjusted variety of feelings is produced in that supreme entity which is the one animal considered as one experiencing subject.

Thus the one animal, and the various parts of its body considered as themselves centres of experience, are in one sense on a level. Namely, they are centres of experience expressing themselves vividly to each other, and obtaining their own feelings mainly by reason of such mutual expressions.

In another sense, the animal as one centre of experience is on a higher level than its other bodily centres. For these subordinate centres are specialists. They only receive re-
stricted types of emotional feeling, and are impervious beyond such types. Throughout the body there is a complex coördination of a vast variety of emotional types. The bodily organization is such that the unity of feeling, which is the one animal as a sentient being, receives its complex variety of experience from these bodily activities. Thus the combined data for feeling in the animal centre are on a higher level than are the corresponding data for its other bodily centres.

In the case of vegetables, we find bodily organizations which decisively lack any one centre of experience with a higher complexity either of expressions received or of inborn data. A vegetable is a democracy; an animal is dominated by one, or more centres of experience. But such domination is limited, very strictly limited. The expressions of the central leader are relevant to that leader's reception of data from the body.

Thus an animal body exhibits the limited domination of at least one of its component activities of expression. If the dominant activity be severed from the rest of the body, the whole coördination collapses, and the animal dies. Whereas in the case of the vegetable, the democracy can be subdivided into minor democracies which easily survive without much apparent loss of functional expression.

It is evident that our statement is oversimplified. In the first place, the distinction between animals and vegetables is not sharp cut. Some traces of dominance can be observed in vegetables, and some traces of democratic independence can be found in animals. For example, portions of an animal body preserve their living activities when severed from the main body. But there is failure in variety of energy and in survival power. Yet allowing for such failure, the vegetable characteristics of equality and independence do manifest themselves. Thus ordinary vegeta-
tion and the higher animals represent extremes in the bewildering variety of bodily formations which we term living things.

Then we have neglected the differentiation of functions which are to be found alike in vegetables and animals. In the case of the flora, there are the roots, and the branches, and the leaves, and the flowers, and the seeds—all obvious to common inspection. And the detailed observations of botanists supplement these blatant examples of differentiation by a hundred other functional activities which constitute the physiology of plant life.

When we turn to the animal body, the notion of the sole domination of the directing experience requires limitation. There are subordinate agencies which have essential control of the bodily functioning. The heart is one example among many others. The activities of the heart are necessary to the bodily survival, in a way that contrasts with the feet. A foot can be severed with slight damage to the internal functioning; the heart is essential. Thus an animal body in its highest examples is more analogous to a feudal society, with its one overlord.

This final unity of animal intelligence is also the organ of reaction to novel situations, and is the organ introducing the requisite novelty of reaction. Finally, the overlord tends to relapse into the conventionality of routine imposed upon the subordinate governors, such as the heart. Animal life can face conventional novelties with conventional devices. But the governing principle lacks large power for the sudden introduction of any major novelty.

The bodies of the higher animals have some resemblance to a complex society of insects, such as ants. But the individual insects seem to have more power of adaptation to their problems than does the community as a whole. The opposite holds in the case of animals. For example,
an intelligent dog has more power of adaptation to new modes of life than has its heart, as it functions in the animal body. The dog can be trained, but its heart must go its own way within very close limits.

When we come to mankind, nature seems to have burst through another of its boundaries. The central activity of enjoyment and expression has assumed a reversal in the importance of its diverse functionings. The conceptual entertainment of unrealized possibility becomes a major factor in human mentality. In this way outrageous novelty is introduced, sometimes beatified, sometimes damned, and sometimes literally patented or protected by copyright. The definition of mankind is that in this genus of animals the central activity has been developed on the side of its relationship to novelty. This relationship is twofold. There is the novelty received from the aggregate diversities of bodily expressions. Such novelty requires decision as to its reduction to coherence of expression.

Again there is the introduction of novelty of feeling by the entertainment of unexpressed possibilities. This second side is the enlargement of the conceptual experience of mankind. The characterization of this conceptual feeling is the sense of what might be and of what might have been. It is the entertainment of the alternative. In its highest development, this becomes the entertainment of the ideal. It emphasizes the sense of importance, discussed in the previous lecture. And this sense exhibits itself in various species, such as, the sense of morality, the mystic sense of religion, the sense of that delicacy of adjustment which is beauty, the sense of necessity for mutual connection which is understanding, and the sense of discrimination of each factor which is consciousness.

Also it is the nature of feeling to pass into expression. Thus the expression of these various feelings produces the
history of mankind as distinct from the narrative of animal behaviours. History is the record of the expressions of feelings peculiar to humanity.

There is, however, every gradation of transition between animals and men. In animals we can see emotional feeling, dominantly derived from bodily functions, and yet tinged with purposes, hopes, and expression derived from conceptual functioning. In mankind, the dominant dependence on bodily functioning seems still there. And yet the life of a human being receives its worth, its importance, from the way in which unrealized ideals shape its purposes and tinge its actions. The distinction between men and animals is in one sense only a difference in degree. But the extent of the degree makes all the difference. The Rubicon has been crossed.

Thus in nature we find four types of aggregations of actualities: the lowest is the nonliving aggregation, in which mutual influence is predominantly of a formal character expressible in formal sciences, such as mathematics. The inorganic is dominated by the average. It lacks individual expression in its parts. Their flashes of selection (if any) are sporadic and ineffective. Its parts merely transmit average expressions; and thus the structure survives. For the average is always there, stifling individuality.

The vegetable grade exhibits a democracy of purposeful influences issuing from its parts. The predominant aim within the organism is survival for its own coördinated individual expressiveness. This expressiveness has a large average character. But the nature of this average is dominated by the intricacies of its own bodily formation. It has added coördinated, organic individuality to the impersonal average formality of inorganic nature. What is merely latent potentiality in lifeless matter, has awakened into some realization in the vegetable. But in each instance of
vegetation, the total bodily organism strictly limits the individuality of expression in the parts.

The animal grade includes at least one central actuality, supported by the intricacy of bodily functioning. Purposes transcending (however faintly) the mere aim at survival are exhibited. For animal life the concept of importance, in some of its many differentiations, has a real relevance. The human grade of animal life immensely extends this concept, and thereby introduces novelty of functioning as essential for varieties of importance. Thus morals and religion arise as aspects of this human impetus towards the best in each occasion. Morals can be discerned in the higher animals; but not religion. Morality emphasizes the detailed occasion; while religion emphasizes the unity of ideal inherent in the universe.

In every grade of social aggregation, from a nonliving material society up to a human body, there is the necessity for expression. It is by reason of average expression, and of average reception, that the average activities of merely material bodies are restrained into conformity with the reigning laws of nature. It is by reason of individual expression and reception that the human body exhibits activities expressive of the intimate feelings, emotional and purposeful, of the one human person.

3. These bodily activities are very various and intensely selective. An angry man, except when emotion has swamped other feelings, does not usually shake his fist at the universe in general. He makes a selection and knocks his neighbour down. Whereas a piece of rock impartially attracts the universe according to the law of gravitation.

The impartiality of physical science is the reason for its failure as the sole interpreter of animal behaviour. It is true that the rock falls on one special patch of earth. This happens, because the universe in that neighbourhood is
exemplifying one particular solution of a differential equation. The fist of the man is directed by emotion seeking a novel feature in the universe, namely, the collapse of his opponent. In the case of the rock, the formalities predominate. In the case of the man, explanation must seek the individual satisfactions. These enjoyments are constrained by formalities, but in proportion to their intensities they pass beyond them, and introduce individual expression.

Consciousness is the first example of the selectiveness of enjoyment in the higher animals. It arises from expression coördinating the activities of physiological functionings. There is a baseless notion that we consciously observe those activities of nature which are dominant in our neighbourhood. The exact opposite is the case. The animal consciousness does not easily discriminate its dependence on detailed bodily functioning. Such discrimination is usually a sign of illness. When we observe the functionings of our viscera, something has gone wrong. We take the infinite complexity of our bodies for granted.

The first principle of epistemology should be that the changeable, shifting aspects of our relations to nature are the primary topics for conscious observation. This is only common sense; for something can be done about them. The organic permanences survive by their own momentum: our hearts beat, our lungs absorb air, our blood circulates, our stomachs digest. It requires advanced thought to fix attention on such fundamental operations.

The higher animals have developed superficial relationships to nature, such as eyesight, hearing, smell, and taste. Also such connections are alterable in proportion to their high-grade character. For example, we have only got to shut our eyes, and visual experience has vanished. We can block our ears, and there is no hearing.

The experiences on which accurate science bases itself
are completely superficial. The blind and the deaf are capable of the ultimate greatness of human life. They are deprived of its walking sticks. The traffic lights on the highways are useful for the accomplishment of modern purposes. And yet there have been great civilizations without motor cars, and without traffic lights.

But though any one of these sense experiences is non-essential to the existence of the organism, the whole group is quite essential for the development of the higher forms of animal life. Mankind and the animals with analogous abilities are distinguished by their capacity for the introduction of novelty. This requires a conceptual power which can imagine, and a practical power which can effect. The role of sense experiences consists in the fact that they are manageable.

The animals evolved and emphasized the superficial aspects of their connexity with nature, and thus obtained a manageable grip upon the world. The central organism which is the soul of a man is mainly concerned with the trivialities of human existence. It does not easily meditate upon the activities of fundamental bodily functions. Instead of fixing attention on the bodily digestion of vegetable food, it catches the gleam of the sunlight as it falls on the foliage. It nurtures poetry. Men are the children of the Universe, with foolish enterprises and irrational hopes. A tree sticks to its business of mere survival; and so does an oyster with some minor divergencies. In this way, the life aim at survival is modified into the human aim at survival for diversified worthwhile experience.

The pitfall of philosophy is exclusive concentration on these manageable relationships, to the neglect of the underlying necessities of nature. Thus thinkers repudiate our intimate vague experiences in favour of a mere play of distinct sensations, coupled with a fable about underlying
reality. I am now pleading that our whole experience is composed out of our relationships to the rest of things, and of the formation of new relationships constitutive of things to come. The present receives the past and builds the future. But there are grades of permanence and of compulsive stability.

During many generations there has been an attempt to explain our ultimate insights as merely interpretive of sense impressions. Indeed this school of thought can trace itself back to Epicurus. It can appeal to some phrases of Plato. I suggest to you that this basis for philosophic understanding is analogous to an endeavour to elucidate the sociology of modern civilization as wholly derivative from the traffic signals on the main roads. The motions of the cars are conditioned by these signals. But the signals are not the reasons for the traffic. Common sense supplies this conclusion, so overwhelmingly that illustration is unnecessary.

It is this direct insight, vague as to detail and yet the basis of all rationality, that has been denied by the prevalent epistemology of the preceding century. Interest and importance are the primary reasons for the effort after exact discrimination of sense data. The traffic signals are the outcome of the traffic.

Importance generates interest. Interest leads to discrimination. In this way, interest is increased; and the two factors, interest and discrimination, stimulate each other. Finally consciousness develops, gradually and fitfully; and it becomes another agent of stimulation.

4. In this lecture, the dominant topic is expression. Accordingly, we now pass to the outstanding example of the way in which mankind has fabricated its manageable connections with the world into a means of expression. Language is the triumph of human ingenuity, surpassing even
the intricacies of modern technology. It tells of widespread intelligence, sustained throughout scores of thousands of years. It is interesting that from the alternatives, sight and sound, sound was the medium first developed. There might have been a language of gesticulation. Indeed, there is a trace of it. But the weak point of gesticulation is that one cannot do much else while indulging in it. The advantage of sound is that the limbs are left free while we produce it.

But there is a deeper reason for the unconscious recourse to sound production. Hands and arms constitute the more unnecessary parts of the body. We can do without them. They do not excite the intimacies of bodily existence. Whereas in the production of sound, the lungs and throat are brought into play. So that in speech, while a superficial, manageable expression is diffused, yet the sense of the vague intimacies of organic existence is also excited. Thus voice-produced sound is a natural symbol for the deep experiences of organic existence.

This sense of reality is of great importance for the effectiveness of symbolism. Personal interviews carry more weight than gramophone records. What an economy could be achieved if the faculties of colleges could be replaced by fifty gramophones and a few thousand records! Indeed, we might have expected that in the sixteenth century printed books would have replaced universities. On the contrary, the sixteenth and seventeenth centuries were an active period in the development of educational foundations. The sense of reality can never be adequately sustained amidst mere sensa, either of sound or sight. The connexity of existence is of the essence of understanding.

Language has two functions. It is converse with another, and it is converse with oneself. The latter function
is too often overlooked, so we will consider it first. Language is expression from one's past into one's present. It is the reproduction in the present of sensa which have intimate association with the realities of the past. Thus the experience of the past is rendered distinct in the present, with a distinctness borrowed from the well-defined sensa. In this way, an articulated memory is the gift of language, considered as an expression from oneself in the past to oneself in the present.

Again by the aid of a common language, the fragmentary past experiences of the auditor, as enshrined in words, can be recombined into a novel imaginative experience by the reception of the coherent sentences of the speaker. Thus in both functions of language the immediate imaginative experience is enormously increased, and is stamped with a sense of realization, or of possible realization.

When we examine the content of language, that is to say, the experiences which it symbolizes, it is remarkable how largely it points away from the abstractions of high-grade sensa. Its meaning presupposes the concrete relations of real events happening and issuing from each other. What Descartes, in his Meditations, terms a "Realitas Objectiva" clings to most sentences, especially to those recording the simpler experiences.

Consider, for example, the homely illustration, used earlier in this lecture, of the angry man who knocks his neighbour down. We each of us frame a pictorial imagination of such a scene. But the flux of imagined sensa is not of the essence of our thought. The event may have generated sensory schemes in a thousand ways. It may have happened by day, or by night. It may have happened in the street, or in a room. Every variety of attitudes for victor and for vanquished is indifferent. Yet amid all this ambiguity of sensa, the stubborn flux of events is asserted, that
the fist of the angry man completely upset the stable functioning of his victim's body. It is not a flux of sensa which is asserted, but a bodily collapse as the result of the expressiveness of the angry man.

Also the anger of the man undoubtedly affected the functioning of his own body. A careful physiological examination with a microscope could have yielded many visual sensa to an observer! Again, consider the variety of sensory pictures which are aroused by the notion of one man knocking another down. What is it that binds them together? In themselves, they are merely different compositions of visual sensa. Their unity consists in the type of connected process in the world that they suggest.

Deserting this special example, different sensory experiences derived from the same action have a unity, namely, in the identity of the action. The accounts may be in different languages and may fasten upon different transitions of visual or auditory sensa; and yet they refer to the same action. Also the action may not be purely physical. Heroism, and courage, and love, and hatred are possible characteristics of things that happen.

The essence of language is that it utilizes those elements in experience most easily abstracted for conscious entertainment, and most easily reproduced in experience. By the long usage of humanity, these elements are associated with their meanings which embrace a large variety of human experiences. Each language embalms an historic tradition. Each language is the civilization of expression in the social systems which use it. Language is the systematization of expression.

Of all the ways of expressing thought, beyond question language is the most important. It has been held even that language is thought, and that thought is language. Thus a sentence is the thought. There are many learned works in
which this doctrine is tacitly presupposed; and in not a few it is explicitly stated.

If this extreme doctrine of language be adopted, it is difficult to understand how translation from language to language, or within the same language between alternative sentences, is possible. If the sentence is the thought, then another sentence is another thought. It is true that no translation is perfect. But how can the success of imperfection be achieved when not a word, or a syllable, or an order of succession is the same? If you appeal to grammar, you are appealing to a meaning which lies behind words, syllables, and orders of succession. Some of us struggle to find words to express our ideas. If the words and their order together constitute the ideas, how does the struggle arise? We should then be struggling to obtain ideas; whereas we are conscious of ideas verbally unexpressed.

Let it be admitted then that language is not the essence of thought. But this conclusion must be carefully limited. Apart from language, the retention of thought, the easy recall of thought, the interweaving of thought into higher complexity, the communication of thought, are all gravely limited. Human civilization is an outgrowth of language, and language is the product of advancing civilization. Freedom of thought is made possible by language: we are thereby released from complete bondage to the immediacies of mood and circumstance. It is no accident that the Athenians from whom we derive our Western notions of freedom enjoyed the use of a language supreme for its delicate variety.

The denial that language is of the essence of thought, is not the assertion that thought is possible apart from the other activities coördinated with it. Such activities may be termed the expression of thought. When these activities
satisfy certain conditions, they are termed a language. The whole topic of these lectures is the discussion of the interdependence of thought and its expressive activities.

Such activities, emotional and physical, are older than thought. They existed in our ancestors when thought slumbered in embryo. Thought is the outcome of its own concurrent activities; and having thus arrived upon the scene, it modifies and adapts them. The notion of pure thought in abstraction from all expression is a figment of the learned world. A thought is a tremendous mode of excitement. Like a stone thrown into a pond it disturbs the whole surface of our being. But this image is inadequate. For we should conceive the ripples as effective in the creation of the plunge of the stone into the water. The ripples release the thought, and the thought augments and distorts the ripples. In order to understand the essence of thought we must study its relation to the ripples amid which it emerges.

5. Nevertheless, putting aside these refinements as to the origins and effects of thought, language, as commonly understood in the most simple-minded way, stands out as the habitual effect of thought, and the habitual revelation of thought. In order to understand the modes of thought we must endeavour to recall the psychology which has produced the civilization of language—or, if you prefer to invert the expression, the language of civilization.

The first point to notice is that we now employ two distinct types of language, namely, the language of sound and the language of sight. There is speech, and there is writing. The language of writing is very modern. Its history extends for less than ten thousand years, even if we allow for the faint anticipations of writing in the primitive pictures. But writing as an effective instrument of thought, with wide-
spread influence, may be given about five or six thousand years at the most.

Writing as a factor in human experience is comparable to the steam engine. It is important, modern, and artificial. Speech is as old as human nature itself. It is one of the primary factors constituting human nature. We must not exaggerate. It is now possible to elicit the full stretch of human experience by other devices when speech in exceptional instances is denied. But speech, developing as a general social acquirement, was one leading creative factor in the uprise of humanity. Speech is human nature itself, with none of the artificiality of written language.

Finally, we now so habitually intermingle writing and speech in our daily experience that, when we discuss language, we hardly know whether we refer to speech, or to writing, or to the mixture of both. But this final mixture is very modern. About five hundred years ago, only a small minority could read—at least among the European races. That is one great reason for the symbolism of religion, and for the pictorial signs of inns and of shops. The armorial bearings of great nobles were a substitute for writing. The effect of writing on the psychology of language is a neglected chapter in the history of civilization.

Speech, in its embryonic stage as exemplified in animal and human behaviour, varies between emotional expression and signalling. In the course of such variation it rapidly becomes a mixture of both. Throughout its most elaborate developments, speech retains these three characteristics, namely, emotional expression, signalling, and interfusion of the two. And yet somehow in the intellectualized language of advanced civilizations, these characteristics seem to fade into the background. They suggest something which has lost its dominating position. We cannot understand modes of thought in the recent civilizations
of the last thirty centuries unless we attend to this subtle change in the function of language. The presuppositions of language are various.

Language arose with a dominating reference to an immediate situation. Whether it was signal or expression, above all things it was this reaction to that situation in this environment. In the origin of language the particularity of the immediate present was an outstanding element in the meaning conveyed. The genus bird remained in the background of undiscerned meaning; even these particular birds on some other occasion were but dimly sensed. What language primarily conveyed was the direction of attention to these birds, here, now, amid these surroundings.

Language has gradually achieved the abstraction of its meanings from the presupposition of any particular environment. The fact that the French dictionary is published in Paris, at a definite date, is irrelevant to the meanings of the words as explained in the dictionary. The French equivalent to the English word green, means just green, whatever be the state of Europe, or of the planetary system. Green is green, and there is the end of it. There is nothing more to be said, when you once understand the word in reference to its meaning.

Of course, we are much more civilized than our ancestors who could merely think of green in reference to some particular spring morning. There can be no doubt about our increased powers of thought, of analysis, of recollection, and of conjecture. We cannot congratulate ourselves too warmly on the fact that we are born among people who can talk about green in abstraction from springtime. But at this point we must remember the warning—Nothing too much.

So long as language is predominantly speech, the reference to some particularity of environment is overwhelm-
ing. Consider the simple phrase "a warm day." In a book, as interpreted by a standard dictionary, the words have a generalised meaning which refers to the rotation of the earth, the existence of the sun, and the scientific doctrine of temperature. Now put aside the dictionary, and forget all scraps of science. Then, with this abstraction from learning, the experience indicated by the ejaculation "a warm day" is very different for speakers in Texas, or on the coast of England bordering the North Sea. And yet there is an identity of meaning. Nothing too much.

We have to understand language as conveying the identities on which knowledge is based, and as presupposing the particularity of reference to the environment which is the essence of existence. Spoken language is immersed in the immediacy of social intercourse. Written language lies hidden in a volume, to be opened and read at diverse times and in diverse places, in abstraction from insistent surroundings. But a book can be read aloud. Here we find an instance of the fusion of writing and speech. Reading aloud is an art, and the reader makes a great difference. The immediacy of the environment then enters into the abstraction of writing.

The abstraction, inherent in the development of language, has its dangers. It leads away from the realities of the immediate world. Apart from a balanced emphasis, it ends in the triviality of quick-witted people. And yet, for all its dangers, this abstraction is responsible for the final uprise of civilization. It gives expression to the conceptual experiences, latent throughout nature, although kept under by vast conformity to average matter-of-fact. In mankind, these conceptual experiences are coördinated, and express themselves throughout their environment. This coördination has two aspects, aesthetic and logical. These aspects will form the topic of my next lecture.
In conclusion, it is time to sum up what I have been saying this afternoon. This lecture is nothing else than a modern rendering of the oldest of civilized reflections on the development of the universe as seen from the perspective of life on this earth. In comparing modern thought with ancient records, we must remember the difficulties of translation, and the difficulties of any thinker battling with the verbal expression of thought which penetrates below the ordinary usages of the market place. For instance, how differently would Aristotle's metaphysical reflections read if we persisted in translating one of his metaphysical key words by the English term wood, and also insisted on giving the most literal meaning to that word. There is evidence that three thousand years ago there were deep thinkers, enmeshed as to their imaginations in the trivial modes of presentation belonging to their own days.

But we can discern in the records, which have been edited and re-edited by unimaginative scribes, the notion of the evolution of the universe as viewed from the perspective of life on this earth. We can discern the classification, involving the large physical grades, the grades of vegetation and of animal life, the final rise to human life.

We can also discern the notion of the interweaving of language with the rise of human experience, in the naïve, childish account of the naming of things. In fact, the whole ancient account is simple-minded in the extreme. And yet the pretentious generalities of the modern rendering do not attain much more than an endeavour to avoid the over-sharp divisions between the various stages, and the excessive simplification of the agencies involved.

This lecture has been written in terms of immanence, and in terms of action and reaction. Its final conclusion respecting human nature, is that the mentality of mankind
and the language of mankind created each other. If we like to assume the rise of language as a given fact, then it is not going too far to say that the souls of men are the gift from language to mankind.

The account of the sixth day should be written, He gave them speech, and they became souls.
In the two foregoing lectures, importance and expression have been discussed. The notion of "Understanding" is the third of the trilogy, upon which we base our endeavour to analyze the intelligence of mankind. Our quest is to understand understanding.

I submit to you that in its full extent this is a hopeless task. We can enlighten fragmentary aspects of intelligence. But there is always an understanding beyond our area of comprehension. The reason is that the notion of intelligence in pure abstraction from things understood is a myth. Thus a complete understanding is a perfect grasp of the universe in its totality. We are finite beings; and such a grasp is denied to us.

This is not to say that there are finite aspects of things which are intrinsically incapable of entering into human knowledge. Whatever exists, is capable of knowledge in respect to the finitude of its connections with the rest of things. In other words, we can know anything in some of its perspectives. But the totality of perspectives involves an infinitude beyond finite knowledge. For example, we know about the colour green in some of its perspectives. But
what green is capable of in other epochs of the universe, when other laws of nature are reigning, is beyond our present imaginations. And yet there is nothing intrinsically impossible in the notion that, as years pass, mankind may gain an imaginative insight into some alternative possibility of nature, and may therefore gain understanding of the possibilities of green in other imagined epochs.

There is a rhyme which fits onto the tradition respecting Dr. Whewell, who was Master of Trinity College, Cambridge, about eighty years ago. The rhyme is well-known, and runs thus:

I am Master of this College;
And what I know not,
Is not knowledge.

This attitude is always prevalent in the learned world. It sterilizes imaginative thought, and thereby blocks progress.

In our discussion of understanding, this is the first heresy that I wish to combat. I am not attributing this heresy to Dr. Whewell, although he is said to have exhibited an arrogance, perhaps justified by his very extensive learning. My point is that understanding is never a completed static state of mind. It always bears the character of a process of penetration, incomplete and partial. I fully admit that both aspects of understanding enter into our modes of thought. My thesis is that when we realize ourselves as engaged in a process of penetration, we have a fuller self-knowledge than when we feel a completion of the job of intelligence.

Of course in a sense, there is a completion. But it is a completion presupposing relation to some given undefined environment, imposing a perspective and awaiting exploration. Thus we have a large knowledge of the colour green. But this knowledge is limited by the perspective of the present epoch of the universe. It is relevant to a definite
unexplored immensity; and this immensity is only itself to
be understood by its relevance to alternative immensities.

Shelley, in a chorus of his dramatic poem “Hellas,”
writes

Worlds on worlds are rolling ever
From creation to decay,
Like the bubbles on a river,
Sparkling, bursting, borne away.

Amidst this passage of creation, understanding is limited
by its finitude. Yet amidst the infinity of things finite, there
is nothing finite which is intrinsically denied to it. Such
ignorance is accidental; and such possibility of knowledge
discloses its relevance to unexplored aspects of things
known. Any knowledge of the finite always involves a
reference to infinitude.

The specialization which is necessary for the develop-
ment of civilized thought had in the last century a most
unfortunate effect on the philosophic outlook of learned
people, and thence on the development of institutions for
the promotion of learning. The various departments of
universities emphasized their independence of each other.
Also a university gained reputation in proportion to its
expansion in terms of such subdivision.

As science grew, minds shrank in width of comprehen-
sion. The nineteenth century was a period of great achieve-
ment, suggestive of an anthill. It failed to produce men of
learning with a sensitive appreciation of varieties of interest,
of varieties of potentiality. It criticized and exploded,
where it should have striven to understand. The detailed
setting of its interest is, in every age, a crude mixture of
depth of understanding and of triviality of setting, when
looked at from beyond that age. And yet to understand the
nature of existence, we must grasp the essential character
of that depth which, beyond all mistaken details, is the
mainspring of the ascent of life discernible in its own age. And here another qualification must be added, namely—If ascent there be.

The very Renaissance itself, of which the last century was the final phase in the agonies of begetting its successor, carried in itself limitations which obstructed the proper expansion of intellectual interest. It was rooted in Greek learning, conceived as the only begetter of civilization. Undoubtedly, the debt of Europe to Greece is beyond words to express. But, after all, Grecian thought, even when expanded into Greek-Hebrew-Egyptian thought, only presents one finite aspect of the many-sided modes of importance which are pressing upon the outskirts of human consciousness.

We must enlarge our effort at understanding. In the nineteenth century, the Greek scholars were somewhat narrower than the best of the Greeks, the Christian scholars were somewhat narrower than the best of the early Popes, and the men of science were somewhat narrower than the founders of the study of mathematics and of physical science. The nineteenth century in the aggregate knew immeasurably more than the Greeks, and the Popes, and the founders of science, all put together. But the moderns had lost the sense of vast alternatives, magnificent or hateful, lurking in the background, and awaiting to overwhelm our safe little traditions. If civilization is to survive, the expansion of understanding is a prime necessity.

2. What is understanding? How can we characterize it? In the first place, understanding always involves the notion of composition. This notion can enter in one of two ways. If the thing understood be composite, the understanding of it can be in reference to its factors, and to their ways of interweaving so as to form that total thing. This mode of comprehension makes evident why the thing is what it is. The second mode of understanding is to treat the thing
as a unity, whether or not it is capable of analysis, and to obtain evidence as to its capacity for affecting its environment. The first mode may be called the internal understanding, and the second mode is the external understanding.

But this phraseology tells only part of the tale. The two modes are reciprocal: either presupposes the other. The first mode conceives the thing as an outcome, the second mode conceives it as a causal factor. In this latter way of stating our meaning, we have drifted into the notion of understanding the process of the universe. Indeed the presupposition of process seems even to enter into our previous analysis. We can take these ways of explanation of meaning as applying to the understanding of the passage of nature.

It is true that nothing is finally understood until its reference to process has been made evident. And yet, there is the understanding of ideal relationships in abstraction from reference to the passage of brute fact. In the notion of such relationships there is no transition.

For example, throughout mathematics, in one sense, transition does not enter. The interconnections are displayed in their timeless eternity. It is true that the notions of time, and of approach, and of approximation, occur in mathematical discourse. But as used in the science, the timefulness of time and the motion of approach are abstracted from. In mathematics, as understood, the ideal fact stands out self-evident.

There is very little large-scale understanding, even among mathematicians. There are snippets of understanding, and there are snippets of connections between these snippets. These details of connection are also understood. But these fragments of intelligence succeed each other. They do not stand together as one large self-evident
coördination. At the best, there is a vague memory of details which have recently been attended to.

This succession of details of self-evidence is termed proof. But the large self-evidence of mathematical science is denied to humans.

To give an example, the snippet of knowledge that the addition of 1 and 4 produces the same multiplicity as the addition of 2 and 3, seems to me self-evident. It is a humble bit of knowledge; but, unless I deceive myself, it stands before me with a clarity of insight. I hesitate to claim any such self-evidence when larger numbers are involved. I have recourse to the indignity of proof. Other people have wider powers.

For example, consider Ramanujan, the great Indian mathematician, whose early death was a loss to science analogous to that of Galois. It was said of him that each of the first hundred integers was his personal friend. In other words, his insights of self-evidence, and his delight in such insights, were of the same character as most of us feel for the integers up to the number 5. Personally, I cannot claim intimate friendship beyond that group. Also the restriction of the group somewhat, in my own case, hinders the growth of that feeling of delight which Ramanujan enjoyed.

I confess to a larger pleasure in patterns of relationship in which numerical and quantitative relationships are wholly subordinate. I mention these personal details in order to emphasize the great variety of characters that self-evidence can assume, both as to extent and as to the character of the compositions which are self-evident. The sense of completion, which has already been mentioned, arises from the self-evidence in our understanding. In fact, self-evidence is understanding.

The sense of penetration, which also clings to our ex-
perience of intelligibility, has to do with the growth of understanding. To feel the completion apart from any sense of growth, is in fact to fail in understanding. For it is a failure to sense dimly the unexplored relationships with things beyond. To feel the penetration without any sense of completion, is also to fail in understanding. The penetration itself is then deficient in meaning. It lacks achievement.

3. We now come to the notion of "Proof." The thesis that I am developing conceives proof, in the strict sense of that term, as a feeble second-rate procedure. When the word proof has been uttered, the next notion to enter the mind is halfheartedness. Unless proof has produced self-evidence and thereby rendered itself unnecessary, it has issued in a second-rate state of mind, producing action devoid of understanding. Self-evidence is the basic fact on which all greatness supports itself. But proof is one of the routes by which self-evidence is often obtained.

As an example of this doctrine, in philosophical writings proof should be at a minimum. The whole effort should be to display the self-evidence of basic truths, concerning the nature of things and their connection. It should be noticed that logical proof starts from premises, and that premises are based upon evidence. Thus evidence is presupposed by logic; at least, it is presupposed by the assumption that logic has any importance.

Philosophy is the attempt to make manifest the fundamental evidence as to the nature of things. Upon the presupposition of this evidence, all understanding rests. A correctly verbalized philosophy mobilizes this basic experience which all premises presuppose. It makes the content of the human mind manageable; it adds meaning to fragmentary details; it discloses disjunctions and conjunctions, consistencies and inconsistencies. Philosophy is
the criticism of abstractions which govern special modes of thought.

It follows that philosophy, in any proper sense of the term, cannot be proved. For proof is based upon abstraction. Philosophy is either self-evident, or it is not philosophy. The attempt of any philosophic discourse should be to produce self-evidence. Of course it is impossible to achieve any such aim. But, nonetheless, all inference in philosophy is a sign of that imperfection which clings to all human endeavour. The aim of philosophy is sheer disclosure.

The great difficulty of philosophy is the failure of language. The ordinary intercourse of mankind is concerned with shifting circumstance. It is unnecessary to mention self-evident facts. Thus hunting scenes had been depicted on the walls of caves for thousands of years before the more permanent spatial relations had become a topic for conscious analysis. When the Greeks required terms for the ultimate characters of the actualities of nature, they had to use terms such as water, air, fire, wood.

When the religious thought of the ancient world from Mesopotamia to Palestine, and from Palestine to Egypt, required terms to express that ultimate unity of direction in the universe, upon which all order depends, and which gives its meaning to importance, they could find no way better to express themselves than by borrowing the characteristics of the touchy, vain, imperious tyrants who ruled the empires of the world. In the origin of civilized religion, gods are like dictators. Our modern rituals still retain this taint. The most emphatic repudiations of this archaic notion are to be found scattered in the doctrines of Buddhism and in the Christian Gospels.

Language halts behind intuition. The difficulty of philosophy is the expression of what is self-evident. Our understanding outruns the ordinary usages of words. Phi-
Philosophy is akin to poetry. Philosophy is the endeavour to find a conventional phraseology for the vivid suggestiveness of the poet. It is the endeavour to reduce Milton's "Lycidas" to prose; and thereby to produce a verbal symbolism manageable for use in other connections of thought.

This reference to philosophy illustrates the fact that understanding is not primarily based on inference. Understanding is self-evidence. But our clarity of intuition is limited, and it flickers. Thus inference enters as means for the attainment of such understanding as we can achieve. Proofs are the tools for the extension of our imperfect self-evidence. They presuppose some clarity; and they also presuppose that this clarity represents an imperfect penetration into our dim recognition of the world around—the world of fact, the world of possibility, the world as valued, the world as purposed.

4. At this point of our discussion another aspect of things claims explicit recognition. It is a general character, whose special forms are termed variously disorder, evil, error. In some sense or other, things go wrong; and the notion of correction from worse to better, or the notion of decay from better to worse, enters into our understanding of the nature of things.

It is a temptation for philosophers that they should weave a fairy tale of the adjustment of factors; and then as an appendix introduce the notion of frustration, as a secondary aspect. I suggest to you that this is the criticism to be made on the monistic idealisms of the nineteenth century, and even of the great Spinoza. It is quite incredible that the absolute, as conceived in monistic philosophy, should evolve confusion about its own details.

There is no reason to hold that confusion is less fundamental than is order. Our task is to evolve a general concept which allows room for both; and which also suggests the path for the enlargement of our penetration. My
suggestion is that we start from the notion of two aspects of the universe. It includes a factor of unity, involving in its essence the connexity of things, unity of purpose, and unity of enjoyment. The whole notion of importance is referent to this ultimate unity. There is also equally fundamental in the universe, a factor of multiplicity. There are many actualities, each with its own experience, enjoying individually, and yet requiring each other.

Any description of the unity will require the many actualities; and any description of the many will require the notion of the unity from which importance and purpose is derived. By reason of the essential individuality of the many things, there are conflicts of finite realizations. Thus the summation of the many into the one, and the derivation of importance from the one into the many, involves the notion of disorder, of conflict, of frustration.

These are the primary aspects of the universe which common sense brooding over the aspects of existence hands over to philosophy for elucidation into some coherence of understanding. Philosophy shirks its task when it summarily dismisses one side of the dilemma. We can never fully understand. But we can increase our penetration.

When there is a full understanding, any particular item belongs to what is already clear. Thus it is merely a repetition of the known. In that sense, there is tautology. Thus tautology is the intellectual amusement of the Infinite.

Also in the same sense, the selection of the particular item for emphasis is equally arbitrary. It is the convention by means of which the Infinite governs its concentration of attention.

For the finite individual there is penetration to novelty in its own experience; and the selection of detail is subject to the causation from which that individual originates.
Philosophy tends to oscillate between the points of view belonging to the infinite and to the finite. Thus understanding, however imperfect, is the self-evidence of pattern, so far as it has been discriminated. Also for the finite experience, inference is the achievement of further penetration into such self-evidence.

A partially understood pattern is more definite as to what it excludes than as to what its completion would include. As to inclusion there are an infinitude of alternative modes of completion. But so far as there is any definiteness attaching to the incomplete disclosure, certain factors are definitely excluded. The foundation of logic upon the notion of inconsistency was first discovered and developed by Professor Henry Sheffer of Harvard, about twenty years ago. Professor Sheffer also emphasized the notion of pattern, as fundamental to logic. In this way, one of the great advances in mathematical logic was accomplished.

In the first place, by basing logic upon the concept of inconsistency, the notion of the finite is definitely introduced. For as Spinoza pointed out, the finite is that which excludes other things comparable to itself. Thus inconsistency bases logic upon Spinoza's concept of finitude.

In the second place, as Sheffer pointed out, the notions of negation and of inference can be derived from that of inconsistency. Thus the whole movement of logic is provided for. We may notice that this basis for logic suggests that the notion of frustration is more akin to finite mentality; while the notion of harmonious conjunction is derived from the concept of a monistic universe. It is for philosophy to coördinate the two aspects which the world presents.

In the third place, this basis for logic enlightens our understanding of process, which is a fundamental fact in our experience. We are in the present; the present is always shifting; it is derived from the past; it is shaping the future;
it is passing into the future. This is process, and in the universe it is an inexorable fact.

5. But if all things can be together, why should there be process? One answer to this question embodies a denial of process. According to this answer process is mere appearance, devoid of significance for ultimate reality. This solution seems to me to be very inadequate. How can the unchanging unity of fact generate the delusion of change? Surely, the satisfactory answer must embody an understanding of the interweaving of change and permanence, each required by the other. This interweaving is a primary fact of experience. It is at the base of our concepts of personal identity, of social identity, and of all sociological functionings.

Meanwhile, another aspect of the relationship between inconsistency and process must now occupy us. Inconsistency is the fact that the two states of things which constitute the respective meanings of a pair of propositions cannot exist together. It denies a possible conjunction between these meanings. But these meanings have been brought together in the very judgment of inconsistency. This is the sort of perplexity that Plato alluded to, when he makes one of his characters say, "Not-being is a sort of being."

The conclusion that I draw is that the word together, and indeed all words expressive of conjunction in general, without definite specification, are very ambiguous. For example, the little word and is a nest of ambiguity. It is very astounding how slight has been the analysis of the ambiguities of words expressive of conjunctions. Such words are the death-traps for accuracy of reasoning. Unfortunately, they occur abundantly in sentences, expressed in the most perfect literary form. Thus an admirable literary style is no security for logical consistency.

In reading philosophic literature every word expres-
sive of conjunction must be deeply pondered over. If it be used twice in the same sentence, or in neighbouring sentences, can we be sure that the two usages embody the same meaning, at least sufficiently for the purposes of the argument?

I suggest to you that the contradictions, famous in ancient and in modern logic, arise from such ambiguities. Many words which are not formally conjunctions, are expressive of a conjunctive meaning. For example, the word class has all the manifold ambiguity of the word and. The understanding of pattern, and of the conjunctions involved in various patterns, depends upon the study of such ambiguities. On this topic philosophic literature is very simple-minded. So many vigorous and cogent arguments fall into this trap.

We must now return to the topic of inconsistency and process. The concept that two propositions, which we will name p and q, are inconsistent, must mean that in the modes of togetherness illustrated in some presupposed environment the meanings of the propositions p and q cannot both occur. Neither meaning may occur or either may occur, but not both. Now process is the way by which the universe escapes from the exclusions of inconsistency.

Such exclusions belong to the finitude of circumstance. By means of process, the universe escapes from the limitations of the finite. Process is the immanence of the infinite in the finite; whereby all bounds are burst, and all inconsistencies dissolved.

No specific finitude is an ultimate shackle upon the universe. In process the finite possibilities of the universe travel towards their infinitude of realization.

In the nature of things there are no ultimate exclusions, expressive in logical terms. For if we extend the stretch of our attention throughout the passage of time,
two entities which are inconsistent for occurrence on this planet during a certain day in the long past and are inconsistent during another day in more recent past—these two entities may be consistent when we embrace the whole period involved, one entity occurring during the earlier day, and the other during the later day. Thus inconsistency is relative to the abstraction involved.

An easy intellectual consistency can be attained, provided that we rest content with high abstraction. Pure mathematics is the chief example of success by adherence to such rigid abstraction. Again, the importance of mathematics, as finally disclosed in the sixteenth and seventeenth centuries, illustrates the doctrine that the advance of the finite human understanding requires the adherence to some judicious abstraction, and the development of thought within that abstraction. The disclosure of this method has issued in the progressive science of modern civilization, within the last three thousand years.

6. But the discovery has been gradual, and the method is even now imperfectly understood. Learned people have handled the specialization of thought with an incredible lack of precaution. It is almost universally assumed that the growth of a specialization leaves unaffected the presuppositions as to the perspective of the environment which were sufficient for the initial stages. It cannot be too clearly understood that the expansion of any special topic changes its whole meaning from top to bottom. As the subject matter of a science expands, its relevance to the universe contracts. For it presupposes a more strictly defined environment.

The definition of the environment is exactly what is omitted from special abstraction. Such definition is an irrelevance. It is irrelevant because it requires an understanding of the infinitude of things. It is therefore im-
possible. All that we can do is to make an abstraction, to presuppose that it is relevant, and to push ahead within that presupposition.

This sharp division between the clarity of finite science and the dark universe beyond is itself an abstraction from concrete fact. For example, we can explore our presuppositions. Take the special case of natural science, we presuppose geometry. But what sort of geometry? There are many kinds. In fact, there are an indefinite number of alternative geometries. Which one are we to choose?

We all know that this is a topic which has bothered, or elated, physical science during the last thirty years. At last the great scientists are coming to conclusions which we will all accept. And yet a sceptical doubt intrudes. How do we know that only one geometry is relevant to the complex happenings of nature? Perhaps a three-dimensional geometry is relevant to one sort of occurrences; and a fifteen-dimensional geometry is required for another sort.

Of course our more obvious sense perceptions seem to clamour for three dimensions, especially sight. On the other hand sound, though voluminous, is very vague as to the dimensions of its volumes, as between three or fifteen, for instance. Also any change in scale, to the very small or to the very large, makes surprising changes in the characters of the happenings disclosed so far as we can observe.

We have developed very special types of sensory observation; and in consequence we are wedded to a correspondingly special set of results, true enough if we introduce the proper limitations. But as our science expands the area of relationship to other aspects of nature becomes increasingly important.

Perhaps our knowledge is distorted unless we can comprehend its essential connection with happenings which involve spatial relationships of fifteen dimensions. The dogmatic assumption of the trinity of nature as its sole
important dimensional aspect has been useful in the past. It is becoming dangerous in the present. In the future it may be a fatal barrier to the advance of knowledge.

Also, this planet, or this nebula in which our sun is placed, may be gradually advancing towards a change in the general character of its spatial relations. Perhaps in the dim future mankind, if it then exists, will look back to the queer, contracted three-dimensional universe from which the nobler, wider existence has emerged.

These speculations are, at present, neither proved nor disproved. They have however a mythical value. They do represent how concentration on coherent verbalizations of certain aspects of human experience may block the advance of understanding. Too many apples from the tree of systematized knowledge lead to the fall of progress.

The sense of advance, of penetration, is essential to sustain interest. Also there are two types of advance. One is the advance in the use of assigned patterns for the coördination of an increased variety of detail.

But the assignment of the type of pattern restricts the choice of details. In this way the infinitude of the universe is dismissed as irrelevant. The advance which has started with the freshness of sunrise degenerates into a dull accumulation of minor feats of coördination. The history of thought and the history of art illustrate this doctrine. We cannot prescribe the pattern of progress.

It is true that advance is partly the gathering of details into assigned patterns. This is the safe advance of dogmatic spirits, fearful of folly. But history discloses another type of progress, namely the introduction of novelty of pattern into conceptual experience. In this way, details hitherto undiscriminated or dismissed as casual irrelevances are lifted into coördinated experience. There is a new vision of the great Beyond.

7. Thus understanding has two modes of advance, the
gathering of detail within assigned pattern, and the discovery of novel pattern with its emphasis on novel detail. The intelligence of mankind has been halted by dogmatism as to pattern of connection. Religious thought, aesthetic thought, the understanding of social structures, the scientific analysis of observation, have alike been dwarfed by this fatal virus.

It entered European thought at the very beginning of its brilliant foundation. Epicurus, Plato, Aristotle, were alike convinced of the certainty of various elements in their experience, in the exact forms in which they understood them. They were unaware of the perils of abstraction. Later on, in his Critique of Pure Reason, Kant gave a masterly exposition of the reasons why we should be so certain. There was a concurrence of genius as to this certainty.

It is a tragedy of history, that in the sense in which these great men held these beliefs, not one of their doctrines has survived the wider knowledge of the last two centuries. Mathematics is not true in the sense in which Plato conceived it. Sense data are not clear, distinct, and primary, in the sense in which Epicurus believed.

The history of thought is a tragic mixture of vibrant disclosure and of deadening closure. The sense of penetration is lost in the certainty of completed knowledge. This dogmatism is the antichrist of learning.

In the full concrete connection of things, the characters of the things connected enter into the character of the connectivity which joins them.

Every example of friendship exhibits the particular characters of the two friends. Two other people are inconsistent in respect to that completely defined friendship. Again the colours in a picture form a composition, which is partly geometrical. If we merely consider the abstract