

PHILOSOPHY VINDICATED

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IT has become the custom of late years to liken philosophy to the search in a pitch-dark room for a black cat that, after all, does not really exist. Philosophy is often considered a curious species of Solitaire, in which such terms as "substance," "mode," "percept," "concept," "matter," and "spirit" are manipulated about to beguile the excess leisure of a muscle-bound intellect, rendered unfit to participate on the battle-ground of the world of action by too great subtlety and over-sensitivity.

Philosophy, say its detractors, is a now abandoned method of searching for truth, by means of speculation and ingenious spinning out of words, which has been supplanted by science, which gets at, and observes the "facts." Like religion, philosophy is held to represent an immature stage in the evolution of human intelligence, and to be now well-nigh obsolete among enlightened people. But old superstitions die hard; millions of people still belong to the churches, and a few living fossils of academic erudition still cultivate philosophy.

Such is the attitude of a certain superior class of persons toward philosophy: a class that has just been emancipated from the mediæval superstitions of Fundamentalism, and, like a delighted child, is trying out its newly acquired wings of intellectual freedom in flights of polite heresy; a class that has been newly converted from the Babbitry of Dr. Frank Crane to the Babbitry of H. L. Mencken; a class that rejects the fallacious creed of the ignorant majority only to embrace the liberal dogma of the enlightened minority that reads the *American Mercury*. H. L. Mencken in an editorial of his makes some caustic jibes at philosophy, and forever afterwards the *American Mercury* reading public, the class that has been freed from intellectual dictatorship and now does its own thinking, goes about

repeating parrot-like the gospel of our lord, H. L. Mencken.

The chief reason for this widespread disdain of philosophy is the popular acceptance of materialism, which is commonly supposed to be identical with science, and to have rendered philosophy no longer necessary. But in reality, materialism, far from being science itself, is only a philosophical inference drawn from some of the results of science. Far from having supplanted philosophy, materialism is itself a philosophy.

Materialism had a large following in learned circles during the latter half of last century. Its votaries were principally men of science, with no genuine philosophical training, suddenly turned into philosophers through whim. The works of these amateur philosophers are full of crudities and self-contradictions, but they are comparatively easy to read and fascinating in their naive simplicity, which accounts for their vogue among the uninitiated. Like all doctrines that have had to fight their way into favor, materialism is only now winning a popular acceptance, long after it has been left behind in philosophical circles.

Materialism is based on the unwarranted assumption that there is only one science of nature, the science of mechanics. All the other sciences, such as chemistry, biology, psychology, sociology, are considered more complicated phases of mechanics. The ideal towards which materialism strives is the ultimate explanation of all phenomena, whether chemical, biological, or psychical, in terms of motions of indivisible unit particles of matter. Nothing is said to exist but matter in the form of atoms, and the motions of these atoms. If the position of every particle in the universe together with the direction and the velocity of its motion were known, it would be possible to reconstruct the past history and to predict the future of the universe down to the smallest detail. A hypothetical all-knowing mind, from the positions and velocities of the particles of the primeval nebula from which the solar system evolved, could have deduced, by mathematical calculation, the future history of the earth down to every word of Homer, every chord of Beethoven, every formula of Einstein, every nuance of Fritz Kreisler. This is the logical corollary of materialism. Such is the miracle the skeptics so piously believe.

This exaltation of mechanics into the one master science is the outcome of the magnificent results the physics of Kepler, Galileo, and Newton yielded in reducing the motions of the planets to infal-

lible law and order. At one time geometry was considered the fundamental science, and Plato had the motto, "Let no one ignorant of geometry enter here," placed over the entrance to his academy. The present enthusiasm for mechanics is a mere fad, which will pass like the former enthusiasm for geometry.

As a matter of fact, there are at least five fundamental sciences of reality; Physics (Mechanics), Chemistry, Biology, Psychology, and Sociology, each succeeding science treating of a new and higher order of reality, which could not be treated by the preceding sciences. The simplest fact of chemistry cannot be explained in terms of mechanics. When two atoms of hydrogen combine with one atom of oxygen, the product, water, has qualities and properties which could not have been predicted from our knowledge of the properties of oxygen and hydrogen. Or, carrying the example out to its ideal limits, if every electron and proton, their positions, velocities, and masses were known in the reaction, if we had no previous experience of water, we should be unable to predict the result of the reaction.

If the mechanistic hypothesis is inadequate to account for the simplest chemical reaction, how much more far-fetched is the attempt to reduce the phenomena of biology, or even psychology, to mechanics.

The term materialist, or mechanist, is sometimes improperly applied to those scientists who would reduce biology and the higher sciences to organic chemistry. Much has been done in the field of Bio-chemistry, as it is called, but the knowledge of the chemistry of living organisms by no means exhausts the science of biology. Bio-chemistry and biology represent two different viewpoints from which the same set of phenomena may be studied, and each uses a different set of concepts. Bio-chemistry is based on the concepts of atomic and molecular proportions, transformations of chemical energy, etc.; biology is grounded on the concepts of life, growth, development, and evolution. The latter set of concepts cannot be reduced to the former; they are supplementary, not higher or lower terms of the same thing.

The phenomena of life involve complicated chemical processes it is true, but new qualities, biological qualities, *emerge* from the aggregate of chemical qualities which a knowledge of the latter alone would never reveal. In the same way, in our previous example of the chemistry of water, new qualities, of the chemical order, emerge from the aggregate of physical qualities of hydrogen and oxygen.

This doctrine of emergence is one of the most generally accepted of the philosophical tendencies of the present day. It may be abstractly stated thus: Aggregates have properties which are more than, and cannot be predicted from, the sum of their constituent parts.

Each succeeding science in the hierarchy of fundamental sciences, physics, chemistry, biology, psychology, sociology, deals with a higher order of emergent qualities than the science immediately preceding it. The realm of inert, dead, mechanical law emerges from "events" in the space-time manifold. The chemical order of reality emerges from the mechanical order. When the phenomena of chemistry become sufficiently complex a new order of reality, called life, emerges. Mind emerges from life, and the phenomena of society emerge from aggregates of minds.

It is thus seen that the fundamental axiom of materialism, that all phenomena can ultimately be explained in terms of mechanics, or in terms of physics and chemistry, is a mistaken dogma, as fallacious as the dogmas of mediaeval theology.

Materialism also meets insuperable difficulties in its treatment of the mind and body problem. In keeping with its fundamental postulate, that the one reality is matter, materialism attempts to reduce mind to body. Mind is explained as the functioning of matter of especially complex organization, namely, brain and nerve tissue. Consciousness is an accidental something accompanying these complex material phenomena in the brain, much the same as an accidental humming sound accompanies the operation of complex machinery. Consciousness is without utility of any sort, a mere epiphenomenon accompanying brain and nerve processes.

If this view is correct, the plays of Shakespeare, the music-dramas of Wagner, the paintings of Michaelangelo, might equally well have been produced and appreciated by a race of unconscious automatons, since consciousness has no effect on our conduct and is a mere accidental spectator enjoying (or lamenting) the mechanically determined operations of our body-machines.

Recent developments in the physical sciences, which formerly were the chief prop of materialism, have tended to discredit materialism. The materiality of the once dreaded "matter"—that object of the invectives of theologians and the spiritually inclined—has been impeached by recent researches into the nature of the electron. The electron, the ultimate unit of matter, has been reduced

to a mere centre of reference, from which radiations emanate at certain intervals, and since the electrons are known to us only through these intermittent radiations we are unjustified in attributing to them the properties of "matter" as common-sense conceives that term. From a strictly empirical stand-point, all that can be said of a piece of matter is that it consists of a series of "events" in the space-time manifold, having a more or less persisting identity. The definition which defines matter as "nothing in motion" is more than a witticism. Physical science is becoming more and more ghostly and spiritual, and the former hard, impenetrable ultimate particles of matter are now immaterial centres of force. There is no longer any absurdity in supposing these centres of force to be psychical in nature, the expression, mayhap, of nescient will or intelligence. While psychology, under the influence of behaviorism, is becoming materialistic, physics is fast approaching panpsychism!

Materialism being thus archaic and inadequate, the problems of philosophy are not mere hallucinations, and philosophy is as real and valid a discipline as ever.

But despite the fact that materialism is dead among philosophers, it is gaining multitudes of converts, especially among the younger generation. The reasons for this growth of materialism are its attractive extremism; its appealing, but specious, simplicity; the gradual extinction of Christianity; its ethical indifference, which condones an empty life of frivolous pleasure seeking; and above all, the appalling and almost universal ignorance of philosophy.

The Fundamentalist Christianity of the older generation is losing ground rapidly, and after a few more pyrrhic victories, such as that of the Tennessee evolution trial, will be well nigh extinct. Modernism has not been able to repair the breach in the dam of faith left by Fundamentalism crumbling before the debacle of modern enlightenment. Supernaturalism, with good old-fashioned miracles and hell-fire, is the very life and blood of popular religion, and for that reason Modernism makes little appeal. The unenlightened person wants a religion of the old brand, with a heaven to reward the virtuous and downtrodden, and a hell to punish the sinful and prosperous, or else he had rather not bother with religion at all. The person with sufficient intelligence to get along without a future heaven and hell is not attracted by pale, anemic Modernism, which appears to him to be nothing but words, cleverly juggled so as to

reconcile science and theology. The widespread ignorance of philosophy leaves no alternative but materialism, in either case. Hence it is not surprising that materialism is succeeding decaying fundamentalism.

The passing of the old religions will leave the world as dogmatic as ever. The dogmatism of materialism will have become substituted for the dogmatism of Christianity, and new philosophical ideas will meet the same hostile reception as of old. The only solution of the difficulty lies in a more widespread study of philosophy.

One of the chief enemies with which philosophy has to contend is a complete and almost universal misapprehension of the problems, scope, and field of philosophy, and its relations to the other branches of human knowledge.

It is popularly and erroneously believed that science—that is, observation and experiment—has superseded and put into discard philosophy—that is, loose, unverified speculation. A certain superior class of hack writers, who style themselves “scientific,” because they have read and half-understood a few unauthoritative, popular books on science, are fond of alluding to the misguided efforts of certain medieval, theological philosophers, and placing a stigma upon all philosophical activity in consequence.

The question of how many teeth a horse has become a subject of debate at some time during the Middle Ages, and a group of worthy Schoolmen wasted an astonishing amount of brain tissue, ink and paper, breath, and ill temper without arriving at an agreement. It never occurred to these Scholastics to get a real, living specimen of a horse, open his mouth, and count his teeth. The pseudo-scientific writers mentioned above regale the magazine-reading public with this delectable story, and then, fearing that the point will be missed, proceed to give the reader a good dose of moral, in the shape of the conclusion that philosophy is obsolete, and has been superseded by science.

There are several errors in this specious moral. In the first place, the Schoolmen of the Middle Ages were theologians rather than philosophers, and all their so-called philosophizing was obliged to arrive at pre-ordained conclusions fixed by the authority of the Church militant. Scholastic reasoning was the process of finding new proofs for old “truths,” fixed by authority, not the process of arriving at new truths. In the second place, the mistakes of indi-

vidual philosophers do not invalidate philosophy as a whole. Scientists also have often made mistakes, but no one outside of Billy Sunday or John Roach Straton would hold that these acknowledged errors constitute a refutation of science.

A misapprehension of what philosophy really is lies at the bottom of these attempts to ridicule philosophy.

We shall now attempt to arrive at a more exact idea of what philosophy really is. The successful defining of philosophy constitutes perhaps the most difficult problem of philosophy. A fair sized volume could be filled with various definitions which have been tried and found inadequate during the history of philosophic thought.

The reason for the difficulty, nay, impossibility, of defining philosophy has been aptly summed up by Hegel, who said that philosophy cannot be defined since it defines all else. A definition of philosophy in one sentence must be given up as an impossible undertaking, so we shall attempt to define philosophy by pointing out a few of its more salient tasks.

The principal aim of philosophy is to arrive at a unified conception of the universe, a *Weltanschauung*, or world-view, through a critical and synthetic examination of all the humanly possible ways of knowing reality.

These modes of knowing are Common Sense, Religion, Art, and Science, each of which represents a distinct and peculiar view-point, in accordance with which the multiplicity of phenomena is interpreted. Common sense looks at things from the undisciplined point of view of the man on the street. Religion attempts to formulate the individual's emotional relationship, and moral responsibility to the Invisible Power behind the universe. Art interprets reality in terms of beauty, and hence is more or less subjective and capable of an infinite variety of forms. Science describes the universe in terms of mechanism, and lays bare the mechanical means through which the cosmic purposes are realized. In other words, science studies the technique of the Composer of the cosmic symphony.

The function of metaphysics, the central discipline of philosophy, is to construct a dispassionate, composite view of reality, from all that it finds valid in the claims of common sense, religion, art, and science. Such a broad, unprejudiced, synthetic attitude toward the cosmos constitutes one's *Weltanschauung*.

It frequently happens that conflicts occur between common

sense, religion, art, and science. But such clashes are due to ignorance of the proper sphere of each of these apparently contending points of view; in other words, an ignorance of philosophy.

Take science and religion for example. Religion has often attempted to do the work that legitimately belongs to science, as in the Book of Genesis in the Bible, where a would-be scientific explanation of the origin of things is given. Because of such encroachments of religion upon the domain of science, incessant warfare has been waged between these two rivals since the beginning of human thought, and continues to-day in the invectives of theologians against evolution. The so-called conflict between science and religion is in reality a conflict between the three thousand year old science of Moses and modern science.

Now there could be no conflict between a rational religion, based upon a study of philosophy, not spurious revelation, and science. Each represents a different "universe of discourse." Science can no more invalidate the religion of a philosopher than a knowledge of the number of words, the kind of type, or the grade of paper used in the printing of Hamlet can invalidate the lofty strength, truth, and beauty of Shakespeare's immortal lines.

In this connection, there is an interesting story on record of a certain natural mathematician, who could do unheard of problems, such as cube roots and adding whole pages of figures, mentally. Once out of curiosity, a group of this extraordinary man's friends took him to see a performance of Hamlet, to see what his reaction would be. The looked for reaction was most curious; the mental mathematician stated the exact number of syllables, words, and speeches in the play, but was totally unable to recount the story, meaning, philosophy, or any of the aesthetic qualities of Hamlet.

Here we have a splendid example of the study of the identical subject-matter from more than one view-point, each of which belongs to a different universe of discourse, and hence does not in the least impinge upon, or invalidate, the other view-points. The mathematician studied Hamlet from a mathematical point of view, and arrived at purely quantitative results. A literary student, seeing the same production of Hamlet, might have gained a comprehensive view of Shakespeare's philosophy of life. Still another auditor might have studied the play from the viewpoint of grammar, and compared the grammar of Shakespeare with the grammar of to-day.

These three methods of studying Hamlet give us three sets of results not at all like one another. But no one would say that these different results contradict one another. The number of words in Hamlet has no bearing upon Shakespeare's grammatical usages, or upon the ethical implications of Hamlet's soliloquy.

Similarly, the universe may be studied from the viewpoints of common sense, art, religion, science, and philosophy without any contradiction ensuing, because the results of these various viewpoints are incommensurable with one another and belong to different universes of discourse.

Hence, the world-views given us by common sense, art, religion, science, and philosophy are equally valid, provided that they do not mistake their proper places, and do not encroach upon territory properly belonging to the others, as has so often happened in the past, through ignorance of philosophy. But it is to the world-view of philosophy that the greatest credence must be given, since, as we have seen, philosophy is a synthesis based upon an examination of all means of attaining knowledge.

It is sometimes erroneously held by the philosophically illiterate enemies of philosophy that philosophy is in conflict with science. Such cannot be the case, for philosophy draws part of its data from the results of science. There may indeed be conflict between materialism and other schools of philosophy, but, as we have seen, materialism is not science itself, but merely one of the possible philosophical interpretations of science.

Philosophy supplements, does not contradict science. One is philosophical after one has been scientific. Herbert Spencer said, "Knowledge of the lowest kind is *un-unified knowledge*; Science is *partially-unified knowledge*; Philosophy is *completely-unified knowledge*." (First Principles, page 119.) That is, common sense knowledge consists of scattered, isolated maxims and rules not yet reduced to a system by classification under general principles. Scientific knowledge consists of general theories and principles unifying one particular science, for example, as the atomic theory unifies chemistry, or the evolution theory, biology. According to Spencer, a philosophical generalization is one that involves the complete body of science as a whole. We should prefer, however, to give the term "philosophical" a broader application, and extend it to cover all possible knowledge, not merely scientific knowledge.

Properly speaking, that branch of philosophy which deals with

the results of science, is Natural Philosophy. The tasks of philosophy in connection with science consist in the analysis of the axioms and unanalyzed fundamental concepts of the special sciences; the examination and possible improvement of the methods and procedures of science; and the extension of broad, general scientific theories, such as the evolution theory, to all departments of human knowledge.

Each of the empirical sciences is based upon certain basic concepts, in terms of which the subject-matter of the particular science is described. The physical sciences, for example, are built upon the concepts of *matter*, *energy*, *space*, *time*, and *motion*. These terms are taken for granted, and physics makes no attempt to tell us what they really are.

It is through the identification of these terms with the significance common sense has attached to them that mistaken philosophical interpretations arise. For example, the *matter* of physics is confused with the hard, enduring, impenetrable matter of our daily experience. In reality, the term *matter* as used in science is a mere abstraction, a short-hand expression by which we express the idea that certain groups of sensible properties of our experience always occur together and maintain a persisting identity. This confusion of the scientific and common sense meanings of the word "matter" is one of the root fallacies of materialism.

Similarly, the phenomena of biology are described in terms of *life*, *structure*, *function*, *development*, *evolution*, etc. The subject-matter of psychology is reduced to the fundamental concepts of *sensation*, *perception*, *cognition*, *affection*, *volition*, etc., or, in the psychology of John B. Watson and the behaviorists, merely *stimulus* and *response*.

It is one of the tasks of natural philosophy to define and analyze these elementary concepts, such as *matter*, *energy*, *evolution*, *perception*. If philosophy were more widely studied there would be fewer faulty interpretations of the axioms of science, and less credence given to the ridiculous philosophizings of scientific specialists suddenly turned philosophers for the sake of publicity.

One of the chief tasks of natural philosophy is the application of certain far-reaching scientific to the entire body of human knowledge. The theory of evolution is such a theory. Every art, every science, literature, practically every pursuit of man, no matter how far removed from the field of biology, has been profoundly affected

by this revolutionizing and epoch-making conception. It is obvious that no one of the special sciences is general enough in its scope to undertake the task of tracing all the manifold implications of the theory of evolution. Hence this work must be undertaken by philosophy.

Another task which falls to the philosopher is the unifying of the results of the separate special sciences into an organic whole. This is an age of extreme specialization, and the workers in the different fields of scientific research are getting more and more out of touch with one another, so that were it not for the synthesizing activity of philosophy, chaos would inevitably result and science would degenerate into an unorganized, unconnected congeries of random facts and details.

It has been protested that this labor of unifying the sciences is no longer practicable for the philosopher. It is said that the results of the various sciences now form a body so inconceivably vast that no one man could hope to master it all in a lifetime.

But it is not necessary to know every particular fact in all the sciences to build up a philosophy of science. A knowledge of the principles, general laws, methods, and basic concepts is all that is requisite, the mass of details being irrelevant. The mastering of the fundamental principles of the sciences surely is not the work of a lifetime. Hence, Spencer's conception of philosophy as a completely unified universal science is still valid, except that he should have used the more restrictive term, "natural philosophy."

In addition to metaphysics and natural philosophy, which we have already examined, philosophy includes several other disciplines. The most important of these are Epistemology, Aesthetics, and Ethics. Lack of space obliges us to dismiss each of these with a word. Epistemology investigates the conditions, possibility, and validity of human knowledge. Aesthetics treats of the problems of beauty, taste, and artistic norms. Ethics studies the principles underlying moral conduct.

It is evident that these subjects are not capable of being subjected to exact scientific treatment. Hence, philosophy is necessary for their study, if for no other reason.

Philosophy is sometimes impugned on the ground that the only certain knowledge is the knowledge given us by the sciences, and that philosophy is the work of fancy and unbridled imagination in a sphere where the truth is not vouchsafed to human intelligence.

This attitude is known as *positivism* and is not to be confused with materialism. Materialism dogmatically asserts that there is no other reality than mass particles in motion. Positivism does not deny the possible existence of an underlying reality of which the world of mass particles in motion is only a manifestation. It merely says that knowledge of this underlying reality is impossible to human minds, and that our efforts should be confined to the less pretentious, but practical field of science.

Positivism is usually associated with the name of Auguste Comte, the French philosopher of the first half of the eighteenth century, who called his system the *Philosophie Positive*. Comte banished metaphysics from his philosophy and concerned himself entirely with the "positive" results of the empirical sciences. Within the field of science itself, Comte recommended complete reliance upon observation, and the exclusion of all speculation that might be of a metaphysical nature.

The result of this dread of the bogey of metaphysics was that Comte relegated so many problems of science and philosophy to the category of the "unknowable" that, had men of science followed his teachings, science would have stopped in its progress then and there and advanced no further. The nature of light, the chemical composition of the sun and the stars, the ultimate nature of matter, said Comte, were to be given up by science as problems incapable of solution by human intelligence, and scientists who dealt with them were wasting their time pursuing metaphysical will-o'-the-wisps.

Fortunately, men of science pursued these "will-o'-the-wisps" despite the warnings of the positivists, and every High School child now knows, or should know, that light consists of inconceivably rapid vibrations of what was once called the ether, that matter is composed of electrons and protons, and that the chemical element Helium was discovered in the sun even before it was found on the earth.

It will be readily seen that an over-emphasis upon mere observation to the exclusion of speculation, or imagination, in science is as fatal to progress as pure, unverified speculation. Scientific discoveries are made, not by the application of hard and fast rules of experimental procedure, but by employing the imagination in framing ingenious hypotheses, which are tried out in actual experience to see if they will work. Imagination, trial and error, even "metaphysical" speculation, are indispensable in giving the scientist his

first guesses and crude hypotheses, to be refined later, through successive modifications and verifications, into accurate laws and theories rich in practical results to mankind.

Speculation, in other words philosophy, is an indispensable part of scientific method. Pure observation and experiment, or *empiricism*, is as useless as pure, untested speculation, or *rationalism*. Throughout the ages, these two motives, the rationalistic and the empirical, have existed side by side, apparently incompatible with each other. The reason why science and philosophy were so slow in arriving at lasting and substantial results is that a happy balance between the two irreconcilables, rationalism and empiricism, had not been attained.

For the scientific method is really nothing less, nothing more, than the harnessing of the two incompatible steeds to a common purpose. Leonardo da Vinci, Galileo, and Descartes (not Bacon as is commonly supposed) developed the characteristic, wonderfully productive scientific method, and each of the three was even more a philosopher than a scientist. Galileo in his writings mentions that he had studied philosophy as many years as he had studied months of science and mathematics, and this statement is significant. For the devising of the methods of science is a task involving deep thought and philosophy. Fortunately, Leonardo and Galileo tested the efficiency of their methods by actual observation, and modern science was born.

Science is rational-empiricism. Science is the base metal, found by empiricism, transmuted by the touchstone of rationalism into pure gold.

The atomic theory of Dalton, which put chemistry upon a solid foundation; the evolution theory of Lamarck and Darwin, which has enriched not only biology, but the whole of human thought; what are they but philosophical theories, verified by their magnificent results? For who has seen, or ever will see, an atom? Who has ever seen one species turn into another? These two theories are the work of speculation, rationalism, philosophy, and not observation.

Philosophy thus plays an indispensable part in science itself. Without "metaphysical" speculation the progress of science would immediately cease. Without philosophy, the methods of science would never have come into being.

Far from philosophy having no place in science, science, whether it acknowledge it or not, assumes a metaphysical attitude in every

formula, every law, every generalization. This metaphysical attitude amounts to a matter of faith, and is the very apostle's creed of science, without which science would be as helpless as the Fundamentalist who had just lost his faith.

Science assumes as a working hypothesis, as a sacred article of faith, that the same cause must always be followed by the same effect. But from a purely empirical-skeptical standpoint there is no compulsion in causal relationships. All that can be predicated of the recurrence of phenomena is *probability*, not certainty, that the same effect will follow the same cause. Scientific laws and formulae are but "short-hand descriptions" (Karl Pearson, *Grammar of Science*) of certain regularities and uniformities in the flux of perceptual experience.

The practical applications of science, control of the forces of nature, the application of mechanical laws to machines, *assume* that the same effect *must* follow the same cause.

When George Babbit steps on the starter of his Ford, he has faith that a sequence of phenomena of electricity, dynamics, mechanics, compression and expansion of gases, and centrifugal force will occur that will enable to get to his destination on time. When a lady driver stops suddenly in front of him, he trusts that the mathematical and mechanical laws under which his brakes operate will hold good in this particular instance as they have in all observed instances in the past, provided the mechanism is in working order.

The sun has been observed to rise (apparently) in the east and set in the west in all recorded instances in the past; hence it is extremely probable that it will rise in the east and set in the west to-morrow. But the proposition that the sun must inevitably rise in the east and set in the west to-morrow is incapable of logical proof. All that we can say with the authority of logic is that it is very likely that no exception to the rule will occur to-morrow.

There is no compulsion in the passing of one phenomenon into another, a cause into its effect. All reference to a causal force or agency that brings about the effect, that makes the cause a cause, is a matter for metaphysics, not for science. We assume as a working hypothesis, "same cause, same effect." Scientists are willing to stake everything on this creed, and it constitutes their gospel.

If a metaphysical assumption, an article of faith, is necessary for science, the pursuit of life even more urgently demands a working hypothesis, a philosophy, some sort of creed. Indeed, the most

practical benefit of philosophy, the point of contact between philosophy and average human being, lies in its supplying the individual, and the age in which he lives, with an attitude toward life and the universe that will serve as the basis of his conduct.

It may be true that such an attitude toward things involves beliefs incapable of proof, faith, and a measure of dogmatism. But a certain degree of dogmatic self-assurance is necessary for successful living. Hamlet is a classic example of a man so undogmatic, so open-minded, that all action is suspended in favor of self-scrutiny, and the neutralizing influence of conflicting arguments. Hesitation, indecision, impotence, and suspended animation are the results of a too thorough-going open-mindedness.

We may concede, then, the need for a modicum of dogmatism, or faith, in a philosophy of life that is to carry conviction and which is to be capable of functioning.

Even if we grant, for the sake of argument, that the cause and purpose of existence is unknowable to human intelligence, still our minds demand that we adopt some attitude, some sort of faith, toward things, to supply a background, a justification of our behavior. Even the most unphilosophical, the most unlettered, or the most skeptical person has some sort of philosophy, conscious or unconscious, whether he admits it or not. In his conduct out in the world of life and action he acts a philosophy, though he may disdain to acknowledge it. The most self-questioning scientist belies his intellectual creed of accepting nothing without proof the moment he forgets his studies, the moment he leaves his laboratory and goes forth as a human being.

There are some individuals who prefer to have their philosophy expressed in articulate, communicable form, rather than leave it unconscious, vague, and un verbalized. Such are we poor, misguided individuals, who waste our time poring over books of philosophy, who reach out for the unattainable, who seek to render ever more complete, emotionally and intellectually satisfying, our *Weltanschauung*.

We revel in the fierce, exhilarating joy of the chase, though our quarry ever eludes us, is ever a step beyond us. What hunter pursues his prey for the mere business of filling his larder, and prefers the disappointing satisfaction of capture to the wild, innervating ecstasy of pursuit?

Malebranche said, "If I held Truth captive in my hand, I should

open my hand and let it fly, in order that I might again pursue and capture it." Philosophic Truth offers joy without end, is the one pleasure which will not allow us to become blase, because of its very unattainable nature.

As has already been hinted, science makes no claim to absolute knowledge. It seeks theories, hypotheses, laws, and formulae such that will enable us to predict and control phenomena, so that we may alter and reconstruct our experience and environment, making this world a better place in which to live. From the scientific stand-point, the value of an item of knowledge lies in its fruits, and the criterion of truth is usefulness. That which is true from this pragmatic stand-point is that which enables us to attain a fuller and more abundant living. Old truths are constantly giving way to new and more adequate truths, which better fulfill that purpose in experience.

Let us carry the pragmatic motive into the field of the life of an individual. A philosophy, or a religion, is useful, or necessary, for an individual to attain that abundant living, adjustment with his environment, that harmonious functioning of all his capacities, which are the aim of the individual's life. Hence, though we cannot attain an ultimately true philosophy, we can shape and acquire a practical and intellectually satisfying attitude toward life, that will give us those ideals that determine our character and our actions.

We have dire need to-day for some such attitude toward life. John Dewey has written well in this connection. "Where is the moral progress that corresponds to our economic accomplishments? The latter is the direct fruit of the revolution that has been wrought in physical science. But where is there a corresponding human science and art? Not only has the improvement in the method of knowing remained so far mainly limited to technical and economic matters, but this progress has brought with it serious new moral disturbances. It need only cite the late war, the problem of capital and labor, the relation of economic classes, the fact that while the new science has achieved wonders in medicine and surgery, it has also produced and spread occasions for diseases and weaknesses. These considerations indicate to us how undeveloped are our politics, how crude and primitive our education, how passive and inert our morals. *The causes remain which brought philosophy into existence as an attempt to find an intelligent substitute for blind custom and*

blind impulse as guides to life and conduct." (*Reconstruction in Philosophy*, p. 123. Italics mine.)

Science, unallied with a program of ethical idealism, threatens to wipe out civilization, through its perfecting of the efficiency of instruments and destruction. We hear rumors of scientists at work, in every world power, at the problems of chemical and even bacteriological warfare. Explosives have been developed of late that make the explosives used in the last war seem like children's firecrackers. The next war will be fought from the air, and will be directed against the civilian populations as well as against the armed forces at the battle-front. With modern electrical, chemical, and bacteriological methods of destruction civilization itself will be jeopardized if another world-war occurs. Perhaps the human race will render itself extinct through its useful slave, science, rising up and slaying its master.

Would it not be better, for themselves and society, for these men of science, devoting their energies to the means of destroying mankind's painfully, slowly, and laboriously acquired civilization, to hold some religious, philosophical, or ethical view that would restrain them from that diabolical work, even if that view could not be empirically proved, than to be free from all dictates of conscience whatever through an ethically indifference agnosticism? Even a false theory that furnishes a basis for ethically responsible conduct is certainly more conducive to the welfare of society than the lack of any guiding theory whatever.

True science, as distinguished from the pseudo-science of certain commercial scribblers, makes no claim that its results represent absolute truth. A scientific "truth" is merely a concept abstracted from the perceptual flux, to be used as an instrument in the control of our environment. When a more efficient instrument is found, the old "truth" is either discarded or revised. The results of science, like the programs of a certain vaudeville theatre that I was once dragged into by a friend, well-meaning, but in need of philosophy, are "subject to change without notice."

If then the results of science are useful to us even if they do not represent absolute truth, we can say the same of a philosophy of life. If a scientific theory is "true" because of its useful applications, we may say with equal justification that a particular philosophy of life is "true" because of its useful applications in the conduct

of life. The argument that absolute truth is unknowable does not invalidate philosophy anymore than it invalidates science. Philosophy, when approached and studied in the right spirit, is as practical as science.

Decriers of philosophy are fond of alluding to the clash between rival schools of philosophy. It is declared that the points on which all philosophers are agreed would not fill a page of a pocket notebook.

As to the matter of disagreement among philosophers, the very nature of the problems investigated by philosophy precludes unanimous results. Furthermore, philosophy does the pioneer work in fields which are not yet ready for the exact methods of the special sciences. A great part of the work of philosophy consists of such pre-scientific work. As soon as a field of research has reached the point where scientific exactness is possible, that field automatically ceases to be philosophy and becomes science. Thus science claims credit for a great deal of accomplishment that really belong to philosophy.

Again, scientists are not as universally agreed upon their results as is commonly supposed. Take the theory of evolution for example. While practically all scientists now accept the bare fact of evolution, we find at least five conflicting theories of the *modus operandi* of evolution. Lamarck, Darwin, Weismann, Eimer, and De Vries have each given us a distinct theory of descent. The theory of natural selection unaided by the inheritance of acquired characters, of Weismann, has been losing ground of late before a revival of Lamarckianism. Thus certain questions within the field of science are as far from final solution as the questions of philosophy.

While there is no complete agreement among philosophers, still, tendencies originated by certain philosophers persist and reappear in the works of all later philosophers, often many centuries later. Thus the Heraclitan idea of the harmony of opposites has played its part in the philosophy of Hegel, twenty-two centuries later. Even today a new philosophical tendency-movement, called the New Heraclitanism, is under way.

Although, let us say Plato's philosophy as a whole is no longer adequate, many of his views continue to play a role in modern thought. Plato believed in a supernal, perfect, eternal world of Ideas, divine models of things from which earthly things derive their imperfect, material existence. While we no longer believe in

the actual existence of the Ideas, the conception of them is still useful to us, as ideals towards which we may direct our efforts.

Anaximander and Empedocles, the Ancient Greek philosophers, had evolution theories. Anaximander taught that all things had their origin in a fiery vapor, the *apeiron*; that living creatures came from the slime; and that man evolved from water creatures. We have here the modern naturalistic view of the world.

Empedocles taught a doctrine amazingly like the theory of natural selection. According to this fertile imagination, four simple elements, air, water, earth, and fire, through the operation of two fundamental forces, love and hate, were sufficient to explain the eternal flux of integration and disintegration. A vast number of combinations of the simple elements were formed in the past, but only the more stable ones, those that could successfully survive the conditions of the environment, remained. Such monstrosities as headless men, lions with woman's heads, had come into existence from time to time, only to perish in the struggle for life. We have here a very fanciful, but unmistakable statement of the theory of natural selection.

The idea of evolution thus was not an innovation of Lamarck, or Goethe, or Darwin, but had been floating as a seed through the ages, finally to land on the favorable soil of the nineteenth century. Some of the philosophical speculations of twenty-five centuries ago thus still appear in our science and philosophy, though with a new significance. The statement that nothing is ever accomplished in philosophy is obviously false.

Man in his early attempts at philosophizing is naive, and sees greater simplicity and order in Nature than there really is. As philosophy advances, the simple, unqualified formulae of the pioneers become antiquated and displaced by more subtle and elaborate interpretations. Greater and greater becomes the range of phenomena, the extent of the known universe, the discordant elements to be resolved to a more and more embracing formula. As science and human observation, aided by increasingly effective instrumental apparatus, expand, more and more things undreamt of in philosophy—that is, the current philosophy—arise, and philosophy must expand to take account of the new factors.

Philosophy, like science, is thus constantly correcting and revising itself, so that the lack of permanent achievement in philosophy is more apparent than real.

The quest of truth is like Achilles' pursuit of the tortoise in the celebrated paradox of Eleatic Zeno; strive as we may, the ultimate truth can never be attained, for like the tortoise, it is more and more nearly reached, but never over-taken.

The world-view, or *Weltanschauung*, of any particular age may be likened unto a musical chord with discordant elements included, a chord of the seventh or the ninth, as it were. With further progress of philosophy these discordant elements resolve into a consonance, but in the meanwhile new discordant elements have entered, through the discovery of new problems, to be resolved in the next step forward. Thus the progression of chords never comes to a final concord, but is rather a sequence of discords, such as the sequences of chords of the seventh or the ninth which we often hear in music, each chord ever resolving into the chord following.

The end of the sequence, the final philosophy, would be the contemplation of the perfect, concluding tonic chord of the cosmic symphony, the evolution of the cosmos brought to its final, infinitely distant ideal; the world process regarded *sub specie aeternitatis*, past, present, and future blended into one glorious, diaphanous, everlasting present moment, in the consciousness of some all-knowing mind.