

THE PSYCHOLOGY OF THOMAS AQUINAS

PROBLEM 1

1. The Acquisition of Knowledge

There are two ways of acquiring knowledge. One is to study an existing philosophic system, gain as profound an understanding of it as possible, and keep referring back to the data of actual experience to see how the metaphysical system is verified. The other method is to study individual facts, analyze their components, fit them in with other related phenomena, and then turn to philosophy in order to discover some sort of framework upon which the facts may be hung, or some general principle by which they may be interpreted.

The first is the easiest and therefore the usual method. Its drawback lies in its very smoothness. The concrete datum peeps up slyly at the student but its presence is hardly felt. In any case he knows the answer to it even before it has put in an appearance. For him it has no element of terror or uncertainty. If he follows this route to knowledge he may become an excellent student of philosophy but he will never be a philosopher. The second method has been pursued only by the few. Of those who try their skill at it some fall into the slough of despond and eventually give up the task. But some emerge with their minds established in a definite point of view; and these, whether by right or wrong conclusions, are at least thinkers, and at heart philosophers. Their doubts are their own and their philosophy is the real reaction of their minds to the problems of the world in which they find themselves.

Thomas Aquinas belongs to this select second group. (1) *

* Numbers in parentheses refer to references at end of each problem.

He began with reality. In this respect he is like any other scientist. Further, his grip on reality was vigorous and strong. While he made mistakes it will be found that the limitations of his inductive ability were extrinsic rather than personal. Science itself is not a perfect instrument of knowledge. By its structure it is essentially contingent, since its range of actual observation is very circumscribed. This becomes particularly obvious when one considers the relatively small number of facts from which its inferences are drawn. Aquinas recognized all this. (2) Referring to some of the astronomical teaching that was current in his day he says: "Theories may seem to explain facts; yet it does not follow that such explanations are necessarily true, for it is at least probable that some other account may be made of the facts." (3) Probability, then, appears to be an inherent trait of positive science. "Proof" says Eddington, "is an idol before whom the pure mathematician tortures himself. In physics we are generally content to sacrifice before the lesser shrine of *Plausibility*. . . . In science we sometimes have convictions as to the right solution of a problem which we cherish but cannot justify." (4)

What we wish to emphasize here is not the incidence of error in Aquinas, since he had no direct control over this; but rather his *fundamental reverence for fact*. Albert the Great undoubtedly had a great deal to do with the development of this attitude, for Albert's genius was outstandingly scientific. (5) He was a real master of inductive fact, practised in observation and systematic analysis, and the best-informed scholar of his time. It was Albert who said: "The aim of natural science is not simply to accept the statements of others, but to study the laws that are at work in nature." (6) And again, referring to the correct procedure for one engaged in botanical science: "Experiment is the only safe guide in such investigations." (7) Now Aquinas was the keenest mind in Albert's whole student

crop. Not that he made any definite contributions toward the advancement of natural science. In this respect he was far behind his tutor. But he did carry away from Albert's lectures a new insight into the value of facts; and it became his conviction that the lowliest and most inconsequential-looking datum will often lead to the grasping of the highest truth.

"That for him the process was logical and not biological, was concerned with philosophy rather than science, does not alter the essential idea; that he believed in beginning at the bottom of the ladder." (8) Thus it was from a background that was thoroughly scientific, created for him by one of the leading experimentalists of his day, that Aquinas eventually constructed his superb philosophic structure. We can offer no better example of the influence of his training in science on his metaphysics than Aquinas's methodology. It was characteristic of him as a philosopher to be always willing to accept an opponent's point of view, if only for the sake of argument and discussion. It was the attitude of *critical doubt*. Aristotle once remarked: "We should enter the chambers of knowledge through the portals of doubt . . . by making preliminary examination of the difficulties to be solved." (9) In his explanatory notes on this passage Aquinas says: "If a person is tied up and wants to free himself the first thing he does is to examine his bonds carefully in order to determine what kind of knot is holding him. Similarly, if one wants to get to the bottom of a problem he should first consider its attendant difficulties and their causes. . . . Trying to reach the truth of a matter without formulating a critical doubt is like going on a journey without an objective. . . . If one arrives at a specific goal it is only by the faintest sort of chance. . . . Under analogous circumstances a person may be in quest of the truth and not know when he has reached it. . . . If then one really wants to get at the solution of a problem it is neces-

sary to sift judiciously all the evidences presented by those who hold opponent views." (10)

2. *The Psychological System of Thomas Aquinas*

I. METHOD

Aquinas wrote no formal textbook on the subject of psychology. The fact is that his growth in the science of mind is slow and obscure, and is part of a larger historical development which emerges out of the general trends of his education. This makes it impossible for us to trace it. There would be too much non-psychological matter to cover, for one thing; besides, the motives behind his enormous output of books on various topics are too diversified. The only resource left is to piece together, from works widely separated in time and subject-matter, the *system* that integrates his views on mental science and makes them consistent.

The first concern of the new student in psychology is, or should be, the *method* of the system that he is to follow. The fundamental law of method for all knowledge and therefore for every science, including psychology, is progression from immediate fact to the law or principle behind the fact. (11) We start with analysis or the stage of invention, and go up step by step in the scale of generalized knowledge. Our goal of course is synthesis, and our arrival there is simultaneous with the emergence of some ultimate principle that explains the facts with which we started at the same time that it provides a clue to the interpretation of other facts as yet unknown to us. Once the synthetic principle is achieved we make it a *point of departure* for other and more particular inferences. For example: the antithesis of potency and act was evolved in the mind of Aristotle from his observations on physical change going on in nature. Once the idea became clear it was possible to apply it

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reflexly to other situations and events not connected with physical change. To repeat, then, the analytic method represents a gradual ascent on the ladder of generalized knowledge, while the synthetic method reverses the process—once the law or principle has been validly proclaimed. (12) Positive science today has quite naturally appropriated the first method while philosophy finds a predilection for the second. The fact of the matter is that there are constant interchanges on the part of each.

Beginning with inductive fact, Aquinas arrives at a system. His method is really a combination of analysis and synthesis. In his day science and philosophy were not such disparate mental disciplines as they are made out to be today. His psychology is a *totum organicum*. At its nucleus there is always a core of solid fact, but its perimeter is essentially metaphysical. We might think of it, in terms of Aristotle's hylomorphic theory, as structuralized out of two main elements, one material or factual, taken over today mainly by the scientist; the other formal or interpretative, representing the province of the philosopher. For Aquinas there is no separation of these elements, just as, in the ultimate structure of physical realities, there is no divorce of matter and form. His psychology, like all his *philosophia naturalis*, is a combination of the science of the contingent with the science of the necessary, of observed fact with metaphysical inference. (13)

What we have said up to this point touches on general method, and is intended to show how mind ordinarily develops in any branch of learning. But for Aquinas, as perhaps for the greater number of our modern psychologists, there is a special technique which is applicable to the science of mind alone. It is called *introspection*. Aquinas believed it to be the fundamental way of getting at mental data. If he went to outside sources for information, it was chiefly to check up on introspectable

facts. It is rather interesting to observe that most of his mistakes are made on records of phenomena that lay outside the introspective court of appeal. He taught, for example, that direct contact is impossible between two solid bodies, such as the hand and the pencil which it holds; that, if water or air is not interposed between the superficies of an organ and its stimulus it is impossible to arouse a tactual sensation. (14) But where self-analysis was involved his writings are extraordinarily free of error. The point is worthy of our attention because so much of the current discussion in psychology hinges around the value of introspection as a method of research. Is it a legitimate source of information for the psychologist? The answer of course depends upon its scientific use. When employed like any other reliable tool of research it may turn out to be our most fruitful channel of knowledge. Külpe says: "Experiment can no more take the place of introspection in psychology than it can that of observation in physics. It is only able, as it is only intended, to supplement the previous method, by filling up the gaps which remain when introspection is employed alone, by checking its description, and by making it generally more reliable." (15) Today, more than at any other time since the birth of psychology as a positive science, we hear of the need for a careful, systematic, and controlled introspection. To Wundt *Selbstbeobachtung* simply meant having an experience and later describing it. (16) The credit is usually given to Külpe and his Würzburg school, for having made the first scientific study of method in psychology. (17) In the hands of skilled investigators introspection means a special attitude, the adoption of which enables the observer to study his experience in detail as though under a microscope. The whole conscious reaction is recorded methodically, and if necessary is divided into fractionized periods. The same tasks are performed over and over, so that the account may be cor-

rected and amplified. Sometimes the subject is asked to direct his attention to special points, but more often he is left to guide his own conscious processes without preconceived notions of what he is expected to observe. In the laboratories of men like Lindworsky and Ach, introspective analysis has reached a high degree of perfection.

What are we to say of Aquinas's method of introspection? If we are to judge by the records he has left, he must have gone about it in systematic fashion. Unquestionably there were perplexities. First he had to judge, memorize, feel, or whatever his problem called for; and then immediately reconsult his consciousness in order to determine just *how* he did these things. It is the double task that every introspectionist must impose upon himself. Under the variable circumstances of time and place one can never be sure of exactly what he is going to observe or whether he is actually examining the same datum in repeated trials. This constitutes the special difficulty for all introspectionists, from Aristotle down to Ach. Another stumbling block that must be guarded against is an exaggerated use of what is called the laboratory attitude, in which experience, as it is given in everyday observation, is discarded in favor of corrected experience. A great deal may be said for the view of the Gestaltists that the naïve experience of common sense has a right to a hearing in psychology. (18) What Aquinas very likely did, just as the modern introspectionist does, was to repeat his observations again and again. In due course certain common features of the mental processes involved would emerge, and these could be repeated and inspected. It still remains true for the modern technician, as for Aquinas, that the total content of any single given experience can seldom if ever be taken to be cognized adequately—a fact due to the law of limitation of mental energy. As Aveling says: "We are directly aware of an infinitesimal part of our external sensory

experience at any given moment. Our span of consciousness is likewise limited for any aspect of experience whatever. Very many observations, accordingly, may be necessary to disentangle the phenomena of the simplest mental process." (19) But whatever his actual procedure, the essential reliability of Aquinas's method is demonstrated repeatedly by the large measure of agreement between his records of introspectable data and the reports given by modern experimenters.

ii. CONTENT

The ideal system of psychology is one which envisages the entire field of mental science as a consistent and unified whole. The most important single factor in it is the position from which it surveys the concrete data that fall within its range, or the principle that gives a coherent pattern to such data. It is not possible for us, at this juncture, to give a complete account of the actual *content* of Aquinas's system of psychology; but it is possible to say something of the special point of view around which he organizes all his facts. It may be just as well to mention here elsewhere that no completely perfect system of mental science exists, no closed and finished arrangement of thought which has been worked out consistently to the last detail. On the contrary, psychology is like any other enterprise of the human intellect, which means that it still has its share of confusions, entanglements, and misunderstandings. Precisely because of these things, we believe that a reconsideration of Aquinas's point of view will be helpful. To get at the essential core of his system it is necessary to step outside the immediate bounds of psychology into the wider reaches of metaphysics. Even the most cursory examination of Thomistic philosophy shows that the single unifying principle which knits together all its special departments is the Aristotelian antithesis of *potency* and *act*. Briefly it amounts to this:

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that a thing which is in a state of potency must persist in that condition until it is moved by something which is in a state of act. Thus it is possible for cold water to become hot, but it is impossible that it should do so unless it is moved by something that is actually hot. It is obvious that this conclusion is immediately inferred from the real distinction between potency and act. The principle may be formulated in a more explicit way by saying that *potency, which is really distinct from act, can never become act unless it is reduced to act by something which is in act.* (20) Here is the basic idea of Aquinas's whole system. Let us see how it works out in his psychology. First there is his teaching on the unity of the human composite. The soul is the act or *substantial form* of the body, and its only form. *Prima materia* is pure potency, deriving from substantial form all that makes it, in the case of man, a body, a living body, and a human body. Again, the powers of intellect and will are really distinct from the soul itself, since they are perfections of it. It further follows not only that every capacity that we possess is really differentiated from its object, but also that it is essentially *passive* in relation to that object. If this is the nature of intellect as an instrument of knowledge it means that the mind does not create the object of thought, but rather that the object is the fundamental reason for our having any thoughts at all. Similarly, if will is essentially a potential factor as an instrument of free choice it means that we are ultimately moved to make our decisions by something which is in act, since will is in potency before it chooses. Of course only the Prime Mover, which is Omnipotence itself, can act on will without destroying its liberty. Any conclusions other than these would jeopardize the entire system of Aquinas, and all of them emerge from his acceptance of the real distinction between potency and act. Does such a system have any interpretative value for the factual side of mental science? The

answer is best discovered by giving it positive trial. That it does possess such a value may be surmised from the increasingly large number of psychologists who are ready and willing to hear what Aquinas has to say about mental life and its ultimates. Professor G. S. Brett represents a growing attitude when he states: "In its own field psychology can progress 'without a soul,' but by so doing it will limit its outlook and sooner or later the problem of universals, of 'mind as pure act,' and other aspects of 'rational Psychology' will discover for themselves a new status and redress the balance." (21)

3. *The Relation of Aquinas to Aristotle*

The roots of the entire Thomistic system may be traced to Aristotle. Aquinas's debt to the Stagyrte is unquestionable. If Albert tutored him in the method of analysis, it was Aristotle who showed him the beauty of philosophic synthesis and opened up his vision to the limitless stretches of metaphysical thought. It is rather noteworthy that for the greatest of the Peripatetics, as for the greatest of the Schoolmen, the immediate impulse to synthesize arose from close contact with men who were professionally scientists. Aristotle, like Aquinas, was surrounded in his early life by students of natural science. It is a matter of historical record that medicine was a traditional calling with the family of the Stagyrte. Such factors simultaneously created both a factual background and a strong urge to unify the large masses of inductive data which both these scholars had accumulated from experience and education. But Aquinas learned more than method from Aristotle. The content of his system is also essentially Aristotelian. Indeed there are critics who say that Aquinas did little more than get in tow with the general currents of the Stagyrte's thought. Men who make statements of this sort cannot be well acquainted with Aquinas's history or with the substance of his

writings. When the matter is sifted down it will be found that the true reason for his acceptance of the Aristotelian system was neither its authority nor its tradition, but, as Gillet points out, "the incontestable value of its experiential method." (22) This was particularly the case with his psychology, where such a method has more immediate grounds for application.

Whenever the teachings of Aristotle appeared to Aquinas as true records of experience verified by his own critical observations, they were accepted. Certainly this is the highest motive that any thinker can have for intellectual surrender. As in all metabolic processes, so here in the course of mental assimilation, some things were rejected. The sanction of Aristotle never became a refuge of error. One of the very few instances where Aquinas shows some impatience at his critics is found in a polemical essay called *De Unitate Intellectus contra Averroistas Parisienses*. (23) Siger of Brabant, himself a great commentator on the philosophy of Aristotle, had remarked that perhaps Aquinas's exegesis of the Stagyrte's text was wrong; to which Aquinas replied, as plainly as could be told, that the real issue was not with what Aristotle taught, but with what is true. If his critics could succeed in showing that their own exegesis of the Stagyrte was the correct one, that would be so much the worse for Aristotle. The fact is that Aquinas took the materials for his system from whatever source he could get them, so far as they lay open to him, and what he constructed was a coherent eclecticism welded into unity by the presence throughout its details of a single great ruling principle which he had won by permanent hard thinking and held with the clearest consciousness of its implications. His title to originality, therefore, is a real one. As part of his rational system the psychology of Aquinas represents a faithful replica of his own experience; and it can be shown beyond any doubt that he made a real

effort to check all his theories by reference to concrete reality. (24)

4. *The Relation of Aquinas to Modern Psychology*

Perhaps it will come as a surprise to modern investigators that the results of their researches fit so well into the traditional system of psychology; but men like Wilhelm Wundt, who have thought about the matter, are quite willing to concede the satisfactoriness of a metaphysics like that of Aristotle and Aquinas. "The products of my labors" says Wundt, "do not square with the materialistic hypothesis nor with the dualistic theories of Plato or Descartes. It is only the animism of Aristotle, in which psychology is combined with biology, that issues as a plausible metaphysical conclusion from experimental psychology." (25)

Furthermore, Aquinas has his own special theories that recommend themselves to every thoughtful student. In the settlement of the meaning of such problems as intelligence, perception, emotional orexis, volition, in fact with all the major questions of psychology, his point of view possesses a serious claim to be heard along with the other current expressions of psychological theory. (26) We do not promise an answer to every difficulty. There are some topics that Aquinas did not touch on, and it would be unfair to him to make his teachings solve every riddle that the modern student proposes. Many of these questions have been formulated only in our own times, and we must guard against the unconscious though quite natural impulse to alter the meaning of a problem as Aquinas stated it, "to coax his text in the direction requisite for adapting it to new problems." (27) To do so would be to endanger the equilibrium of his whole system. Even apart from the theoretic values that attach to his work as an original investigator, it is curious to note the actual reappearance in cur-

rent psychology of many motifs that were strong factors in the success of Aquinas's teaching. This reversal to traditional standards in no way detracts from the credit that is due to those who have rediscovered such knowledge and placed it at the disposal of modern scholars. In fact it has several distinct advantages. On the one hand, it may be taken as a sign of renewed historical interest in things that are really worth the revival; on the other, it furnishes us with criteria for distinguishing things of greater value from those of lesser worth. (28)

The great mills of scientific research have been grinding steadily since the time of Wundt and James. Psychology has become sectarian, and each school has contributed something to our knowledge. But the whole field needs to be sifted down and sorted. A synthesis will come eventually when the facts and theories of the several systems are related into the *whole* of mental science. Perhaps it will be a hand guided by the genius of an Aristotle or a Thomas Aquinas that will eventually turn the lock, and "opening the doors, let the light of day into the dark chambers of modern thought." (29)

SUGGESTED READINGS

- Aquinas, T. *Summa Theologica*. Translated by the English Dominicans. London: Burns Oates and Washbourne, part I, questions 75-89, revised and re-edited, 1922; part I-IV, questions 22-48, 2nd edition, 1927.
- Contra Gentiles*. Trans. by the English Dominicans. London: Burns Oates and Washbourne, 1923; book II, chapters 56-90.
- Quarantiones Disputatae*. (a) de Potentia Dei. Trans. by the English Dominicans. London: Burns Oates and Washbourne, 1932, book I, question 3; (b) de Anima; (c) de Veritate; (d) de Malo.
- In Aristotelis Stagiritae Libros Nonaullas Commentariorum*. (a) de Anima; (b) de Sensu et Sensato; (c) de Memoria et Reminiscentia.
- Opuscula Varia*, opusculum XI, de Potentia Animae.

NOTE: The above works proved to be the most valuable portions of Aquinas's writings for our present study.

Gilson, E. *The Philosophy of St. Thomas Aquinas*. Trans. by E. Bullough. Cambridge, England: Heffer, 2nd edition 1929. Pp. xv-372.

Graham, M. *Thomas Aquinas*. Trans. by V. Michel. N. Y.: Longmans, Green, 1928. Pp. ix-191.

Mure, G. R. G. *Aristotle*. N. Y.: Oxford University Press, 1932. Pp. xi-282.

Schwertner, T. M. *St. Albert the Great*. Milwaukee: Bruce, 1932. Pp. xxx-375.

REFERENCES

- (1) Thomas Aquinas was born at the end of 1224 or the beginning of 1225. He entered the Dominican order in 1244, studied under Albert the Great both at Paris and Cologne, began his teaching career at Paris in 1252 where he continued his lectures until 1259. The greater part of the next decade was spent in Italy. His second sojourn in Paris, from 1268 to 1272, marks the period of highest scientific achievement in the life of Aquinas. He died March 7th, 1274.
- (2) Aquinas, T. *In Librum Beati de Trinitate Expositionis*, question vi, article 1.
- (3) Aquinas, T. *In Aristotelis Stagiritae Libros Nonaetos Commentaria, de Caelo et Mundo*, book ii, lecture 17: "Licet enim talibus suppositionibus factis appareant solvere, non tamen oportet dicere has suppositiones esse veras; quia forte secundum aliquem alium modum veritatem ab hominibus comprehensum, apparentia circa stellas salvatur."
- (4) Eddington, A. S. *The Nature of the Physical World*. N. Y.: Macmillan; Cambridge, Eng., at the University Press: 1928, p. 337.
- (5) Albert the Great was born in 1206 and entered the Dominican order in 1223. He taught at Paris and Cologne between the years 1245 and 1254, became bishop of Ratisbon in 1260, resigned this office two years later, and took up his professional work again until forced to give it up through the infirmities of old age. He died at Cologne, November 15th, 1280.
- (6) Albertus Magnus, *Metaphisica*, book ii, tract ii, chapter 1: "Scientiae enim naturalis non est simpliciter narrata accipere, sed in rebus naturalibus inquirere causas."
- (7) Albertus Magnus, *Parva Naturalia, de Vegetabilibus*, book vi, tract i, chapter 1: "Experimentum enim solum certificat in talibus, eo quod tam de particularibus naturis simile haberi non potest."
- (8) Chesterton, G. K. *St. Thomas Aquinas*. N. Y.: Sheed and Ward, 1933, p. 99.
- (9) Silvester Maurus, *Aristotelis Opera Omnia*, edited by F. Ehrle. Paris, Lethielleux, 1886, volume iv, *Metaphysicorum*, book iii, lecture 1.

- (10) Aquinas, T. *In Aristotelis Stagiritae Libros Nonaetos Commentaria, Metaphysicorum*, book iii, lecture 1: "Sicut ille qui vult solvere vinculum corporale, oportet quod prius inspiciat vinculum et modum ligationis, ita ille qui vult solvere dubitationem, oportet quod prius speculetur omnes difficultates et eorum causas. . . . Ille qui vult inquirere veritatem non considerando prius dubitationem, assimulantur illis qui nesciunt quo vadant. . . . Ille qui nescit quo vadat, non potest directe ire, nisi forte a casu. . . . Ita etiam quando aliquis non praecognoscit dubitationem, cuius solutio est finis inquisitionis, non potest scire quando inventi veritatem quaesitam, et quando non. . . . Sicut autem in iudicis nullus potest iudicare nisi audiat rationes utriusque partis, ita necesse est eum qui debet audire philosophiam, melius se habere in iudicando si audierit omnes quasi adversariorum dubitantium."
- (11) In an *Opusculum* called *de Modo Studendi*, Aquinas says: "Quia quaesisti a me quomodo incedere in thesauro scientiae acquirendo, super hoc a me trahitur consilium ut per rivulos, et non statim per mare, elegas introire, quia per factia ad difficulta, oportet pervenire."
- (12) Garrigou-Lagrange, P. R. *De Methodo Sancti Thomae*. Romae: ex Schola Typographica "Pio X." 1928, pp. 19 ff.
- (13) Bandus, R. G. *Contemporary Philosophy and Thomistic Principles*. Milwaukee: Bruce, 1932, p. 103.
- (14) Aquinas, T. *In Aristotelis Stagiritae Libros Nonaetos Commentaria, de Anima*, book ii, lecture 23.
- (15) Külpe, O. *Outlines of Psychology*. Trans. by E. B. Titchener. London: Sonnenschein; N. Y.: Macmillan, 1895, p. 10.
- (16) Wundt, W. *Outlines of Psychology*. Trans. by C. H. Judd. Leipzig: Engelmann, 1897. Introduction, section 3.
- (17) Külpe, O. *Op. cit.* Introduction, section 2.
- (18) Köhler, W. *Gestalt Psychology*. N. Y.: Liveright, 1929, chapter i.
- (19) Aveling, F. Emotion, Conation, and Will. *Feelings and Emotions*, edited by C. Murchison. Worcester, Mass.: Clark University Press, 1928, p. 52.
- (20) Cf. Aquinas's *Summa Theologiae*, part i, question 2, article 3: "Omne autem quod movetur, ab alio movetur; nihil enim movetur, nisi secundum quod est in potentia ad illud ad quod movetur. Movet autem aliquid secundum quod est actu; movere enim nihil aliud est quam educere aliquid de potentia in actum."
- (21) Letter of G. S. Brett to J. S. Zyzanski, quoted in *Present-Day Thinkers and the New Scholasticism*. St. Louis: Herder, 1926, p. 90.
- (22) Gillet, M. S. La méthode philosophique de S. Thomas et l'expérience. *Angelicum*, April-June, 1930, pp. 149-50.
- (23) The rather extraordinary outburst of Aquinas occurs at the end

PROBLEM 2

THE NOTION OF GENERAL PSYCHOLOGY

1. *Scientific and Philosophic Attitudes in Psychology*

As a codified body of knowledge philosophy has a strict title to the name of science. But it seems that we are quite commonly agreed today to use the term *science* in the restricted sense of *positive science*; and it is with this limitation in mind that we make certain distinctions between what are called scientific and philosophic modes of thought.

Science confines itself, as rigorously as possible, to the facts of observation and to the fewest and simplest hypotheses, theories, and laws to be derived from these facts. When a scientist hypothesizes, he makes a provisional conjecture as to the cause of certain phenomena. If his conjecture is verified by application to other and cognate phenomena it is raised to the rank of a theory. Should such an explanation, after intensive testing, prove invariable under all given conditions, it becomes a law. From beginning to end of the whole procedure the scientist strives to maintain a strictly objective attitude, studying a wide range of events in order to determine the factors that control them, but never attempting to assign more than the *proximate* reasons for the existence and operation of any particular law. What science is interested in is the cause that immediately antecedes a given effect. Philosophy, on the other hand, is more speculative in character. Its avowed purpose is to secure a *Weltanschauung*. Not limiting itself to the area of observed facts, it goes beyond them with the intent of evolving a satisfactory system in which the sharply circumscribed and often incomplete data, hypotheses, and theories