

return. It is not as if the modern period comes to be seen as something to be simply erased. We are not merely to pick up where philosophy left off before the birth of Descartes. There was something wrong with the Aristotelian tradition in medieval Europe which led to its rejection. The rejection now, however, appears to have been somewhat of an overreaction. Many valuable elements in the tradition were thrown out along with the parts which needed to be excised. Many contemporary philosophers appear now to be engaged in the work of reexamining the Aristotelian tradition with an eye out for discarded bits which may suggest useful approaches to contemporary problems, but a discerning eye is required for this work and a great deal of creativity. In epistemology, for example, Aristotelian foundationalism is to be rejected for its insistence on certain and unrevisable foundations. This much is the lesson of the growth and development of the natural sciences over the past five hundred years. Nevertheless, the lack of a sharp dichotomy between the subjective and the objective, the teleological explanations, the externalism and naturalism are all aspects of Aristotelian thought which are highly suggestive of lines of thought relevant to contemporary problems of epistemology, and we can expect these lines to be explored more fully by philosophers in years to come.

In view of these developments, Islamic philosophy appears as an unexplored branch of the Aristotelian tradition. A rereading of Islamic philosophy with an awareness of the problems and shortcomings of contemporary Western epistemology and the ways in which it is reclaiming some of its lost Aristotelian heritage may also help to suggest new lines for the revival and further advancement of contemporary philosophy that draws upon the Islamic tradition, God willing.

Quine, Plantinga claims that skepticism is to be dismissed rather than proven false, but Plantinga holds that this dismissal is only appropriate for the traditional theist, and concludes that “naturalistic epistemology flourishes best in the garden of supernaturalistic metaphysics.”¹

Prospects and Reflections

Anyone who is familiar with the philosophical literature of the past fifteen years cannot fail to be struck by the unexpected resurgence of Aristotelian thought. In metaphysics, Aristotelian essentialism is discussed as a serious alternative to more nominalistic philosophies.² In ethics there has been an unprecedented display of interest in Aristotelian theories of the virtues and moral psychology.³ In action theory, an Aristotelian approach to practical reasoning has recently been defended.⁴ In political philosophy, communitarian thinkers acknowledge the Aristotelian origins of their ideas.⁵ And finally, as we have seen, in epistemology too, the internalism characteristic of the modern philosophers, whether rationalists or empiricists, is being overturned by a trend toward a naturalized epistemology more in keeping with the Aristotelian and medieval traditions. Of course, the return to Aristotelian themes is not simply a

¹. Alvin Plantinga, *Warrant and Proper Function* (New York: Oxford University Press, 1993), p. 237.

². See Baruch Brody, *Identity and Essence* (Princeton: Princeton University Press, 1980).

³. The most important source here is Alisdair MacIntyre, *After Virtue* 2nd ed. (Notre Dame: University of Notre Dame Press, 1984); also see Paul Crittenden, *Learning to be Moral* (Atlantic Highlands: Humanities Press International, 1992) and Stephen D. Hudson, *Human Character and Morality: Reflections from the History of Ideas* (Boston: Routledge & Kegan Paul, 1986).

⁴. Robert Audi, *Practical Reasoning* (London: Routledge, 1991).

⁵. Michael Sandel, *Liberalism and the Limits of Justice* (Cambridge: Cambridge University Press, 1982).

that the value of science must be established on the basis of raw experience and the faculty of reason. It is then demanded that the truths arrived at on this basis should be proven to conform to reality. Quine dismisses the skeptical challenge with the observation that there is no higher standard of truth by which conformity to reality could be judged than that of our currently best theories. We make judgments about truth and falsity only with the aid of a number of other assumptions. There is no sense to the demand that the whole lot of them should be established as true, for this would require us to take a transcendental perspective inconsistent with the human condition. We begin with the assumption that science is by and large correct, and then we seek to make revisions as we go along to improve our predictive and explanatory abilities.¹

These answers, both those of Peirce and Quine, are controversial. They have been elaborated, rejected and defended by various philosophers.² Alvin Plantinga has recently given a religious twist to the discussion. Plantinga argues with the defeat of the Cartesian program in epistemology skepticism poses a real threat, but only to the atheist. For the atheist it must appear as a highly unlikely accident that our rational faculties are reliable. It will be of no use for the theist, on the other hand, to respond to this skepticism by producing an argument for a non-deceiving deity, for the very faculties by which this argument is produced will be under suspicion. Plantinga argues, however, that the theist does not need any argument against skepticism, for the doubt upon which skepticism is based can only take hold under the assumption of atheism. Like Peirce and

¹. See W. V. Quine, *Theories and Things* (Cambridge: Belknap Press, 1981), p. 21ff.

². See H. Putnam, *Reason, Truth and History* (Cambridge: Cambridge University Press, 1981);

B. Stroud, *The Significance of Philosophical Skepticism* (Oxford: Oxford University Press, 1984); and T. Nagel, *The View From Nowhere* (New York: Oxford University Press, 1986).

philosophy with the sort of systematic doubt recommended by Descartes is sheer fantasy:

Philosophers of very diverse stripes propose that philosophy shall take its start from one or another state of mind in which no man, least of all a beginner in philosophy, actually is. One proposes that you shall begin by doubting everything, and says that there is one thing that you cannot doubt, as if doubting were “as easy as lying.” Another proposes that we should begin by observing “the first impressions of sense,” forgetting that our very precepts are the results of cognitive elaboration. But in truth, there is but one state of mind from which you can “set out,” namely, the very state of mind in which you actually find yourself at the time you do “set out”—a state in which you are laden with an immense mass of cognition already formed, of which you cannot divest yourself if you would and who knows whether, if you could, you would not have made all knowledge impossible to yourself?¹

The failure of the foundationalist project does not result in the victory of skepticism because skepticism was never a real contender anyway.

Quine’s rejection of skepticism also begins with the rejection of the Cartesian project. Skepticism only appears as a threat when it is imagined

¹ Charles S. Peirce, “What Pragmatism Is” in *Charles S. Peirce: The Essential Writings*, Edward C. Moore, ed. (New York: Harper & Row, 1972), p. 268.

a naturalized epistemology has been heeded by many, but in many different ways.

One of the ways in which the call for a naturalized epistemology has been heeded may be observed in the recent tendency among epistemologists to favor externalist accounts of warrant or justification. The kind of support which a true belief must have if holding that belief is to constitute an instance of knowledge is now generally admitted to include conditions over which the epistemic subject has no voluntary control and the fulfillment of which are not open to introspection, conditions such as the reliability of the process by which the belief was formed and the proper functioning of the subject's cognitive faculties.¹ With this externalist turn in epistemology, the Cartesian project of establishing all knowledge on a subjective basis is abandoned, and epistemology is returned to something much more like its pre-modern condition in which the findings of the current sciences were employed in the explanation of how the truths of those sciences themselves came to be known. There was no circularity in this, for no attempt was made to prove the soundness of scientific knowledge on the basis of certain truths given by reason and experience.

What then of skepticism? The Cartesian and empiricist projects were originally presented as alternatives to skepticism. If those projects are to be considered failures, are we not left with no defense against skepticism? Two answers have been suggested in the pragmatist tradition by Peirce and Quine.

The answer given by Peirce is that skepticism is only a paper dragon. No one really doubts everything, and to imagine that we can begin

¹. See Alvin Plantinga's *Warrant: The Current Debate* (New York: Oxford University Press, 1993) and *Warrant and Proper Function* (New York: Oxford University Press, 1993).

we observe. One of the most important reasons to concede the revisability of observation reports which has been discussed at great length by philosophers of science is what is called the *theory-laden* character of observation. The basic idea is that the concepts we use to describe our experiences are not neutral with regard to alternative theoretical background beliefs, but are related in a complex way with other sorts of concepts and theories. Controversy about the nature of one's basic beliefs, however, and about their revisability, must not be allowed to obscure the two more important points: (1) that it is often impossible to specify the empirical content of a given statement in isolation from other related statements; and (2) analytic truths together with observation reports are not sufficient to provide a deductive or inductive basis for what is generally considered to be known about the external world, scientific knowledge.

The above remarks provide a brief and oversimplified account of the collapse of modern foundationalism. The account might give the impression that empiricist foundationalism was single-handedly demolished by W. V. Quine. In fact, the defeat of empiricist foundationalism was due to attacks from many sides, attacks by philosophers of science as well as those concerned more generally with the theory of knowledge. It will generally be conceded, however, that Quine has been a leading figure in the battle, although one does not find among his works any discussion of the issues that are of primary concern to contemporary epistemologists: the nature of justification, the structure of sense perception, the definition of knowledge, etc. Quine's influence has been profound, but rather diffuse. His own statements describing his holism, for example, are often rather vague, and have been interpreted along various lines. Likewise his call for

sentences asserted by scientists can only be understood in context. Quine nevertheless continues to think of himself as an empiricist, for he acknowledges the central importance of experience to the acceptance or rejection of theory. Theory is used to explain past experience and to predict future experience, but the failure of a theory with respect to experience does not result in the falsification of a specific element in the theory, but only in the need to modify the whole, where this modification can take various forms. Quine is called a *holist* because he contends that it is theories as wholes that are to be evaluated on the basis of experience, not individual claims.

Inspired by Quine's holism, a number of contemporary epistemologists have proposed coherence theories of justification as alternatives to the earlier foundationalisms. Others have sought to develop new forms of foundationalism in which the basic beliefs would not be limited to those descriptive of experience or analytic truth. These theories, sometimes called 'weak foundationalisms' typically accord no more than *prima facie* justification to the basic beliefs, so that under certain conditions the basic beliefs themselves may be revised. While there is no consensus on the ultimate structure of empirical knowledge, it is generally conceded that the sort of foundationalist approach favored by the modern philosophers cannot be sustained. There is no set of certain truths given by reason and direct experience which can serve to support what we ordinarily claim to know about the external world, let alone the entire structure of contemporary science. Furthermore, the best candidates for the basic beliefs we hold without deriving them from other prior beliefs, beliefs such as that there is a desk in front of me, that I am in Iran, etc., are not held with absolute certainty. We can imagine extremely unlikely situations in which we should think it best to revise our judgments about what we think

When Carnap sought to construct all knowledge of the world on the basis of analytic truth and sense experience, he sought the aid of contextual definitions. It was thought that with the aid of this device empiricism could be salvaged from its own self-criticism. Quine showed that the cause was hopeless. Even such a simple matter as the appearance of a given quality at a specific location in space and time could not be defined, contextually or otherwise, in terms of immediate experiences and the tools of logic and mathematics. Carnap himself eventually admitted defeat.

The lesson Quine drew from all of this was that epistemology should not be conceived as a first philosophy, as the subjective ground for all claims about the external world, as it was considered by so many philosophers from the time of Descartes to the early Carnap. Instead of seeking to prove the validity of science on the basis of reason and experience, Quine contended that epistemology must be *naturalized*, that is, that the findings of the natural sciences themselves should be used to help us understand the nature of knowledge, justification and the growth of science. In this respect Quine's epistemology is more like that of Aristotle than that of Descartes or Locke. Aristotle employed no method of systematic doubt in order to arrive at the axioms of the sciences, but held that the axioms were to be discovered by a dialectical process which itself required familiarity with the science in question. However, while Aristotle thought that the dialectical process would eventually lead to the certain recognition by *nous* of the fundamental principles, for Quine there is no such guarantee that we will ever arrive at certainty.

In place of the foundationalisms of Aristotle, Locke and Carnap, Quine defends a holistic epistemology. Like Wittgenstein, he sees the sentences of the various areas of human inquiry as linked together in networks. The

A significant advance over the theory of ideas found in Locke and Hume was initiated with Bentham's theory of logical fictions. The philosophical method of Locke and Hume, like that of Aristotle, was largely one of conceptual analysis. It was assumed that the meaning of each concept could be analyzed in isolation from all others; that each meaningful concept could be given a definition. To the contrary, Bentham claimed that an adequate explanation of a term could be given by showing how all contexts in which the term is to be used can be paraphrased into antecedently intelligible language. This might be done even when an independent definition of the term cannot be found. Instead of seeing the meaning of each sentence as deriving from the prior independent meanings of its components, the components of sentences are themselves seen as deriving their meanings from the sentences they compose. In the late nineteenth century, Frege celebrated the semantic primacy of sentences and in the early twentieth century Russell gave contextual definition its fullest exploitation in technical logic. The development of the differential calculus in the 19th century also was made possible by the use of contextual definitions, and it is this that inspired Russell.

One of the most striking differences between contemporary epistemology and the epistemologies of the ancient, medieval and modern philosophers is that contemporary epistemology is primarily concerned with the issue of the justification of beliefs, while the earlier thinkers focused their attention on the ways in which concepts are abstracted from their instances. This difference is a reflection of the shift in focus from the idea to the proposition which accompanied the realization of the importance of contextual definition and the irreducible interdependence of the meanings of many of our most important concepts.

Christianity, Carnap's faith was in modern science. Neither faith could be sufficiently supported on the austere basis offered by empiricism. While Hume suggested that Locke's faith could not meet his own evidentialist challenge, Quine argued that the claims of modern science extend way beyond anything that could be constructed from subjective experience and analytic truth. But while Hume's ultimate conclusion about religion appeared to be a form of fideism, if not outright skepticism, Quine did not think of the failure of science to meet the evidentialist challenge as marking some failure of science, rather he saw it as an indication of the inadequacy of empiricist standards of evidence.

Quine's most important attack against empiricism was issued in his widely influential "Two Dogmas of Empiricism", first presented as an address to the American Philosophical Association in 1950.¹ The two dogmas attacked in this essay are reductionism and the analytic/synthetic distinction. For our discussion it is the rejection of reductionism which is most important. The logical empiricists had taught that each meaningful non-analytic statement is equivalent to some logical construct upon terms which refer to immediate experience. This doctrine was one of the hallmarks of the logical positivists and was known as the *verification theory of meaning*. The verification theory thus assumes that there is a way to analyze non-analytic statements which would reveal their empirical contents. The most naive view of the relation between a statement and its confirming experiences is termed by Quine *radical reductionism*, and attributed to Locke and Hume, since they held that every idea must either originate directly in sense experience or else be compounded of such ideas.

¹ Willard Van Orman Quine, *From a Logical Point of View*, 2nd ed. (New York: Harper and Row, 1961), 20-46.

more severe than Locke's. Locke was of the opinion that the empiricist program in epistemology could be used to defend traditional Anglican Christianity from the heretical sects of Puritans which were becoming popular in seventeenth century England, whom Locke called *enthusiasts*. Members of these sects made what seemed to Locke to be wild and extravagant claims about being filled with the Holy Spirit, of being commanded by God to reform Christianity, etc. To Locke, it seemed that such claims lacked any foundation in reason or experience, and so he posed what has become known as *the evidentialist challenge*. It is wrong, Locke claimed, to believe anything without having sufficient evidence for it. He challenged the enthusiasts to support their religious claims with evidence, confident that they would be unable to do so. The tenets of the Church of England, Locke wrote, were adequately well founded on truths of reason, which could establish such basic doctrines as the existence of God, and the testimony of the performance of miracles, on the basis of which other religious doctrines were to be authenticated. The heretics, Locke contended, would not be able to find any such evidence in support of their innovations.

Carnap, on the other hand, sought to employ the same evidentialist challenge as was to be found in Locke, but his target was not merely the Puritans, but religion and metaphysics together in their entirety. Carnap's atheism was more consistent than Locke's Christianity, for Locke's own Anglican faith could not be supported on the empiricist basis he used to challenge the heretics. This became apparent in Hume's writings. Both Carnap and Locke sought to use empiricism as a weapon against what they perceived as unsubstantiated beliefs, confident that their own beliefs could survive the challenge they set. This latter confidence was proved to be unfounded in both cases. While Locke's faith was in Anglican

be treated adverbially, so that the basic claims of experience turn out to be of the form, "I am being appeared to redly."

Subjective certainty is purchased at the price of restricting the class of basic or fundamental truths on the basis of which it is held that all knowledge rests. The basis becomes so narrow in the process that it becomes unable to support the weight of scientific knowledge. Even ordinary physical object claims are not equivalent in meaning to any set of propositions describing subjective experience. The recognition of the irreducibility of physical object propositions to statements descriptive of the phenomenal contents of subjective experience was largely responsible for the abandonment of traditional empiricist epistemology by philosophers of this century, such as W. V. O. Quine.

Naturalized Epistemology

Quine writes from within the empiricist tradition, but as a renegade. He was the foremost student of the most preeminent of the logical empiricists, Rudolf Carnap. Carnap dismissed metaphysics as meaningless nonsense, and sought to reduce all knowledge claims to statements descriptive of subjective states in his monumental *Die Logische Aufbau der Welt*. According to the logical positivists, all knowledge could be divided into two categories: analytic and synthetic. The analytic truths were understood as including logic, mathematics, and all propositions whose truth could be determined by the analysis of the meanings of their components. All other truths, the synthetic truths, were held to be derivable from the analytic truths together with propositions descriptive of one's subjective states, i.e., one's experiences.

The general lines of Carnap's epistemology were thus the same as those of Locke. However, Carnap's epistemology was much more exact, much

justification is thus a deontological concept. One's beliefs are justified when one violates no epistemic obligation by holding them.

Locke's concept of epistemic justification is thus internalist and deontological. It is also foundationalist. The basic beliefs in the system are those given by inner and outer experience. These given beliefs are indubitable, certain, incorrigible and self-evident. They include simple truths of logic and arithmetic, as well as that which is given by the evidence of the senses and memory. These basic beliefs are justified for anyone who has them. They require no support, no argument in their defense, no justification. Other beliefs will be justified when they are inferred from the basic beliefs by acceptable methods, such as syllogistic deduction.

As the empiricist tradition developed, greater attention was paid to the foundational beliefs in the system. Exactly what sort of beliefs are given by experience such that they cannot be doubted, such that they will be certain, such that one who holds such beliefs cannot be mistaken about them? As a first guess, one might suppose that claims such as, "Here is a red book" would be good candidates to serve as foundational beliefs. But we could be mistaken about such beliefs. The lighting could be playing tricks with our eyes so that we make mistakes about the color, confusing red with violet or orange. Then what appears to be a book might really be a box disguised as a book. We have seen such boxes. The empiricist is therefore pushed deeper into his own subjectivity in his quest for certainty. "Here is something which appears to be a red book." It is more difficult to imagine how one might be mistaken about such a claim. But if I am hallucinating, it may be that there is no *thing* which appears to be a red book. This has led Roderick Chisholm to make his famous proposal that appearances are to

course of metaphysical speculations that things might be quite different from the way they appear, or in the course of proposing a non-committal style of life, the moderns used skepticism as a method to uncover certain truth. For Descartes, Locke and the other moderns, there are truths which are given by experience, or by the clearness and distinctness of ideas, and these inner truths may serve as the foundation for all philosophy. Certainty is achieved by attending to various features of subjective experience such as clearness and distinctness in Descartes, or the liveliness and strength of ideas in Hume.

Note how different the approach of the moderns is to that of Aristotle. For Aristotle, the first principles are intuited by *nous* from particulars. Aristotle also claims that the first principles are to be unearthed through a dialectical process. They are considered to be latent elements of our knowledge, within us potentially, to be awakened by experience and dialectic. For the moderns, on the other hand, the first principles are indubitable truths given by subjective experience. For Aristotle, the first principles were principles of descriptive sciences. For the moderns, the first principles were characterized by their subjective characteristics.

For both the ancients and the moderns knowledge occurs when the form in the mind corresponds to that in reality. For the ancients, however, this correspondence is said to occur when the mind comes to be able to grasp the objective form through the faculty of *nous*. For the moderns, on the other hand, one obtains the right to assert that such correspondence obtains when one fulfills certain conditions within one's voluntary control. In this sense, modern epistemology may be called an 'internalist' theory. One is bound by epistemic duties to believe no more than what can be inferred from inner and outer experiences. The concept of epistemic

The most important features of empiricism are stated in Locke's *Essay*. Among his most important innovations were a theory of ideas and a theory of meaning. Locke, as well as Berkeley and Hume, held that we have two kinds of experience: sensation, or external experience, and reflection, or internal experience. These two kinds of experience were held to provide the foundations of all knowledge. Knowledge of necessary truths, such as the truths of logic and mathematics, were held to derive from inner experience, while empirical knowledge of contingent truths was held to derive from outer experience. Hence, the empiricists, like Aristotle, were foundationalists, but the ways in which they thought of the foundations differ. While Aristotle posited a rational faculty, *nous*, capable of recognizing the basic principles of the sciences, the empiricists tended to restrict the truths known by inner experience to those of logic and mathematics. The rest had to be abstracted from outer experience.

One of the most striking differences between modern philosophy and the philosophies of Aristotle and the later peripatetics is the sharp distinction between the objective and the subjective which was made by the modern philosophers. Descartes, Locke, Berkeley and Hume often give the appearance of being in the predicament of trying to dig themselves out of a subjective world to external reality. This is not to say that for the Greeks and medievals there was no subjective/objective dichotomy, for they too wrestled with the problems of skepticism and the contrast between appearance and reality. With the moderns, however, the distinction between inner and outer became overwhelmingly important, with tremendous implications for the future of epistemological thought. In the seventeenth century there was a revival of ancient skepticism which was pursued with an intensity unmatched in the ancient period. For while the ancients discussed the distinction between appearance and reality in the

applications of the universal laws. Axioms of the sciences are necessary and certain, and are discovered through a dialectical process. The focus of philosophical attention is on the analysis of the central concepts of each area of inquiry.

Aristotelian epistemology is *foundationalist*, in the sense that all knowledge is taken to be either basic or derived from that which is basic. It is also *deductivist*: the only way in which knowledge claims can be supported is by syllogistic deduction from basic principles. It is *conceptualist*: the central focus of philosophical investigation is the analysis of fundamental concepts. The objects of perceptual knowledge are things which are grasped through concepts.

Like other major philosophical systems, the Aristotelian methodology has its strengths and weaknesses. Among its strengths are that it provides for a unified conception of the sciences in a hierarchical arrangement, it shows how scientific knowledge is possible and in so doing, offers a rebuttal to skepticism, it makes interesting suggestions about how dialectic can prepare the way to scientific knowledge, and it integrates theories of definition and logic with metaphysics and scientific methodology.

The Aristotelian approach to epistemology was accepted in outline by both Muslim and Christian scholars of the medieval period. In thirteenth century Europe the beginnings of a break with Aristotelian epistemology appeared in the nominalism of William of Ockham and in the work of Roger Bacon. The break was more assertively pronounced in Francis Bacon's attack on scholasticism, the *Novum Organum* (1620), and it finally reached fruition in John Locke's *An Essay Concerning Human Understanding* (1690).

Empiricist Epistemology

we get to know basics; in perception the universal is grasped in the particular by the faculty of rational intuition or *nous*.

One of the most notorious features of Aristotle's philosophy is his failure to 'entertain the possibility of there being *alternative* conceptual schemes of equal validity and applicability. He supposes that the structure of Greek language and thought *is* the structure of reality.'¹ This same sort of arrogance may be found behind the 'ordinary language philosophy' practiced in Oxford during the 1950's, except that English replaced Greek as the conceptual standard. The problem with both forms of conceptual analysis, whether practiced in Athens or at Oxford, is that commonly accepted dogmas tend to be glorified as the dictates of pure reason. An analysis of the way we think is taken to prove all sorts of objective truths about the nature of the cosmos. Aristotelian conceptual analysis is taken to establish that there can be neither a first nor a last change in the universe. Strawson argued that conceptual analysis is sufficient to establish that the world is composed of substances having properties. Between them, Kant argued that space and time had to have an essentially Newtonian structure, again, on the basis of conceptual analysis. In each case it is argued from how we in fact think about things to claims about how things must be in reality. Seldom is a thought given to the possibility that we might think about things differently than we have in the past, despite the fact that such alterations in our conceptual frameworks continue to take place.

Without elaborating a systematic Aristotelian epistemology, a number of features of Aristotle's thinking pertaining to epistemology can be listed. The value of perception, and of experience generally, for science is to lead one to rational insight into universal truths. The method of reasoning in science is syllogistic, proceeding from the axioms to more particular

¹. Ackrill, 113.

All scientific knowledge, according to Aristotle, consists of axioms particular to each of the sciences along with logical truths, definitions and existence claims, as well as that which can be validly deduced from these three sources of knowledge. The word for knowledge used by Aristotle in such discussions is $\epsilon\pi\iota\sigma\tau\epsilon\lambda\gamma$ (*episteme*), and epistemology is the continuation of such discussions through the centuries.

Aristotle held that the logical truths and axioms of any science must be necessary and known with certainty by means of rational intuition, $\mu\omicron\upsilon\sigma\iota\varsigma$ (*nous*). Sometimes he refuses to recognize contingent truths as examples of knowledge, and he reserves the term *episteme* for the necessary and universal laws of the sciences. So far is he from empiricism that he writes, "*Episteme* is not possible through the act of perception."¹ Although Aristotle defines scientific knowledge in terms of deduction and rational intuition, when he himself investigates the basis of any given field of science, he concentrates on the analysis of the most important concepts employed in that area, trying to provide a satisfactory and illuminating conceptual framework rather than premises from which deductions are to be drawn.² Many of his discussions are attempts to isolate, clarify and refine key ideas which are suggested by our ordinary ways of talking and thinking. When he discusses time, for example, he does not conclude with a discovery of the basic premises for a science of time, but with an insightful account of the concept of time and related concepts.³ Rather than providing a method with which to obtain fundamental principles, Aristotle offers a psychological account of how various mental processes lead to the formation of general ideas. It is by induction, he explains, that

¹. Aristotle, *Posterior Analytics*, Bk. I, Ch. 31, 87b 28.

². Cf. J. L. Ackrill, *Aristotle the Philosopher* (Oxford: Oxford University Press, 1981), 108.

³. In *Physics* IV.

Aristotle the hero of the traditional philosophy that would be spread with Alexander's conquests. Even Alexander himself is eulogized in Firdawsi's *Shāhnāmeḥ* and in Nizāmi's *Iskandar Nāmeḥ*, where he is identified with the prophet *Dhê al-Qarnayn* عليه السلام because of his incredibly large ears! Locke, on the other hand, is the antihero of the colonialism of the British Empire, mired in the sensory illusions of his empiricism, and Quine is the incomprehensible representative of U.S. neo-colonialism. Aristotle inherited the divine philosophy of Plato, albeit with certain modifications, which Plato, in turn, learned at the feet of the prophetic figure of Socrates. This divine tradition later became the inheritance of Islamic philosophy. British empiricism, on the other hand, is a Satanic force which denies the truth of anything beyond what is given by the perceptions of the sensory organs. American pragmatism is the child of empiricism, and if anything, even more Satanic, defining reality in terms of its own nefarious purposes. This is another myth, not as widespread as the Western one, although it does represent an attitude that is not too uncommon in the Islamic East.

The Western lie is the myth of steady progress. The Eastern lie is the myth of unremitting corruption. Although we may recognize each myth to be a lie, we should also recognize that there is some truth hidden in each of them, as well. There has indeed been progress in Western thought from Aristotle to Quine; but in the course of this development something important has been lost, too. Both the loss and the gain are bound up with the changes that have taken place in epistemology. In order to understand these changes, a rough outline of the epistemological theories characteristic of our three major periods is needed.

Aristotelian Epistemology

physics requires mastery of the calculus, so the intuitions governing it are not immediately available. Quine, finally, appears to be nearly incomprehensible, couching his arguments in terms drawn from mathematical logic, and Einstein's physics is notoriously difficult to fathom. The contemporary student is trained to view this movement away from the intuitive as due to the very nature of progress. The natural intuitive appeal of classical modes of thought is taken to derive merely from their familiarity. Contemporary theories seem weird, it is believed, only because we have not gotten used to them. Progress requires the abandonment of the old and the adoption of odd innovations. Aristotle claimed that the intuitive principles of his system were certain. Locke denied the certainty of all claims except those firmly supported by logic and empirical evidence. And Quine seems to deny the certainty of all claims absolutely. This is called progress. This is a lie, or a myth commonly accepted and circulated.

Although it is a Western myth, by no means do all Western thinkers accept it, and there are plenty of non-Westerners who have bought into it. The myth of never ending generalized scientific progress extending to morals, politics, the human and social sciences and even religion and the arts is deeply woven into the history of Western science itself. Perhaps its most noticeable expression first appeared with Francis Bacon's *Novum Organum* (1620), but with Hegel the idea of the progressive evolution of history in all areas of human endeavor reached a zenith that has loomed over Western culture ever since, and has only come to be challenged in a fundamental way by postmodernism.

Not only is the oversimplified picture mentioned above an untruth, but it has cultural dimensions which make it especially insufferable, particularly when seen from an Eastern perspective. An Eastern counter-myth makes

issues or to categorize the various positions recent philosophers have taken, it will be useful to begin to become acquainted with contemporary epistemology by contrasting it with earlier periods of inquiry. Oversimplification is needed for the sake of instruction. We begin by telling some lies or half-truths by means of which the listener gains sufficient information to eventually be able to recognize them for what they are, much as students of physics might be told that the laws which govern physical corporeal reality are those formulated by Newton, only later and on this basis to discover the incorrectness of the Newtonian theory.

Let's begin by pretending that the history of epistemology can be neatly divided into three periods: classical, modern and contemporary, each of which may be represented by the caricature of a single philosopher: Aristotle, Locke and Quine, respectively. Each of these philosophers has a theory of knowledge. Each explains the relation between theory and evidence. Each one sees his theory as a reasonable alternative to skepticism. Each claims that experience plays an especially important role in the acquisition of knowledge. The most striking contrast of views will be between those of Aristotle and Quine. Locke represents an intermediate step away from the classical way of thinking and toward the contemporary emulation of the exact scientific mode of argumentation found in Quine's works. Aristotelian thought is formal. Locke's seems somewhat mechanical. Quine's thinking is computational. Each of the three periods also has its own paradigm of science: the classical formal biology of genus and species, Newtonian mechanics, and Einstein's theory of relativity. In each successive period there is a movement away from the intuitive. Aristotle's way of thinking seems the most natural. Locke's method retains some intuitive appeal, as does modern science, but Newtonian

Three Approaches to Epistemology: Classical, Modern and Contemporary

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Contemporary epistemology is one of the most difficult areas of philosophy. The arguments are complex, there is disagreement among the experts about the definitions of key terms, the lines dividing one school of thought from another are vague, the literature is voluminous, there is a confusing array of texts that purport to survey the field, but seem more interested in the defense of their authors own particular views, and so much is being written, that the texts available seem to go out of date rather quickly as new theories gain attention. Furthermore, epistemology overlaps with the philosophy of science, and there are no universally accepted definitions by means of which these subjects can be demarcated. A history of epistemology cannot be written without including many discussions of topics which are usually studied in the philosophy of science, such as the relation between theory and evidence, the nature of observation, theories of confirmation and falsification, and various theories about the structure of evidential support. Rather than try to sort out these