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Sextus Empiricus and Modern Empiricism¹

BY

RODERICK M. CHISHOLM

ALTHOUGH it is difficult to exaggerate the similarities between the philosophical doctrines of contemporary scientific empiricists and those which were expounded by Sextus Empiricus, the Greek physician and sceptic of the third century A. D., Sextus seems to have been neglected by most historians of empiricism. An account of his position may be of some pertinence at the present time, for a striking parallel can be drawn without any distortion. His most significant contributions are: first, the positivistic and behavioristic theory of signs which he opposed to the metaphysical theory of the Stoics; secondly, his discussion of phenomenalism and its relation to common sense claims to knowledge; and, thirdly, his account of the controversy over the principle of extensionality in logic, where the anticipation of contemporary doctrines is perhaps most remarkable.

I

It was primarily the Stoics who drove Sextus to the theory of signs. They had devised their own theory in order to justify their metaphysical speculations and Sextus regarded it as no less pernicious than the speculations themselves. According to this theory, what they termed "indicative signs" enable us to

¹ I am indebted to Professor Raphael Demos for a number of helpful suggestions.

apprehend truths about entities which transcend all possible experience. They held that the objects of these signs are composed of attributes which cannot enter experience and are essentially incapable of empirical description, being “naturally non-evident.” The indicative sign does not

“admit of being observed in conjunction with the thing signified (for the naturally non-evident object is, from the start, imperceptible and therefore cannot be observed along with any of the things apparent), but entirely of its own nature and constitution, all but uttering its voice aloud, it is said to signify that whereof it is indicative.” (ii, 317.)²

The indicative sign is to be contrasted with the “commemorative” or “suggestive” sign, which functions semiotically because it has previously been experienced in conjunction with its object. Consequently, the object of a commemorative sign is only “temporally” or “occasionally non-evident” and can be described empirically.

“Thus the commemorative sign, when observed in conjunction with the thing signified in a clear perception, brings us as soon as it is presented and when the thing signified has become non-evident, to a recollection of the thing observed along with it and now no longer clearly perceived—as in the case of smoke and fire; for as we have often observed these to be connected with each other, as soon as we see the one—that is to say, smoke—we recall the other—that is to say, the unseen fire.” (ii, 315–317.)

As an empiricist, Sextus defended the commemorative sign and rejected the indicative sign. His own theory was a clear statement of the essential principles of positivism, pragmatism, and behaviorism.

First of all, he contended, the presence of what purports to be an indicative sign cannot justify any assertion about a “naturally non-evident” object lying beyond appearances. We never experience the conjunction or sequence of an indicative sign and its object, since by definition its object cannot be experienced. Consequently, there is no sign which can serve as evidence for

² References are to pages in the three-volume edition of Sextus Empiricus in the Loeb Classical Library.

any statement about a non-empirical object, for it is impossible to support our statement by an appeal to previous experience. For example, the Stoics regarded a flushed and moist face as indicative of a disturbance among the body's intelligible molecules, but this is not warranted, according to Sextus, for no one has experienced such molecules.³ Moreover, the indicative sign is not really a sign at all, since it cannot make us conscious of its object. If a "naturally non-evident" object is non-empirical by definition, it cannot even be conceived. "It is impossible to find in conception anything which one does not possess as known by experience." (ii, 267.) If the "intelligible molecules" have no experienceable characteristics they are completely unintelligible, for "every intelligible thing derives its origin and source of confirmation from sensation." (ii, 429.)

The Stoics maintained that an appearance can function as an indicative sign, as a sign for the object behind the appearance, if it is sufficiently "apprehensive and gripping." They held that, if the appearance commands such spontaneous assent that genuine doubt is impossible, it warrants a belief about an object which transcends it. Sextus argued that we frequently have such experiences which nevertheless turn out to be delusive. And the reason that we call some appearances delusive is not to be found in their own character but in the fact that expected appearances do not follow upon them. The contemplation of appearances, however gripping they may be, never yields knowledge of existence, for "the preconception and notion of the thing is not its existence." (ii, 417, 441.) We can attribute cognitive significance to an appearance only if we appeal to further experience.

Although the Stoic theory of signs is quite dissimilar to contemporary empirical theories, it is of interest to note that some of the Stoics offered a definition of "truth" which is nearly identical with that proposed by Carnap and Tarski. The general rule of truth, according to Carnap, is that a sentence is true if and only if the object designated by the constant (the subject) has the property designated by the predicate. E.g., "A sentence of the form ' \dots_n ist. \dots_p ' is true if and only if the thing desig-

³ Cf. i, 225-7; ii, 317, 325-7.

nated by '...n has the property designated by '...p.'"⁴ Sextus tells us this about the Stoics: "As to this definite proposition 'This man is sitting' or 'This man is walking,' they declare it is true when the thing predicated such as 'sitting' or 'walking,' belongs to the object indicated." (ii, 289.)⁵ This might be regarded as one of the beginnings of "scientific semantics."⁶

Aenesidemus of Cnossus, a sceptic who lived during the latter half of the first century B.C., appears to have denied the possibility of any type of sign, whether commemorative or indicative, but Sextus was less sceptical and affirmed the possibility of commemorative signs. He was careful, however, to avoid dogmatism. We may expect fire when we have seen smoke, he said, for we have experienced the two events in succession, but we must not predict it dogmatically since the presence of a sign never entails the existence of its object (i, 217; ii, 391). His denial of the demonstrative character of induction clearly anticipates Hume's criticism:

"It is also easy, I consider, to set aside the method of induction. For, when they propose to establish the universal from the particulars by means of induction, they will effect this by a review either of all or of some of the particular instances. But if they review some, the induction will be insecure, since some of the particulars in the induction may contravene the universal; while if they are to review all, they will be toiling at the impossible, since the particulars are infinite and indefinite." (i, 283; cf. 277-9.)

This does not mean, however, that induction should be abandoned. Sextus' point is that we have no grounds for certainty, even after adhering scrupulously (as, according to him, we must) to the principles of empiricism. In conceding the possibility of commemorative signs, he granted that we have reason for

⁴ *Foundations of Logic and Mathematics*, International Encyclopedia of Unified Science, Volume I, No. 3, p. 9.

⁵ The Stoics believed that in addition to the vocal sounds and the facts indicated there is a proposition which is an "incorporeal" entity lying between them. They held that truth and falsity are strictly predicable only of this proposition. Sextus denied the need for positing such an entity and Epicurus apparently maintained that truth is predicable of the sound itself (cf. ii, 245-7, 271 ff.).

⁶ Cf. Plato, the *Sophist*, 263 ff.

associating phenomena and preparing for some sequences and conjunctions rather than for others.

“In respect of things apparent he [man] possesses a retentive sense of sequence, by which he remembers what things he has observed together with what, and what before what, and what after what, and from his experience of previous things revives the rest. . . We do not object to the commemorative sign but to the indicative.” (ii, 391.)

His position concerning the narrower sense of the term “sign”, wherein it is used to refer to symbols such as words, is strictly positivistic. He insisted that “the significance of names is based on convention and not on nature” (i, 291; cf. 503–5). The Stoics believed that words can be indicative signs and, accordingly, that it is possible to make meaningful statements about intelligible molecules, the infinite void, and other such non-empirical entities. Sextus regarded such statements as nonsense. Philosophers, he thought, should not employ indicative signs (metaphysical assertions) and should make no statements which cannot be tested by sense experience. This passage is typical:

“Every argument is judged to be either true or false according to its reference to the thing concerning which it is brought forward. . . When the fact concerning which the argument is brought forward is manifest and pre-evident, it is easy to refer the statement to it and then, in this way, to declare either that the argument is true as confirmatory of the fact, or false if contradictory. But when the fact is non-evident and hidden away from us, then, as there can no longer be any sure reference of the argument to it, . . . disputation springs up, since neither he who has missed the mark knows that he has missed it, nor he who has hit it knows that he has hit it. Accordingly, the Sceptics very neatly compare those who inquire about things non-evident to men shooting at a mark in the dark.” (ii, 409.)

In this context he seems to suggest that metaphysical statements might be true, even though not known to be true, but it is doubtful that he intended this, in view of his doctrine that indicative signs have no reference. He opposed such statements, not merely because he regarded them as nonsense, but also because he believed them to engender futile controversy which seriously in-

terferes with that quietude or ataraxy which is the sceptic's ultimate goal. The objection is primarily a pragmatic one. As far as the ordinary affairs of life are concerned, there is no need to refer beyond appearances.

"The attempt to establish that apparent things not merely appear but also subsist is the act of men who are not satisfied with what is necessary for practical purposes." (ii, 435.)

It was implicit in the Stoic theory that the interpreter of a sign must be a rational being, one capable of formulating and understanding propositions, and that a rational mind is a necessary component of any sign situation. But actually, Sextus argued, we know that non-rational beings achieve much success in interpreting signs.

"For, in fact, the dog, when he tracks a beast by its footprints, is interpreting by signs; but he does not therefore derive an impression of the judgment 'if this is a footprint, a beast is here.' The horse, too, at the prod of a goad or the crack of a whip leaps forward and starts to run, but he does not frame a judgment logically in a premise such as this—'If a whip has cracked, I must run.' Therefore the sign is not a judgment, which is the antecedent in a valid major premise." (ii, 379–381.)

The point of this is that all one needs to know in order to recognize an instance of semiosis is that there is an interpreter behaving in an "appropriate" fashion and it need not be assumed that the interpreter has a mind.⁷

II

Sextus' discussion of our knowledge of the external world suggests a purely phenomenalistic epistemology. He began by acknowledging the importance of what is now called "the given" and he recognized that an adequate analysis of empirical knowledge must lead to that which is indisputably and irrevocably presented in experience. Although the true sceptic should ques-

⁷ The Stoics appealed to "internal reason" to distinguish man from the animals, but Sextus held that we have as much evidence for attributing it to the animals, since in either case we always appeal to the manner in which the creature behaves (cf. i, 39 ff.).

tion any proposition which refers beyond that which is immediately before him, it is impossible, according to Sextus, to be sceptical about the given itself.

“Those who say that the Sceptics abolish appearances, or phenomena, seem to be unacquainted with the statements of our school. For . . . we do not overthrow the affective sense-impressions which induce our assent involuntarily; and these impressions are ‘the appearances.’” (i, 15.)

The sceptic lives a life which is wholly “in accordance with appearances” (i, 13) and does not pretend to deny them, for they are self-evident and beyond question.⁸

He insisted that appearances are the ultimate test of anything which purports to be knowledge and that any statement whatever, if it is significant, must be testable by reference to them. If our knowledge is expressible in propositions, there is a correspondence between the propositions and that which is found in sense experience, and this can be verified by “comparing” the propositions with the empirical facts which they are about.

“By referring the statement to the fact and learning that the fact’s existence is confirmatory of the statement, we say that the statement is true.” (ii, 409.)

The fact must be something which is given in experience and it must, in the last analysis be altogether self-evident.

“To ensure knowledge of things . . . there must be some self-evident fact present, and if this is not present, the apprehension of those things likewise vanishes.” (ii, 193.)

Although the sceptic does not deny appearances, he does deny the possibility of knowledge which refers beyond them.

“When we question whether the underlying object is such as it appears, we grant the fact that it appears, and our doubt does not concern the appearance itself but the account given of that appearance. . . The point in dispute is whether the object is in reality such as it appears to be.” (i, 15–17.)

⁸ Cf. Plato, *Theatetus*, 152.

Even if it be assumed that there do exist real objects beyond our experience, we cannot claim to apprehend them in any sense, for

“nothing is of a nature to be perceived of itself, but all things through affection, and this is other than the object of presentation which produces it . . . so the intellect, when it perceives the affections without having discerned the external objects, will not know either the nature of these objects or whether they resemble the affections.” (ii, 193, 189.)

Moreover, it is meaningless to speak of assuming the existence of such objects, since we are unable to conceive anything which is non-empirical.

“It is impossible to find in conception anything which one does not possess as known by experience. . . Every conception, then, must be preceded by experience through sense, and on this account if all sensibles are abolished all conceptual thought is necessarily abolished at the same time.” (ii, 267.) “Every intelligible thing derives its origin and source of confirmation from sensation.” (ii, 429.)

If we have no means of ascertaining whether a given phenomenon is representative of an external object behind it, we can appraise it only by considering it in its relations with other phenomena. The data of perception function as signs of further experiences.

“When I feel warm through the approach of fire I take my own condition as a *sign* that the external substance of fire is warm, and the same may be said of the other objects of sense.” (ii, 193.)

The reference to “external substance” suggests that Sextus regards the datum as signifying a thing beyond experience, as Santayana does, but this is precluded by his rejection of the indicative sign. A given phenomenon serves as a commemorative sign of further experiences and is cognitively significant when the expected phenomena follow upon it.

Arcesilaus and Carneades, Academic Sceptics of the third century B.C., had proposed a justification for statements purporting to refer beyond phenomena which was entirely different from that offered by the Stoics. Like Reichenbach, they held that we can

make *probable* assertions about non-empirical objects. Such assertions have an initial probability if based upon presentations which are not obscure and indistinct. The gripping and apprehensive presentations of the Stoics yield considerable probability at the outset. This can be increased, according to Carneades, by corroborating the reports of the different senses and by investigating all the conditions under which the observation occurs. By such means, it was held, we can attain a reasonably high degree of probability for some assertions, although we can never expect absolute certainty. Sextus argued that this was a disguised dogmatism and that such criteria are no more fruitful than those of the Stoics, since it is quite possible for an appearance to conform to them in every respect and nonetheless be completely delusive.⁹ Moreover, according to his positivistic and phenomenalistic principles, the appeal to probability constitutes no defense of transcendent reference, since the procedure described consists solely in testing some phenomena by relating them to others and, consequently, never takes us beyond them.

Despite his phenomenalism, Sextus attacked the attempts of some of the Stoics to define a substance in terms of its properties. Most of his arguments concerning this point are of little interest, but some of them suggest the doctrines of Kant and the later idealists. Even if we grant that an object is nothing but a collection of appearances, he said, we cannot attribute to experience the activity by means of which we combine the appropriate appearances in order to apprehend the object, for

“the act of putting together one thing with another, and of perceiving such a size together with such and such a form, belongs to the rational faculty.” (ii, 157.)

He stated elsewhere that the senses are completely irrational and that we cannot apprehend truth by their means alone, since, although they present us with appearances such as whiteness, they never present us with propositions which state *that* what ap-

⁹ Cf. i, 8-9, 139, 143; ii, 235. It is interesting to note that, although Sextus held that life is guided by inductions and that they are not certain, he did not speak of some as being more probable than others.

pears is white (ii, 181). Such passages seem to conflict with his general doctrine, but it was not unusual for the sceptic to oppose those who agreed with him, if they were dogmatic. In such cases, Sextus admitted, he was more concerned with the persuasiveness of his arguments than with their cogency.¹⁰ That he really agreed with his opponents on this point is suggested by this passage, which anticipates Locke's theory of simple and complex ideas:

"... for certainly the apprehension of every object, whether sensible or intelligible, comes about either empirically by way of sense-evidence or by way of analogical inference from things which have appeared empirically, this latter being either through resemblance (as when Socrates, not being present, it recognized from the likeness of Socrates), or through composition (as when from a man and a horse we form by compounding them the conception of the non-existent hippocentaur), or by way of analogy (as when from the ordinary man there is conceived by magnification the Cyclops ... and by diminution the pigmy)." (iii, 507; cf. ii, 267.)

He could not have maintained consistently that the "activities" of diminution, composition, etc., are possible had he seriously accepted the implications of his criticism of the Stoic theory of the physical object.

III

That there was a controversy between the "Philonians" and the "Diodorans" over what is now called the principle of extensionality is familiar to readers of C. S. Peirce.¹¹ Sextus is our principal source for this, but it is mentioned by Cicero.¹² Philo of Megara (c. 300 B.C.), held that logical relationships are extensional or truth-functional, but his teacher, Diodorus Cronos, re-

¹⁰ "The adherent of Sceptic principles does not scruple to propound at one time arguments that are weighty in their persuasiveness, and at another time such as appear less impressive,—and he does so on purpose, as the latter are frequently sufficient to enable him to effect his object." (i, 153.) Sextus was more interested in combatting dogmatism than in advocating any particular doctrine. He even opposed the empirical physicians because they were dogmatic in their empiricism (cf. i, 256 ff.).

¹¹ Cf. *Collected Papers*, Vol. II, p. 199; Vol. III, pp. 279–280.

¹² *Academica*, II, xlvi.

jected this and adhered to an intensional conception of logic. Although most of those who now call themselves empiricists are Philonians, Sextus appears to have been a Diodoran.

The principle of extensionality rests in part upon the distinction between atomic propositions, which are simple, having no propositions as components, and molecular propositions, which are compounded of atomic propositions by means of such connectives as "and", "or", "implies", etc. Sextus attributes this distinction to the "dialecticians," but it is probably Philo whom he has in mind.

"For the Dialecticians proclaim that almost the first and most important distinction in propositions is that by which some of them are simple, others not simple. And simple are all those which are neither compounded of one proposition twice repeated, nor of different propositions, by means of some one or more conjunctions [connectives]; as for example 'It is day,' 'It is night,' 'Socrates is conversing,' and every proposition of similar form. . . Propositions are called 'simple' since they are not compounded of propositions but of certain other things. For example, 'It is day' is a simple proposition inasmuch as it is neither formed from the same proposition twice repeated nor compounded of different propositions, but is constructed of certain other elements, namely 'day' and 'it is.' Moreover, there is no conjunction [connective] in it either. And 'not simple' are those which are, so to say, double, and all such as are compounded of different propositions, by means of one or more conjunctions, as for example—'If it is day, it is day'; 'If it is night, it is dark'; 'Both day exists and light exists'; 'Either day exists or night exists'." (ii, 285-7.)

Philo and his followers held that the 'non-simple' propositions are truth-functions of the component propositions, i.e., that the truth-value of a molecular proposition is a function of the truth-values of its components. Although Sextus objected to Philo's interpretations of conjunction and negation, the principal source of controversy, as at the present time, was the extensional view of implication.

"Thus Philo declared that 'the hypothetical is true whenever it does not begin with what is true and end with what is false'; so that, according

to him, the hypothetical is true in three ways and false in one way. For whenever it begins with truth and ends in truth it is true, as thus—‘If it is day, it is light.’ And whenever it begins with what is false and ends in what is false, once more it is true, as for instance ‘If the earth flies, the earth has wings.’ Likewise also that which begins with what is false and ends with what is true is true, as thus—‘If the earth flies, the earth exists.’ And it is false only in this one way, when it begins with truth and ends in what is false, as in a proposition of this kind—‘If it is day, it is night.’” (ii, 297.)

A “true hypothetical,” then, according to the Philonians, is one which has the properties of Russell’s material implication, namely, any one which is such that it “does not begin with a truth and end with a falsehood” (i, 221). In defining this, Philo all but proposed Wittgenstein’s truth-table or matrix method.

“As, then, there are four combinations of the major premise—when it begins with truth and ends in truth, or when [it proceeds] from falsehood to falsehood, or when [it proceeds] from falsehood to truth, or conversely from truth to falsehood,—in the first three modes the premise, they say, is true (for if it begins with truth and ends in truth it is true, and if it begins with falsehood and ends in falsehood it is again true, and so likewise when [it passes] from falsehood to truth); and in one mode only is it false, namely, when it begins with truth and ends in falsehood.” (ii, 367–9.)

The Diodorans objected to any such matrix-definition of implication. In the first place, they argued, all but one mode or combination should be rejected. It is agreed that the implication does not hold when the antecedent is true and the consequent false. But in addition to this, if we are to avoid the paradox of a false proposition implying any proposition, whether true or false, we must add that a true implication “will not reside either in that which begins with falsehood and ends in falsehood or in that which [passes] from falsehood to truth. Thus it only remains for it to exist in that which both begins with truth and ends in truth” (ii, 369). Even this is not satisfactory, however. A true implication is one which “seems to promise that its second

follows logically from its first" (ii, 297). It is an instrument by means of which, given the antecedent, we can extend our knowledge to the consequent. The antecedent must serve to "reveal the consequent. . . for by observing the former we come to an apprehension of the latter" (ii, 371). Therefore, "Diodorus asserts that 'the hypothetical proposition is true which neither admitted nor admits of beginning with truth and ending in falsehood'" (ii, 299). It is not sufficient that both antecedent and consequent be true, nor is it necessary. There must be a connection between them which makes it logically impossible for the antecedent to be true and the consequent false. "Those who introduce 'connexion,' or 'coherence,' assert that it is a valid hypothetical syllogism [true implication] whenever the opposite of its consequent contradicts its antecedent clause" (i, 223). This is what implication must be, according to the Diodorans, if it is to be really "indicative of truth" and to possess the cognitive significance we ordinarily think it to have. It is what C. I. Lewis calls "strict implication." It is not an extensional relation and no matrix-definition can be provided for it.¹³

Finally, this further anticipation of Wittgenstein may be noted. The conclusions of both Sextus and Wittgenstein are such as to render nugatory the arguments upon which they are based. Thus Wittgenstein concludes his *Tractatus Logico-Philosophicus* with this remark:

"My propositions are elucidatory in this way: he who understands me finally recognizes them as senseless, when he has climbed out through them, on them, over them. He must so to speak throw away the ladder, after he has climbed up on it. He must surmount these propositions; then he sees the world rightly." (p. 189.)

¹³ Sextus and the Diodorans also rejected the extensional interpretation of some of the other types of statement composition. The Philonians held that a conjunction is true if all the component propositions are true and that it is false if any one of them is false. Sextus objected that, if we are "to give heed to the real nature of things, it is surely logical to say that the conjunctive which has one part true and one part false is no more true than false. . . just as what is compounded of white and black is nor more white than black" (ii, 305). Moreover, he claimed to detect metaphysical difficulties in the matrix-definition of "not-p", for it rendered the negative such that it could make the true false and the false true (ii, 291, f.).

And Sextus makes this comment at the end of his *Treatise Against the Logicians*:

“Just as it is not impossible for the man who has ascended to a high place by a ladder to overturn the ladder with his foot after the ascent, so also it is not unlikely that the Sceptic after he has arrived at the demonstration of his thesis by means of the argument proving the non-existence of proof, as it were by a step-ladder, should then abolish this very argument.” (ii, 489; cf. i, 271.)

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