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CRITICAL STUDIES

CORNFORD ON THE BIRTH OF METAPHYSICS

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WHEN he had finished his cannibal dinner, *Homo javanensis* presumably passed the evening in recounting cosmogonical myths. Reason, at least as exemplified in the everyday processes of problem-solving celebrated by the pragmatists, is much older, being shared by the brute creation. Yet the amalgamation of the two—the application of reason to the perennial subjects of myth—resulting in the first metaphysics, did not occur until just two and a half millennia ago, when Thales argued that everything is water.

This most stupendous revolution in all intellectual history may seem in retrospect to have been long overdue. However, since myths are far more satisfying, emotionally and esthetically, than metaphysics, which moreover has no immediate survival value, we should wonder not at the tardiness of this development but rather at its having ever got started.

Nevertheless that revolution did occur. One of its remote consequences is our present belief that it was a natural occurrence, explainable in terms of a continuous intellectual development among the Greeks of Ionia. Much of Francis M. Cornford's long and productive scholarly career was devoted to the problem of providing this explanation. His last word on the subject, the book *Principium Sapientiae*, was almost complete at the time of his death in 1943.¹

In this book, as in his first important work, *From Religion to Science* (1912), Cornford is concerned to show that "philosophy or science was not a motherless Athena" (188), but the culmina-

¹ Ed. by W. K. C. Guthrie (Cambridge: Cambridge University Press, 1952). References to this book will be indicated by page numbers in parentheses.

tion of a continuous development of religious and mythological thought. He asks: "Is the Milesian cosmogony the work of rational inference based on observation and checked by at least rudimentary methods of experiment? Or are its features to be referred to an attitude of mind uncongenial to natural science as we understand it?" (186). The book is an attempt to show that the latter alternative is correct.

Cornford begins by pointing out that the ancient natural philosophers made little use of experiment. Indeed, when one reads the works of those scholars who endeavor to show that the pre-Socratics were experimental scientists, one finds such writers preposterously overworking Empedocles' clepsydra and the occasion when Anaximenes allegedly blew on his hand. On the other hand (Cornford continues), the physicians of antiquity experimented frequently and systematically. They built up a considerable body of scientific knowledge based on this. They should be regarded as the true founders of the empirical theory of knowledge, and consequently as the first scientists.

Among the philosophers, however, Epicurus represents "the final outcome of Ionian physics" (12), and there never has been a more completely dogmatic non-empiricist. Hence we may safely conclude that the method of early philosophy was not experimental or scientific but dogmatic. "It is hard indeed to suppose that the earlier Ionians had established a genuinely scientific method, if it could be so entirely ignored by those who accepted atomism" (30). In answer to the question, if these men were not scientists, what was their criterion of validity in their pronouncements, Cornford filiates them with their predecessors, the poet-seer-sages, or shamans, who reached their conclusions by direct insight, or direct traffic with the gods, i.e., who exhibited the "divine frenzy" of which Plato frequently speaks. Cornford does not mean that the Ionian philosophers actually went into trances, or anything of that sort, but that their confidence in the truth of their utterances was derived from the precedent set by their shamanistic predecessors.

Undoubtedly Cornford is right to deny that the Ionians were experimental scientists, or empiricists. They did not perform experiments, they did not generalize tentatively from observation. But it weakens the argument to take Epicurus as the "final outcome

of Ionian physics". Epicurus, as everyone recognized until recently, made no scientific advances and used previous Democritean science only for his purposes, which were not scientific but moral. Cornford should have chosen Democritus instead.² He would have had no more trouble in showing Democritus to have been a non-empiricist.

Yet it does not follow that because a man is not an empiricist, he is a dogmatist, in a religious or quasi-religious sense, nor even that he does not deserve to be called a scientist. Empiricism is not the only rational approach to understanding reality.

In one very important sense, it is clear that the Ionians were not dogmatists; they were not dogmatic about their predecessors, but rather they criticized them most acutely. This fact is the key to their method. It was, in the first place, analogical. Considering that the subject of their researches was the universe at large—cosmogony, cosmology, meteorology—it could not be expected that they should have been empiricists in Cornford's strict sense, since even today this is not the method of cosmogony. Extrapolation of processes that are observable and controllable on a small space-time scale is the best that can be done. And that is exactly what the Ionians did. Their speculative conclusions about cosmogonical processes were explicitly justified by analogy with natural processes accessible to observation. Furthermore, the progress of pre-Socratic thought is dialectical: the succession Thales—Anaximander—Anaximenes—Parmenides—Empedocles—Anaxagoras—Democritus reveals at every step advances based on greater awareness of the requirements of logical rigor, and the care to make their theories free of internal contradiction as well as proof against refutation by appeal to obvious facts. Thus the growth of ancient science is the growth of two criteria: internal consistency (which, I shall urge, is the distinctive achievement of these thinkers) and consistency of consequences with observation ("saving the appearances," which is, after all, the gist of scientific method in cosmogony today). The solid achievements of these men—the discoveries of the sphericity of the earth and the true

² Perhaps he would have done so, had he not been objecting to the Farringtonian picture of Epicurus as a great scientist and proto-Marxian.

theory of eclipses, for example, and the atomic theory of matter—should convince us that something more than “divine frenzy” or any offshoot of it was at work. The most striking and important characteristic of these men is that they troubled themselves to give reasons for their conclusions. Nobody before them did.

In considering the relation of the philosophers to the shamans, who in the grip of divine frenzy communicated directly with the gods, we must distinguish four questions which Cornford does not always keep separate: (1) to what extent did the philosopher usurp the social function of the shaman? (2) to what extent did the philosopher attribute his own insights to an experience analogous to the shaman's? (3) to what extent do the philosophers' insights trespass on the shamanistic subject matter? (4) to what extent are the criteria of the philosopher and shaman alike? Thus put, the questions are either easy to answer, or irrelevant to the problem, or both. (1) To some extent the philosopher superseded the shaman as a recognized authority, in the ancient world; his descendants today have perhaps extended their influence to some slight degree. (2) Cornford cites the fragment of Democritus (B 11) to the effect that “irrational animals, the wise, and gods have an extra sense”, and accepts Rohde's interpretation that this statement connects “with the inspiration of poet and seer that philosophic intuition which Democritus called ‘true-born wisdom’ ” (65). This may be so; it does not matter, because how exceptional men come by their original ideas is a psychological problem that has no bearing on the question of their validity. Perhaps inspiration really does come from the spirit world, as Mr. G. N. M. Tyrrell maintains. Even so, it still remains that for the Ionians as well as the Platonists “the visions must be interpreted by sober reflexion afterwards” (141), and it is only the nature of this “sober reflexion” that concerns us here. Thus the whole of Cornford's elaborate discussion of Platonic anamnesis, while of the greatest interest and importance for its own sake, must be dismissed as irrelevant to the history of the growth of rational methodology. (3) Cornford is surely right in saying that not only did the philosophers investigate the subjects that are the typical stock in trade of myth, but also that they directly inherited their problems,

and some presuppositions and conclusions (e.g. that the world must have come into its present state out of a previous chaos) from the mythologers. Of this more will be said later. At present we may be content to note that no continuity of method is entailed in this. (4) The criteria of philosophers and shamans have nothing in common, for the reason that the shamans had no criteria. A feeling of certainty doesn't count. In controverting this view, Cornford instances the numbers 9, 18, 27 in Anaximander (referring to the distances, in earth radii, of the various celestial hoops from the earth), and his contention that the earth is a drum three times as broad as high, as examples of pre-Socratic "dogmatism." "It is obvious that they are a priori and cannot be based on any kind of observation" (165). Perhaps so; *prima facie*, however, we have here an early example of the insistence that Nature must conform to reason, i.e., a sort of embryonic metaphysics of the mathematizing sort. One is presumably supposed to accept the figures because of their inherent reasonableness (v. the Pythagorean harmonies). This is the antithesis of shamanistic mysticism. Moreover we must not overlook the fact that these figures occur in the context of an astonishingly rational account of the nature of things, which is by no means devoid of references to observation, as Cornford admits (170).

To be sure, pre-Socratic philosophers frequently had recourse to self-evidence as a criterion of truth. Philosophy started off bravely enough. The Milesian cosmogonies are in the grand style. Yet in every case the principles to which they appeal are such as to recommend themselves as plausible to reasonable men of the time and place. If these grounds seem insufficient to us, that is because, thanks to the processes that they initiated, we are more adequately equipped to criticize. The sharp line between philosophy-science and mythologizing was drawn for all time by Heraclitus: "Not on my authority, but on account of my argument, it is wise for you to accept . . ."

Cornford is correct, moreover, in insisting that the empirical theory of knowledge must be credited to Greek medicine, not to philosophy. The important point is that the more or less "pure empiricism" of the physicians is not of itself any more satisfactory as a scientific method than the rationalism of the cosmogonists.

Science cannot dispense with either. It is no accident that the first reasonably satisfactory canon of science was formulated by Aristotle, a Platonist who knew medicine.

In sum, the facts do not support the hypothesis that Ionian thought shows a continuity of method or criteria with the inspired utterances of shamans, or poet-prophet-sages. On the other hand, it is equally evident that the Ionians seldom appealed in support of their cosmogonies to anything much like what would be regarded as empirical evidence in the modern sense. We must therefore take a new tack if we desire to understand the rationale of their thought and its filiation to that of their predecessors.

But however slight the kinship between shaman and philosopher may have been with respect to criteria, the second half of *Principium Sapientiae* shows conclusively that the earliest rational cosmogony is schematically identical with previous myths. Cornford traces the lineage of Anaximander's cosmogony back through Hesiod to the Babylonian Hymn to Marduk, explaining also how it was possible for mythological material to become progressively more "rational."

In opposition to the usual supposition that myths and rituals arise out of primitive men's ascribing personalities to natural forces, then inventing mythical exploits of these personalities to account for natural phenomena, and finally instituting rituals to commemorate these mythical events and persons, Cornford proposes the following sequence: (1) Primitive men feel that their cooperation is essential for the continuation of the natural order. In particular, yearly rituals to insure the return of the growing season are instituted. The priest-king is the principal figure in these ceremonies. (2) The conception of Kingship as a sort of "Platonic Idea" in which particular kings only "participate" is formed. Concurrently, the program of the yearly ritual is abstracted from its instances. But the abstraction proceeds no further than the conception of the "Platonic Idea" of Kingship as a Divine Creator, and the program of the ritual as a cosmogonical myth of the Creator's exploits. (3) The myth becomes detached from its ritual setting and embarks on a career of its own when either the ritual falls into disuse or the myth is exported. In the

latter case it may be expurgated or otherwise altered—perhaps “rationalized.”

The Babylonian myth of creation was exported to the Mediterranean area before the fourteenth century B. C. through the port of Ugarit. It is the basis of Hesiod’s cosmogony and theogony, as well as of Genesis i-ii.³ But in Hesiod, “the cosmogony . . . is not a myth, or rather it is no longer a myth. It has advanced so far along the road of rationalization that only a very thin partition divides it from the early Ionian systems” (198). The same is true of the Elohistic cosmogony. Yet in both cases the “rational” part is immediately succeeded by the most primitive sort of mythical material.

The order of events in Anaximander’s cosmogony is the same as that in the “rationalized” creation myths. Furthermore, there is nothing in the common sense observation of nature to suggest that things have not always been as they are now. Hence Anaximander’s achievement was to take “the final step in the process of rationalization, divesting the scheme of the last traces of mythical imagery” (200). Also he was consistent in his exclusion of mythical imagery, not reintroducing it later, as Hesiod had done.

This account of the lineage of the first rational cosmogony is most enlightening, as far as it goes; but it is incomplete. If we accept it—as I think we should—then philosophy is no longer “a motherless Athena”; but the question of paternity is still open.

For how are we to characterize and account for the “rationalizing tendency” at work on the myths? It is no reproach against Cornford to say that he did not account for this; it is even hard to say what would count as an explanation, supposing that we knew everything we want to know about the

³ This is Cornford’s positive conclusion, based on the similarity of the myths. It is puzzling that he says nothing about the creation myth of the Rig-Veda, which not only has the same structure as the Babylonian-Hebrew-Greek, but is *linguistically* akin to the Greek in the names of such divine personages as Dyaus (=Zeus, Dios). See the reconstruction by W. Norman Brown, *Journ. of the Amer. Oriental Soc.*, 62 (1942), 85-98; summarized in Finegan, *The Archeology of World Religions* (Princeton, 1952), pp. 133 f. Perhaps Cornford would have discussed this in his projected but unwritten chapter on India.

period. Nevertheless it may be possible to follow up some suggestions derived from Cornford to the point where certain aspects of the Milesian achievement can be more thoroughly appreciated.

If we follow Cornford closely in his investigation of the similarities between early philosophy and myth, we may tend to forget that the two are none the less as generically different as any two modes of thought can be; and that the differences are, first, that the Milesians and their successors gave reasons for their conclusions; secondly, that the reasons were publicly verifiable—negatively, in that no appeals were made to special sources of information about the unobservable workings of supernatural beings; positively, in that the appeals actually made were to everyday criteria of common observation, or of rational plausibility, especially logical consistency. For example, Anaximander objected to Thales' water-principle, "inasmuch as air is cold, water is moist, and fire hot; if one of these were infinite, the rest would be at once destroyed."⁴ The appeal here is simply to logical consistency. Again, "Anaximander says at the beginning man was generated from all sorts of animals, since all the rest can quickly get food for themselves, but man alone requires careful feeding for a long time; such a being at the beginning could not have preserved his existence."⁵ Here we have a "thought-experiment," if you like, but a remarkably cogent one, at once above and beneath the level of myth-making.

But why should evidence suddenly begin to be offered in support of assertions far less amazing than those in the myths? And why should the thinkers so austere eschew the easy ways of supernaturalism?

The clue to a possible answer to these questions is given by Cornford in his account of the development of myth from ritual. One of the most fruitful anthropological advances of the present century has been the recognition that myths are not primitive pseudo-science; they are not invented to satisfy curiosity about the nature of things, but to objectify emotions. Still it seems to

⁴ Aristotle, *Physics*, iii, 5 (204b22).

⁵ Ps.-Plut. *Stromateis* 2.

be taken for granted that myth has a *secondary* cognitive function—that the literal content of myth is believed by the worshipper in the same manner that the literal content of scientific texts is believed by the present-day student, or that the thirty-nine Articles are believed by conscientious and informed contemporary Anglicans: that is, the propositions concerned are believed to be *true*; the personages described existed in the way in which the believer exists, and the events happened just as his own doings take place.

Self-evident as this assumption may seem, it leads to curious consequences. Individual Egyptians notoriously believed a multitude of logically incompatible myths, and this White Queenish facility is characteristic of primitive thought. In consequence some students have doubted whether the primitive mind is capable of any clarity of thought. Others, recognizing that the primitive mind is not the feeble mind, have defended these inconsistencies by pointing out their pragmatic significance. "Once one recognizes the processes of ancient thought," the Frankforts write,^{*} "their justification is apparent. After all, religious values are not reducible to rationalistic formulas. Natural phenomena . . . confronted ancient man with a living presence, a significant 'Thou,' which . . . exceeded the scope of conceptual definition."

While it is true and important that to primitive thought the world is "Thou," not "it," this fact does not explain the primitive passion for contradictions. My wife is a "thou"; nevertheless the male nurses would soon come to my door if I persisted in asserting that she was a cow and also a winged serpent. Nor, surely, has any primitive society tolerated the habitual flouting of the law of contradiction in everyday mundane affairs.

The only possible solution to this paradox is the obvious one that to the primitive mind myths are simply not understood to make truth-claims at all. Myths persist despite their vulnerability to criticism, not because the primitive is astoundingly naive, but because the myth, to his understanding, does not make any assertions that it would be appropriate to criticize. The myth is

^{*} H. & H. A. Frankfort, *Before Philosophy* (London, 1949), p. 29.

not true, but neither is it false; its ritual significance is its *only* significance.

This is not to say that the myth is explicitly recognized to be an allegorical fiction, although that is perhaps a less misleading description than any other. Rather, the conception of a universe, continuous in space and time, embracing all real events, so that every proposition refers to it and is true if and only if it corresponds to some feature of it, has not yet been formed. Hence criteria of plausibility and logical consistency, which are applied as a matter of course in the prosaic affairs of daily life, are, equally as a matter of course, simply not invoked in the context of the supernatural. On the contrary, criteria for acceptability of myths are emotional and aesthetic only.

This a priori inference can be supported by a large amount of empirical evidence from studies of past and present mythologies. Space permits the citation of only one sample:

How little qualified are we to know the traditional, as distinct from the lexicographical, value of word and phrase, to interpret the traditional figurative diction—to know when a shaman does not intend us to place a literal interpretation on his words! . . . For instances we may turn to certain books of incantation current among the Mussulman bakshas which make mention of Turkish saints who mount on lions, dragons etc., while similar feats are attributed to many notable characters of the ancient Mussulman world. But it is clear from the oral literature current among the Tatars of Central Asia today that identical feats are there attributed to the heroes and heroines in a manner which shows that they are to be understood as among, not the actual, but the spiritual experiences of these people.⁷

The transition from mythology to philosophy, then—Cornford's "rationalizing tendency"—consists precisely and wholly in a gradual awakening of the Greeks to a consciousness that there is just one world, and the extension of the conception of "literal truth" to that world. It dawned on the Greeks that *all* propositions meant to be taken seriously must be mutually consistent; the law of contradiction is applicable without qualification to all assertions claiming truth. Or it might be better to say

⁷ N. Kershaw Chadwick, *Poetry and Prophecy*, p. 70; quoted in Cornford, p. 103.

that this awareness was the *invention* of the *general* conception of literal truth.

The first explicit statement, that has survived, of this new conception of literal truth is found in the proem to Hesiod's *Theogony*: (The Muses speak) "We know how to tell many fictions that wear the guise of truth, but we know also how to declare the truth, when we will." As is to be expected, the recognition of this requirement of consistency does not, in its first appearance, entail a thorough-going critical scrutiny of the traditional mythology. Hesiod is conscious only of the obligation to rework his material into logically consistent form. He did not succeed, but the important thing is that he made a beginning.

Neither, as Cornford points out, did Anaximander emancipate himself completely from mythological thinking; he retained the program of traditional cosmogony. He took, however, the two decisive, literally epoch-making, steps of dispensing with anthropomorphism, and of defending his conclusions by rational argumentation. In his arguments⁸ cosmogony and *modus tollens*; each as old as the race, are wedded at last.

This development of a unified world-view becomes explicit in Heraclitus:

And though reason is common, most people live as though they had an understanding peculiar to themselves. . . . They that are awake have one world in common, but of the sleeping each turns aside into a world of his own.⁹

To summarize, the hypothesis here proposed is that Milesian thought was the first metaphysics in the surprisingly narrow sense of being the first account of things-in-general to make a claim of literal truth, backed up by deductive reasoning; and pre-Milesian (more strictly, pre-Hesiodic) religious "cosmogony" was not intended, even by its advocates, as making assertions that could be true or false. Moreover, the foundation of metaphysics, not the practice of medicine, was the necessary condition for the eventual development of science as we understand the word; for many

⁸ See above, p. 450.

⁹ Fragments 92 and 95. See also 1-6, 14-20, 48, 91, 111.

peoples have possessed empirical medicine, but only one has ever given birth to science.

If it is difficult to accept this hypothesis, this must be due, in part at least, to the fact that the religions with which we are most familiar *do* claim truth. However, this fact is to be explained historically as a reaction of religious thought to the new way of looking at things inaugurated in Ionia. It is curious that religious persecution for unorthodox *belief* is almost entirely confined to those cultures that stem from Palestine and Greece.¹⁰ There have been religious persecutions everywhere and at all times, but on investigation I think it can be safely said that outside the post-Milesian western world they have been almost without exception politically or economically motivated. This is easily understandable on the view here presented, because in the absence of logical and factual criteria of truth there can be no such thing as dogma in the strict sense. The history of heresy-suppression seems to begin in Athens about the middle of the 5th century B. C. The theory of religious persecution was completed by Plato in the *Laws*. That this development should be contemporaneous with the development of the philosophical and scientific consciousness is thus seen to be no accident; for we should suppose that the defenders of religious traditions, when faced with philosophical theories in opposition, would be forced to make truth-claims for their orthodoxies in self-defense, as it were. It may be paradoxical that the persecution of heretics turns out to be attributable to the philosophical and scientific, not the religious, spirit; but that is not the greatest paradox in the history of religions.

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¹⁰ As Cornford notes, the "rationalizing process", which I have here interpreted as the generalization of the conception of literal truth, was also at work amongst the ancient Hebrews. With them, however, it led to an exclusive monotheism rather than to philosophy.