

Assignment 2

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“What, if anything, is the difference between a mythological approach to cosmology and a philosophical approach?”
(Include material from first two sessions at least of Module.)

(fl. - floruit - is used at the first mention of an historical name to indicate the approximate time when a person was mainly active. A question mark indicates uncertainty about that person’s dates. The dates are taken from a variety of sources listed in the Bibliography: Grayling, Kirk, and Waterfield.)

1. Introduction.

The concepts of mythology and philosophy now have distinct meanings:- was there a time when the concepts were congruent? Typically, that question has been explored using Ancient Greece as the case study, comparing the archaic mythology of Homer (*fl.*750 BCE ?) and Hesiod (*fl.*700 BCE ?) with the origins of Western philosophy in the Ionian littoral, in certain Greek colonies, and on the Greek mainland, known to modern scholars as the Presocratic.¹ The latter term emphasizes a distinction between their thinking and that of Socrates (*fl.*380 BCE).² Given that the meanings of mythology and philosophy are malleable, evolving over the centuries, the choice of a specific period of history provides some stability for the exploration, but does not preclude changes within that timescale. For these reasons, I shall use this period for my answer.

Exploration of meaning in any historical period poses a range of problems. What are the sources for our knowledge and are they reliable? How may we avoid the danger of projecting our own, contemporary views and meanings upon past evidence? Are there specific barriers to our understanding, such as language or the ephemerality of oral transmission? Have subsequent political, religious, or socio-economic transformations distorted or destroyed data?³ The desire, shared by philosophers and historians, to locate an intellectual birth-place for the discipline may also pose the threat of being misled by a ‘foundation myth’.

¹ The period covering the various lives of the Presocratic philosophers is usually dated to c.600-c.400 BCE, and, towards the end, some had lifetimes overlapping with Socrates: R. Waterfield, *The First Philosophers: The Presocratics and Sophists* (Oxford; Oxford University Press, 2000) pp.xii-xiii.

² The term was introduced by nineteenth-century scholars: A.C. Grayling: *The History of Philosophy* (London; Viking, 2019) p.9.

³ For example, the loss of the legendary Library of Alexandria is commonly attributed to fire but is more likely to have been due to underfunding and neglect over centuries: R. Ovenden, *Burning the Books: A History of Knowledge Under Attack* (London; John Murray, 2020) pp.35-36. The deliberate destruction of ‘a vast amount of the literature and material culture of antiquity’ followed the Edict of Thessalonica, in 380 CE, when Christianity became the official religion of the Roman Empire, is cited by Grayling: *The History of Philosophy*, p.3.

Analysing whether mythological and philosophical approaches to cosmology were (then) identified as having separate meanings requires definition and evidence of the contemporary use and meaning of these terms. The data suggest that Greek-speaking peoples, living around the Mediterranean, possessed a shared, if varied, understanding of the pantheon in the epic poems and, among those with education, some familiarity with the work of the cosmologists.⁴ The theories of the latter were, perhaps, the first examples of abstract reasoning to circulate in written form.

2. Definitions.

The word 'mythology' has many meanings in a modern dictionary and it is necessary to refer to 'myth' for a complete tally.⁵ Griffin states that 'to define myth is extraordinarily difficult if it is to be separated from legend, folk tale and other relatives' and he adopts a definition that depicts myth as 'a special sort of traditional tale'.⁶ In contrast, Robert Graves claimed that true myth should be distinguished from a complex list of other categories, including 'philosophical allegory, as in Hesiod's cosmogony', satire, political propaganda, and heroic saga. He offered the following definition:

True myth may be defined as the reduction to narrative shorthand of ritual mime performed on public festivals, and in many cases recorded pictorially on temple walls, vases, seals, bowls, mirrors, chests, shields, tapestries and the like.⁷

When the words mythology and myth entered the English language, via French and/or Late Latin in 14th century CE, from the Greek roots of 'muthos' and 'muthologia' they had acquired the meaning of fable or fiction, of something invented, evolving by 1830 to 'fictitious narrative'.⁸

The primary meaning of the word philosophy has been more stable, entering modern English in 14th century CE, via Latin, from the Greek root 'philosophia', associated with the study of things and their causes.⁹ For the Ancient Greeks, philosophy meant 'love of

⁴ A joke about measuring the air - 'The man's a Thales' - appears in Aristophanes' play, 'The Birds', in 414 BCE, suggesting that the audience would have had some knowledge, if only of the legends, of the early Milesian cosmologists: M. Schofield, 'The Ionians' in: C.C. Taylor (ed.) *From the Beginning to Plato: Routledge History of Philosophy Vol.1* (London; Routledge, 2003: first published 1997) pp.47-87 (47).

⁵ L. Brown, (ed.) *The New Shorter Oxford English Dictionary on Historical Principles*, Vols.1 & 2 (Oxford; Oxford University Press; 1993).

⁶ J. Griffin, 'Greek Myth and Hesiod' in: J. Boardman, J. Griffin & O. Murray (eds.) *The Oxford History of the Classical World* (Oxford; The Softback Preview, 1992; first published Oxford University Press 1986) p.78.

⁷ Robert Graves, *Greek Myths*, 4th edn. (London; Cassell, 1965) p.13. Graves lists 12 categories of 'non-myths'.

⁸ C.T. Onions (ed.) *The Oxford Dictionary of English Etymology* (Oxford; Oxford University Press, 1966) p.601; C. Kay et al., *Historical Thesaurus of the Oxford English Dictionary*, Vol.I (Oxford; Oxford University Press, 2009) p.958.

⁹ Onions, *Etymology*, p.675; Kay, *Historical Thesaurus*, p.1112.

wisdom or striving for knowledge'.¹⁰ While the basic meaning may have remained fairly constant, debates about the subject matter of philosophy have exercised historians and philosophers throughout the centuries. Popper, for example, argues that in the period from Thales (fl.585 BCE) to Plato (fl.380 BCE), in every generation there was at least 'one new philosophy, one new cosmology of staggering originality and depth'.¹¹ By Plato's time, the areas of knowledge addressed by philosophers were markedly different from that of the earlier Milesians.¹² Following the abolition of the School of Athens, in 529 CE - the demise, after 800 years, of Plato's Academy - Western philosophy was almost wholly subordinated to theology during the medieval period.¹³ The re-emergence of rational, critical thinking, in post-medieval Europe, extending themes initiated in the ancient world as well as venturing into new ground, was closely associated with the development of modern science. From the early modern period, through a process of evolution, 'natural philosophy' has gradually been replaced by the empiricism of scientific method: the growth of scientific specialism has eroded the subject matter of philosophy. The only disciplines 'faithful to the original conception of philosophy' are metaphysics, epistemology, and ethics.¹⁴ Recognizing the same core disciplines, Grayling has a more nuanced view of the process, envisaging a patrolling of the circumference of knowledge by philosophers, to explore those areas where (as yet) there are no specialisms.¹⁵

The remaining term in the question, cosmology, has retained more consistency of meaning. In principle, a Greek-speaking theorist from Miletus was addressing essentially the same questions as today's scientific cosmologists - namely, the nature and order of the universe. What has changed is scientific method, depth of knowledge, and availability of technology that permits empirical exploration of the universe in ways that would have been beyond the imagination of early cosmologists.

3. Sources.

The textual sources for early Greek mythology and philosophy are problematic. The primary sources - the original, written version of the epic poems of Homer and Hesiod, and the poetry and prose of the the philosophers - are not extant. Instead, through a process of transmission, over hundreds of years, copies of earlier work, and commentaries upon those sources, are all that has survived. In many cases we have only fragments of texts that, having passed through different stages of transmission, survive in distorted versions. In some instances, only much later commentaries upon primary sources exist. Frequently, original work has been altered to accord with the views of

¹⁰ K. Ajdukiewicz, *Problems & Theories of Philosophy* (trsl. H. Skolimowski & A. Quinton) (Cambridge; Cambridge University Press, 1975: first published 1973) p.3.

¹¹ Karl R. Popper, 'Back to the Presocratics', Presidential Address to the Aristotelian Society, 13 October 1958, republished in: Popper, *The World of Parmenides: Essays on the Presocratic Enlightenment* (Abingdon, Oxon.: Routledge, 2012; first published 1998).

¹² The Greek word for philosophy, *philosophos*, only became popular in the fourth century BCE. Before then, the Presocratics may have been called Sophists: Waterfield, *The First Philosophers*, p.xxx. Later, Aristotle described them as *phusikoi* - physicists: Grayling, *The History*, p.9.

¹³ Grayling, *The History*, pp.78;131.

¹⁴ Ajdukiewicz, *op.cit.*, p.4.

¹⁵ Grayling, *op.cit.*, p.xx.

later authors - Aristotle (fl.350 BCE) being a prime example of a philosopher who adapted earlier texts to support his own theories.¹⁶ Much attention has been devoted to tracing the stages of transmission - identifying, in one major example, our indebtedness to Aristotle's successor, Theophrastus (fl.330 BCE), whose history of previous philosophers, from Thales to Plato, formed 'the main source of information' for the Presocratics; yet his work is lost, known only through the doxographers, such as Aetius (fl.100 CE), who compiled summaries centuries later - and his compilation was itself based upon an intermediate summary that is also lost.¹⁷ To add to the uncertainty, it is thought that Theophrastus' judgements were 'often derived directly from Aristotle'.¹⁸

The fragments, *testimonia*, the doxography, all clearly secondary sources and often of dubious value, have inspired immense scholarship, measured in a flow of books and articles interpreting this or that word, phrase, or paragraph - the 'minute exegeses of various passages'.¹⁹ Surprisingly, actual sources are rarely discussed: the nature and locations of textual materials are barely mentioned. A discussion about how many words could fit on a papyrus roll in the 6th century BCE, with the surmise that the letters were 'probably large', is relegated to a footnote in an important book on the Presocratics - but we learn that the writing was on papyrus that '...should have been relatively cheap' because of trade between Miletus and Naucratis in Egypt.²⁰ Further on, it is speculated that the (probable) one book by Anaxagoras (fl.470 BCE) written on papyrus, would have been comparatively cheap to purchase because of its short length.²¹ These, though, are isolated references to textual material.

Modern scholars rely heavily on the nineteenth-century work of the German philologist, Herman Diels, which evidently remains the best collection of the fragments.²² Typically, an account of Presocratic thinking will include fresh translations based largely upon that collection.²³ Our knowledge of the mythology and philosophy of the period are thus filtered through many layers, increasing the chances of misinterpretation and misunderstanding, and undermining certainty about meaning. As has been noted of a later period, but applies equally to this one:

¹⁶ G.S. Kirk, 'Sources for Presocratic Philosophy' in: G.S.Kirk, J.E. Raven, & M. Schofield, *The Presocratic Philosophers: A Critical History with a Selection of Texts*, 2nd edition (Cambridge: Cambridge University Press, 1983) p.3. See also, Kirk, 'Thales of Miletus', *op.cit.*, p.90.

¹⁷ *ibid.*, pp.1-6 (4-6).

¹⁸ *ibid.*, p.4.

¹⁹ Popper, 'Back to the Presocratics', p.19.

²⁰ Kirk *et al.*, *The Presocratic Philosophers*, p.103, n.2.

²¹ *ibid.*, pp.356-357.

²² H. Diels, *Doxographi Graeci* (first published 1879); H. Diels/W. (ed.) *Die Fragmente der Vorsokratiker*, 3 vols. (Zurich: Weidmann, 1951-52).

²³ For example, Waterfield, *The First Philosophers*, pp. xli-xlii. Waterfield is commendably open about his sources and expresses doubts about the veracity of some fragments and *testimonia*.

...it is at least a bit ironic that in the discipline that proposes to question everything - including the very reality of the past - the specialists who deal in particular with the discipline's past should take it for granted that they are dealing with an immediately accessible storehouse of ideas, preserved in texts that directly reveal the intended meanings of their authors...²⁴

4. Context.

The political, economic and social life of Ancient Greece, in the period 700-400 BCE, has been the subject of significant research by numerous authorities and the main outlines are well-known. Here, I summarize a selection of topics from that history that are of particular relevance to the mythological and philosophical approaches.

First, a 'Greek' identity cannot be assumed, especially in the early part of this period. Ethnic self-consciousness was growing, developing from shared language, trading and colonial patterns, urban settlement and, to some extent, common belief systems, but Greek identity was 'nascent'.²⁵ Secondly, there was an extensive history over centuries, of complex, changing patterns of trade, migration, warfare, and communication across the Mediterranean basin - a great deal of movement and intermarriage with other cultures.²⁶ Thirdly, in addition to Mediterranean connections, the proximity of the Ionian littoral to the Near Middle East ensured that the inhabitants of the Greek-speaking settlements were in contact with the long-established 'great river-civilizations' of Babylonia and Egypt, as well as the Hittite kingdom.²⁷ Kirk identifies 'coincidences in detail' between some Greek myths and Babylonian or Hittite versions, proving that

...conceptions not native to either the Aegean area, or to the proximate culture-centres of the Greek-speaking peoples before their entry into Greece, had embedded themselves in Greek thought even by the time of Hesiod and probably much earlier.²⁸

Fourthly, poetic licence, reworking of ritual, and variance in artistic expression in the plastic arts, ensured that although myths were 'central to Greek culture' there were no orthodox versions: myth preserved elements of the past, but also transformed them, interweaving fantasy and fact.²⁹ Fifthly, following the disappearance of Linear B, c.1200

²⁴ Justin E.H. Smith, 'The History of Philosophy as Past and as Process' in: M. Lærke *et al.* (eds.) *Philosophy And Its History: Aims and Methods in the Study of Early Modern Philosophy* (New York; Oxford University Press, 2013) pp.30-49 (32).

²⁵ C. Broodbank, *The Making of the Middle Sea: A History of the Mediterranean from the Beginning to the Emergence of the Classical World* (London; Thames & Hudson, 2015: first published 2013) pp.532-539.

²⁶ Broodbank, *op.cit.*, *passim*; Osborne, R., 'The polis and its culture' in: Taylor (ed.) *From the Beginning to Plato*, pp.9-46.

²⁷ G.S. Kirk, 'The Forerunners of Philosophical Cosmogony' in: Kirk, *et al.* *The Presocratic Philosophers*, pp.7-74 (7-8).

²⁸ *ibid.*, p.11.

²⁹ Griffin, 'Greek Myth and Hesiod', pp. 80; 83; 86.

BCE, Greek-speaking peoples appear to have had no written communication until an alphabetic system was adapted from Near Middle East sources, c. 800-750 BCE.³⁰ The growth of literacy, limited and gradual, enhanced communication, assisted the development of Greek identity and - significant in the history of philosophy - allowed ideas and observations to be recorded and discussed without the inevitable convolutions entailed in oral transmission. Trading links meant that papyrus was available in Ionia and elsewhere across the Aegean. Finally, the growth of urban settlements around the Aegean, and across southern Italy and Sicily, allowed the formation of elites:- influential male citizens with surplus wealth to enjoy relatively leisurely lifestyles (often dependent upon slavery). Such men used their status and wealth in leading communal religious activities, building temples and their accompanying panoply of statues and altars, formulating laws, and regulating morality.³¹

These features suggest that literate, male citizens, informed about their communities and parts of the wider world, with - perhaps - a growing consciousness of 'Greekness' and its differences from other cultures, benefiting from the relative security of urban settlement, and possessing sufficient means for a more leisurely lifestyle, were well placed, in historical terms, to develop critical awareness. It was from that matrix that individual thinkers emerged who were stimulated to question familiar, traditional beliefs.

5. Mythological Approaches to Cosmology

In the centuries before Homer, a largely peasant society was imbued with polytheism, in which the [Greek-speaking] world was '...shot through with the sacred'; systematization, over time, created a 'panhellenic pantheon'.³² These Olympian, anthropomorphized deities feature vividly in the *Iliad* and *Odyssey*, the epic, narrative poetry of Homer (or the succession of bards labelled as 'Homer') depicting an earlier epoch, a time of migration, settlement, and tribal-style warfare.³³ Intended to be sung, in public performance, and composed c. 750-700 BCE for a ruling or warrior class, the epic was constructed using bardic conventions.³⁴ By the time that the *Iliad* and the *Odyssey* were captured in textual form, the poems had undergone extensive transformations.³⁵ It is impossible to pinpoint the precise origins of the mythological elements of the epics. Assembling scattered references in Homer, Kirk reconstructs a 'a popular conception of the nature of the world' - a 'naïve' view of a round, flat earth, with a solid hemisphere of a sky above, layers of cloud consisting of mist, and above that 'shining upper air', *aither*. Below the surface, earth extends far downwards, with roots in or above Tartarus,

³⁰ Osborne, 'The polis and its culture', pp.11-12.

³¹ *ibid.*, pp.25-30.

³² Waterfield, *The First Philosophers*, pp.xx-xxi.

³³ Griffin suggests that the Homeric epics refer to a period of two to three generations during the Theban and Trojan wars of the early 12th century BCE: 'Greek Myth and Hesiod', p.84.

³⁴ T.F. Higham & C.M. Bowra (eds.) *The Oxford Book of Greek Verse in Translation* (Oxford; Oxford University Press, 1938). Bowra examines the development of Greek poetry but his view that the Greeks owed nothing to other civilizations is now redundant, pp.ix-xxxii. Higham considers the problems of translation, emphasizing that all 'translation is a kind of illusion' because Greek differs 'so profoundly from English', pp.xxxiii-cviii (cvii).

³⁵ Osborne summarizes modern exploration of the oral tradition: 'The polis and its culture', p.20.

the lowest part of the underworld; around the disc of the earth flows a vast river, *Okeanos*, which was ‘...a concept of considerable importance in pre-scientific Greek thought.’³⁶ The latter concept was probably borrowed from river-civilizations and was not so obviously based upon experience. He concludes, though, that ‘...nothing in Homer [...] could be reasonably construed as specifically cosmogonical or cosmological in content...’.³⁷

Although not epics in the Homeric form, the poems of Hesiod - *Theogony* and *Works and Days* - also emerged from the oral tradition, albeit in a process less well understood.³⁸ In the *Theogony* Hesiod organizes ancient myths into a structured cosmogony, with the ancestry of the gods traced back to ‘the beginning of the world.’³⁹ While the origin-myth in Hesiod, with its splitting of earth from sky, is most probably derived from non-Greek mythology, Osborne discerns ‘an important conceptual leap’ in the poems because the structured arrangement of the divine and human worlds are used ‘to establish consequences for human society’.⁴⁰ Waterfield, though, argues that despite Hesiod’s rationalization in grouping deities and concepts into a genealogical system, his belief in the mythical framework was unshaken.⁴¹

Thus although a mythological approach to cosmology was sometimes employed by Greek-speaking peoples in the early part of the period, the mythology was dominated by heroic epics featuring anthropomorphic deities, and by theological creation and succession myths; these latter, heavily influenced by Near Eastern myth from the river-civilizations and the Hittite lands, provided powerful tales of the behaviour of the gods and set moral standards for humans, which were to have a lasting impact upon Greek societies.

Alongside a moral code, the mythology of Homer and Hesiod introduced Greek-speakers to ‘modes of thought and of argument, and to the ways in which language represents issues’.⁴² That introduction would be reflected in the gradual rise of a more rational, critical way of thought for some individuals - initially among the Ionian cosmologists, and subsequently among other Presocratic philosophers, reaching perhaps its most advanced expression in the works of Plato (*fl.* 380 BCE). However, despite progression in rational thinking, mythology retained a powerful hold upon the Greek mind, continually reinforced in contemporary culture: - ‘the continuity of belief is due to the retention, at each particular time, of most beliefs’.⁴³ It is noteworthy that Plato proposed to employ the ancient myths in his state educational scheme, albeit in morally improved versions.⁴⁴

³⁶ Kirk, ‘The Forerunners’, pp.9-10.

³⁷ *ibid.*, p.14.

³⁸ Osborne, ‘The polis and its culture’, p.16. Kirk dates their composition to the early 7th century BCE, ‘...a generation or so later...’ than the *Iliad* and *Odyssey*: ‘The Forerunners’, p.34.

³⁹ Kirk, *op.cit.*, pp.34-35.

⁴⁰ Osborne, *op.cit.*, p.19.

⁴¹ Waterfield, *The First Philosophers*, p.xxii.

⁴² Osborne, *op.cit.*, p.25.

⁴³ W. Quine & J. Ullian, *The Web of Belief*, 2nd edn.(New York; Random House, 1978) p. 81.

⁴⁴ Plato, *The Republic*, (trsl. D. Lee) (London; Penguin Classics, 2007) 376e-398b, pp.68-93.

6. Philosophical Approaches to Cosmology

There is a broad consensus that an intellectual transformation occurred in Ancient Greece, during the period c.700-c.400 BCE, when thinking about the cosmos and human nature changed radically. The analysis of the precise character and extent of that transformation varies in emphasis. For Waterfield, it was a revolution, 'a paradigm shift'; Kirk describes a transition from myth to philosophy - '*muthos* to *logos*' - entailing political, social and religious change; Osborne argues that '...asking philosophical questions was never the prerogative of philosophers...', that Western philosophy was born in the cultural milieu of the Greek polis; Popper detects the foundation of a tradition of critical debate that created rational, scientific attitude necessary for innovatory thought; and Gottlieb identifies a combination of features that created the transformation - practical skills, contact with other cultures and mythologies, a free-thinking attitude to religion, and competitive public debate, which provided the critical tools to examine myths that were then crystallizing in textual form and therefore more available for reflective scrutiny.⁴⁵

Nothing survives of the work of Thales (*fl.* 580 BCE) credited with being the first of the Presocratics, and it is doubtful whether he wrote anything. His ideas have filtered down via later authors, including Plato, Aristotle (*fl.* 350 BCE) and Diogenes Laertius (*fl.* 250 CE). Our knowledge of Thales' cosmology 'depends virtually completely' on two passages in Aristotle.⁴⁶ Aristotle promoted his version of the first philosophers' deliberations about matter being the principle of all things - in Thales case, water. Thales was also said to have declared the earth to be sitting on water. Kirk attempts to deconstruct Aristotle's interpretation, deciding that it is unclear whether Thales believed that all things are *made* of water, or whether they originated from the substance. He shows how much of Thales' thinking was influenced by both non-Greek and Homeric mythology but concludes that, although Thales was aware of these 'mythological precedents,' he 'evidently abandoned mythic formulations'.⁴⁷

Cosmological theorizing continued in Miletus in the work of Anaximander (*fl.* 585 BCE), a pupil or associate of Thales, who constructed a complex framework based on the concept of an originaive material, *apeiron* - 'the boundless', 'the indefinite'.⁴⁸ Summaries of Anaximander's ideas suggest a major advance in conceptual thinking.⁴⁹ Delving further, though, one is confronted with a more variegated picture which, through transmission, was re-interpreted and expanded, particularly by Aristotle and Theophrastus. Kirk's scrupulous examination of the extant material is replete with

⁴⁵ Waterfield, *The First Philosophers*, p.xxiii; Kirk, 'The Forerunners', p.73; Osborne, 'The polis', p.40; Popper, 'Back to the Presocratics', pp.201-4; A. Gottlieb, *The Dream of Reason: A History of Philosophy from the Greeks to the Renaissance* (New York: Norton, 2002) (first published 2000) p.20. These are just a few examples from a very large academic literature.

⁴⁶ Kirk, 'Thales of Miletus', pp.76-99 (88-89); Aristotle, Book Alpha 3, 983b - 984a, *Metaphysics* (trsl. H. Lawson-Tancred) (London; Penguin Classics, 2004) pp.12-15.

⁴⁷ Kirk, 'Thales', pp.88-99.

⁴⁸ Discussion about the precise meaning of *apeiron* is inconclusive. Gottlieb cautions against the translation 'infinite': *Dream of Reason*, p.9, but the interrogation in Kirk may suggest otherwise: 'Anaximander of Miletus' in: *The Presocratic Philosophers*, pp.100-142 (105-117). See also Waterfield, *op.cit.*, pp.5-6.

⁴⁹ Grayling, *The History*, pp.14-15; Gottlieb, *op.cit.*, pp.10-12.

qualifying reservations, exposing our tenuous grasp of Anaximander's theories.⁵⁰ Nevertheless, Anaximander's concepts, including the notion of the earth hanging freely, in equilibrium, in the middle of the universe, suggest that he began '...the Presocratic trend to explain [celestial and meteorological] phenomena as the product of natural and comprehensible forces.'⁵¹ That does not mean that Anaximander entirely abandoned the mythology and religious beliefs then current - his concept of 'the indefinite' was (probably) linked to the immortality and 'boundless power' of the Homeric gods: he may have thought of the *apeiron* as 'the divine'.⁵²

The third of the early Milesian thinkers, Anaximenes (fl. 550 BCE) apparently identified *aer* - 'loosely translated as air but meaning a sort of dense moist air or vapour' - as the originaive material of the cosmos.⁵³ Anaximenes envisaged (in Greek terms) that human beings are given life by air and thereby animated or 'ensouled' and, that 'since our soul holds us together', air 'surrounds and interpenetrates the whole universe', which is therefore 'mobile and alive'.⁵⁴ That interpretation is disputed by Schofield, who insists that Anaximenes did not conceive of the human being as a 'microcosm' for the universe, but distinguished 'breath' (that as our soul controls us) from 'air', which encloses the whole world.⁵⁵ Developing concepts of condensation and rarefaction to explain material transformations, Anaximenes perceived the earth as flat and supported by air, with a celestial system of fiery heavenly bodies that formed from moisture rising from the earth. Evidently Anaximenes attributed divinity to the air because - in his scheme - it replaced '...some of the creative and meteorological functions of the traditional gods.' and, like them, was eternal.⁵⁶

These Ionian cosmological theories spread across the Greek-speaking world. It is apparent, from fragments and *testimonia*, that some schema were committed to papyrus and may have carried over trade routes to reach other settlements and colonies. The expansion of the Persian Empire and subsequent wars between Persians and Greeks are likely to have created the 'push' of migration for some individuals from Ionia, such as the philosopher Xenophanes (fl. 530 BCE) who left to wander in Sicily (and perhaps Italy). Another Ionian, Pythagoras (fl. 530 BCE) also travelled before settling in Italy. These and other migrants almost certainly transmitted Ionian ideas.

That at least some of the tenets of Ionian cosmology were known to other philosophers is confirmed by the later critiques of Aristotle and Theophrastus, and subsequently in the doxography. The 'peculiar continuity' of early Greek philosophy postulates that a circulation of ideas occurred.⁵⁷ However, the Milesians did not found a School of

⁵⁰ Kirk, 'Anaximander', pp.100-142.

⁵¹ Waterfield, *The First Philosophers*, p.8. He notes that Thales *may* have attempted to explain natural phenomena in similar fashion but the source - Seneca (fl.40 CE) - may be unreliable.

⁵² Kirk, 'Anaximander', p.117.

⁵³ Grayling, *The History*, p.16.

⁵⁴ Waterfield, *op.cit.*, pp.9-10.

⁵⁵ Malcolm Schofield, 'The Ionians' in: C.C. Taylor (ed.) *From the Beginning*, pp.64-68 (65).

⁵⁶ Waterfield, *op.cit.*, p.10.

⁵⁷ Kirk *et al.*, *The Presocratic Philosophers*, p.351.

philosophy, as was to happen later, in Athens, and the degree of continuity for their cosmology was at best chequered. Whereas they had wrestled with material explanations of natural phenomena, there is a detectable shift in the focus of later Presocratics, a blossoming of philosophical enquiry. The transition was by no means universal and nor did cosmological speculation cease. For example, Heraclitus (fl. 500 BCE) - 'renowned in antiquity for his obscurity' - identified fire as the material principle of his cosmology but, unlike his Ionian predecessors, developed a metaphysical theory of a cosmos governed by universal laws to be grasped by rationality.⁵⁸ It was that concern with the metaphysical, in the sense of questioning our knowledge of reality rather than seeking mechanical explanations of natural phenomena, that distinguished the Presocratic philosophers from the Ionian cosmologists.

Parmenides (fl. 470 BCE) employed 'abstract, logical argument' to deduce that ultimate reality was timeless, unified and unchanging: evidently Plato was greatly influenced by his thinking.⁵⁹ Empedocles (fl. 450 BCE) built an influential, durable cosmological theory of four elements being the basis of all matter, but employed immaterial forces - Love and Strife - as alternating powers that drove the system. Anaxagoras (fl. 460 BCE) is said to have brought 'Ionian naturalism' to Athens, where his theory, that the fundamental elements ('seeds') were always present in everything and that the mass was activated by mind or reason (*nous*), was criticized as too mechanical.⁶⁰ Another Milesian, Leucippus (fl. 440 BCE ?) and Democritus (fl. 420 BCE) the atomists, were more shadowy figures although their theories have been described as '...the crown of Greek philosophical achievement before Plato'.⁶¹ Infinite numbers of indivisible, fundamental eternal entities that were unchangeable, except in moving in the void, formed the crux of their ideas.⁶² Their cosmology drew upon old Ionian ideas of a flat earth but allowed for innumerable worlds - a new concept.⁶³ The atomists argued that knowledge gained through the senses was limited, that real knowledge could only be obtained through reasoning.⁶⁴ That distinction, part of the thinking of Parmenides and other Presocratics, would find its ultimate expression in the works of Plato.

Although some of the Presocratics had considered questions of morality - Heraclitus for example - a major shift in philosophical emphasis, from metaphysics to ethics, occurred at Athens during the lifetimes of Socrates and Plato. The search for naturalistic explanation was replaced by the notion of a 'Master Craftsman', of a rational universe designed by an intelligent, god-like being. That theory formed the basis of most Western

⁵⁸ Kirk, 'Heraclitus of Ephesus' in: Kirk *et al.*, *The Presocratic Philosophers*, pp. 181-212 (183-185); Grayling, *The History*, pp.27-30.

⁵⁹ Gottlieb, *Dream of Reason*, pp.60-64.

⁶⁰ Grayling, *op.cit.*, pp.43-45.; Gottlieb, *op.cit.*, pp.84-86.

⁶¹ M. Schofield, 'The Atomists: Leucippus of Miletus and Democritus of Abdera', in Kirk *et al.*, *The Presocratic Philosophers*, pp.402-433 (404;433).

⁶² Grayling, *op.cit.*, p.48

⁶³ Schofield, *op.cit.*, pp.416-419.

⁶⁴ Schofield, *op.cit.*, pp.409-413.

cosmology for the first twelve centuries of the Christian era, until the works of Aristotle resurfaced.⁶⁵

Conclusion

Evidence of the mythological approach to cosmology in this period mostly derives from the Homeric epics and the poems of Hesiod. The anthropomorphic explanations of the creation of the world, and the Olympic pantheon, were to be replicated in Greek art and drama, buildings, rituals, and festivals, in a mythological process that continued for many centuries.

The Milesian thinkers conceived versions of the origins and functioning of the cosmos that rested upon innovatory interpretations of natural phenomena rather than upon traditional creation mythology. Some of their ideas were linked to the prevailing mythologies of the period, especially in the case of Thales, and they do not portray a godless universe. Nonetheless, if one accepts that they represented an early version of critical reasoning, in Kuhnian terms it was a paradigm shift, to protoscientific rationality that encouraged the growth of philosophy in a world culturally dominated by mythology and anthropomorphic morality.⁶⁶

The work of the Milesians circulated in the Greek-speaking world, where subsequent philosophical enquiry resulted in a partial trend away from naturalistic cosmology to more abstract reasoning and metaphysical theories. By the closing decades of the fifth century BCE, cosmological theorizing was overshadowed by the concentration upon epistemological matters and ethics. Even then, mythology was never entirely absent from the work of the philosophers.

The major difference between the mythological and philosophical approaches to cosmology is that while both involved a degree of observation of natural phenomena, the former approach was based upon untestable fantasy; the latter sought answers by reference to perceived material fact and applying rational hypothesis. However, it would be many centuries before cosmological facts and theories could be tested scientifically.

Finally, it should be stressed that much of our knowledge of the Presocratic philosophers is conjectural and that the scholarly debate about their cosmology may have acquired its own mythology.

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⁶⁵ Gottlieb, *Dream of Reason*, pp. 203-204.

⁶⁶ '...paradigms [...] universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners': T. S. Kuhn, *The Structure of Scientific Revolutions*, 2nd edn. International Encyclopedia of Unified Science, Vol. 2, No. 2. (Chicago; University of Chicago Press, 1970) p.viii.

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